

REPORT OF ACADEMIC STANDARDS COMMITTEE

Report #S2022–1; June 2022

In this report the Academic Standards Committee (ASC) brings to Senate its evaluation and recommendation on the following items:

- A. FEAS – New Program Proposal for Mechatronics Engineering (BEng)
- B. ARTS - Co-op - Expansion to Include Department of Philosophy
- C. CHANG SCHOOL - Review, discontinuation, and new proposal for certificates in Accounting/Finance
- D. CHANG SCHOOL - Proposal for a new Full Stack Developer certificate
- E. PERIODIC PROGRAM REVIEW – RTA New Media – The Creative School
- F. PERIODIC PROGRAM REVIEW – Philosophy – Faculty of Arts
- G. TRSM - Business Technology Management Co-op Option - Amended Work Term Number and Sequencing Proposal
- H. For Information: CHANG SCHOOL CERTIFICATES – Revisions (April/May 2022)
- I. For Information: 1-year follow-up report for Periodic Program Review: School of Business Management

A. FEAS – New Program Proposal for Mechatronics Engineering (BEng)

Introduction

Description of the Program

Program and Degree Information

Program Name: **Undergraduate Program in Mechatronics Engineering**
Degree Designation: **Bachelor of Engineering (BEng) in Mechatronics Engineering (Full-time, four-year program)**
Bachelor of Engineering (BEng) in Mechatronics Engineering Co-operative (Full-time, five-year co-op program)
Academic Units: **Mechanical and Industrial Engineering & Electrical, Computer, and Biomedical Engineering, Faculty of Engineering and Architectural Science**

Principal Faculty: *Thomas Duever* (Dean),
Liping Fang (Associate Dean- Undergraduate Programs and Student Affairs)

(Involved in Program Development) *Farrokh Janabi-Sharifi* (Lead Faculty Member), Mechanical and Industrial Engineering
Kourosh Zareinia, Mechanical and Industrial Engineering
Sajad Saedi, Mechanical and Industrial Engineering
Vincent Chan, Mechanical and Industrial Engineering

Dontaus Oguamanam, Chair of Mechanical and Industrial Engineering

John Chen, Electrical, Computer and Biomedical Engineering

Fei Yuan, Electrical, Computer and Biomedical Engineering

Dimitri Androutsos, Chair of Electrical, Computer and Biomedical Engineering

Naming and nomenclature for the program follows the principles of degree nomenclature¹ as follows.

- i) The name of the program (Mechatronics Engineering or MTE) is consistent with national and international norms.
- ii) The degree is named according to the broad discipline to which it belongs, i.e., Bachelor of Engineering (BEng).
- iii) Since the program is an extension of the existing Mechatronics option within Mechanical Engineering, it is familiar to many students in Engineering. Also, because some universities offer a similar program, many program applicants are expected to be familiar with the name of the program.
- iv) The name of the program conforms to related accreditation (Canadian Engineering Accreditation Board (CEAB)) body guidelines. For example, Mechatronics Engineering program has already been accredited for McMaster University (2009), and University of Waterloo (2008).
- v) The abbreviation (MTE) does not use full stops, commas, or other punctuation marks.

The completion of the program requires taking 45 courses (each having 1 Billing Unit) including 11 courses in mathematics, natural sciences, material science and computer science, 13 courses specific to Mechatronics Engineering (including 2 Capstone Project courses and 2 being offered by Electrical Engineering program), 8 courses from Mechanical Engineering, 1 course from Electrical Engineering, 4 core electives courses, and 4 courses in Liberal Studies. The rest of the courses will be 2 Common Engineering courses (CEN), 1 Communications course (CMN), and 1 Engineering Economics course from the Department of Economics (ECN). Passing of a Writing Skills Test is also required. The program will be offered in the format of a full-time four-year or a full-time five-year cooperative program.

Mechatronics is a relatively new multidisciplinary discipline that combines *synergistically* knowledge and skills from mechanical engineering, electrical engineering, and computer science (Figure 1). The main focus is on the design and implementation of engineering cybernetic equipment such as robots, production systems and consumer electronics. The process of synergistic design involves more than design of mechanical, electrical and software systems. The American Society of Mechanical Engineers (ASME) describes Mechatronics Engineering as “where electronics meets mechanical engineering, computing, optics, actuators, sensors, digital controls,

¹ <https://www.adelaide.edu.au/learning/program-approval/development/nomenclature/>

and robotics. From its inception in computer-controlled machining and factory automation, mechatronics has incorporated these engineering disciplines and more, plus bioengineering and nanotechnology.”²

The program in mechatronics engineering equips students to deal with the range of problems and challenges within the field. The program is based on a rigorous foundation in mathematical and scientific practices that lead to training in mechatronics engineering design processes. Mechatronics is dedicated to the design of many current and emerging devices. “Mechatronic devices are ubiquitous and range from imaging systems to antilock brakes. Their complexity drives the development and evolution of the engineering discipline.”²

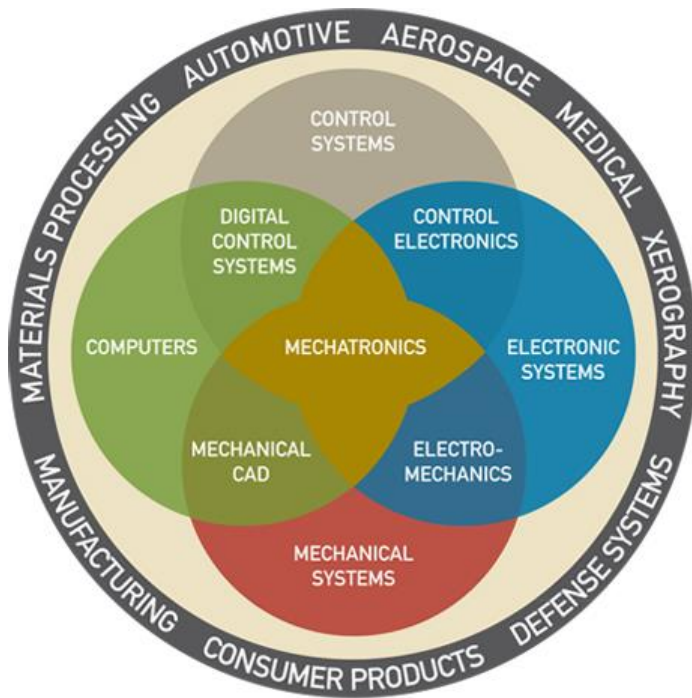


Figure 1 Systematic view of Mechatronics Engineering

Program Designated Unit and the Governance Structure

The program will be housed in the Department of Mechanical and Industrial Engineering. An Associate Chair, Mechatronics Engineering, will be reporting to the Chair of the department. It is the policy that all issues involving curriculum go through that program's curriculum committee before being discussed in the department meetings and/or Department Council meetings. It is the policy that all hiring of faculty, administrative staff, or technical officers require a committee: Department Hiring Committee (DHC) for faculty hiring, a committee that includes the reporting person for staff hiring and faculty representation, and a committee that includes the Technical Manager for technical officer hiring and faculty representation. The compensation for faculty is negotiated by the Dean on behalf of the university, and that of the staff and technical

² <https://www.asme.org/engineering-topics/mechatronics>

officers are guided by Human Resources (HR). Course assignment/loading is the purview of the Chair, who generally consults the appropriate Associate Chair and related faculty when situations are unclear, but the Dean is the final decision maker.

Discussion of Overlap

Due to its multidisciplinary nature, and to optimize economy and sustainability of the program, the program will share some of the courses from Mechanical Engineering and Electrical Engineering programs in all years. Similar to the other existing BEng programs in the Faculty of Engineering and Architectural Science (FEAS), the first semester is designed to be common with other BEng programs while the second semester is common with the Mechanical and Industrial Engineering programs.

Evidence of Societal Need

Evidence of societal need and labour market demand

As we move into 2020, the ability to understand, use, and innovate new technologies is becoming a much sought-after skill in the engineering industry. According to *Educating the Engineer of 2020*³, a work compiled by the National Academy of Engineering (NAE) in 2005, “scientific and engineering knowledge presently doubles every ten years.” As a university with strong technical background in Canada, it is important for Ryerson University to recognize trends in undergraduate education and to consistently respond in a timely manner to ensure that its graduates never lack basic skills as engineers and scientists in industry and in academia. Ryerson University needs to address fundamental changes in the engineering process, changes that have materialized due to an increase in the complexity of technology. In the analysis shown in *Educating the Engineer of 2020*³, Mechatronics Engineering has received significant emphasis as an emerging and rapidly growing discipline to meet increasing societal and industrial demand.

As put by the ASME (American Society of Mechanical Engineers), “Mechatronics are all around us, from computer hard drives and robotic assembly systems to washing machines, coffee makers, and medical devices. Electronics that control mechanical systems account for much of the value of the average automobile, managing everything from autonomous driving, stability control and antilock brakes to climate control and memory-adjust seats.”⁴

A brief from Ernst and Young suggests that the use of mechatronics maximizes throughput, reduces lead time, eliminates set up time, enables addition of features, and enhances productivity. “*Leveraging on its increasing relevance, mechatronic engineering finds application across a number of industries such as aerospace, automotive, chemical processing, health care, manufacturing and mining.*”⁵

³ National Academy of Engineering (NAE). *The Engineer of 2020: Visions of Engineering in the New Century*. 2004. 13 April 2006.

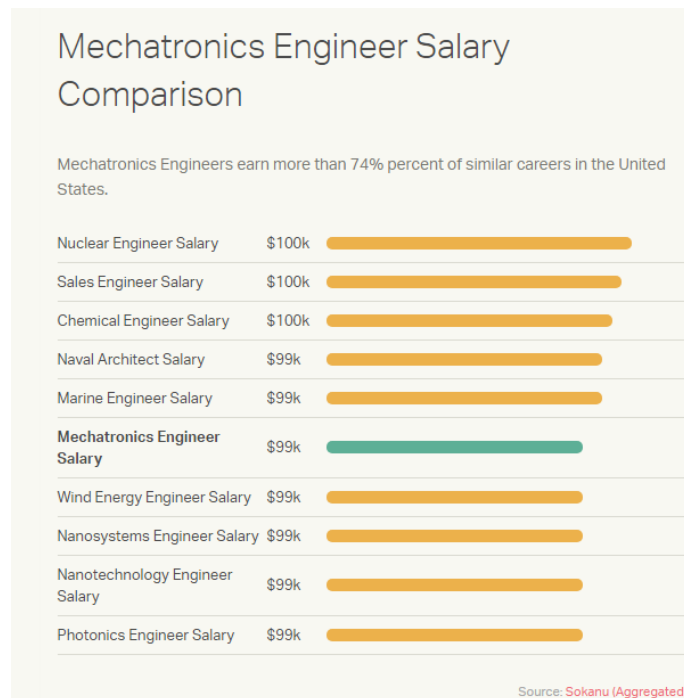
⁴ <https://www.asme.org/engineering-topics/articles/mechatronics/mechatronics-and-the-role-of-engineers>

⁵ Devendra Parulekar, Why does your company need Mechatronics? Ernst and Young Brief.

“The implementation of mechatronics solutions requires strong integration among the mechanical, electronic and software engineering teams that are working toward a common goal. This requires better coordination between specific-discipline teams through effective communication and clear ownership. More often than not, they bring with them natural silos of knowledge that they must overcome, in order to work together.”⁶

Various skills are required for Mechatronics Engineers to work in a wide variety of industries such as professional and technical services, to computer and electronic manufacturing, and aerospace and defense. As a matter of fact, Mechatronics Engineers are employed in a wide range of industries, hospitals, research facilities, and government agencies.

This diverse industry spectrum forms a bright future for graduates of mechatronics programs. They must understand how mechanical, electrical, and computer components interact to design/operate an overall system within the technologically advanced products demanded in today’s marketplace. Courses in modern control theory, microcontrollers, and robotics are core of a mechatronics program. Systems Engineer is also an alternative description of many similar titles for mechatronics engineering positions worldwide. A closer look at Sokanu database⁷ reveals that Mechatronics Engineers are among the top 10% highly paid engineering positions as shown in Figure 2.



⁶ Devendra Parulekar, Why does your company need Mechatronics? Ernst and Young Brief.

⁷ www.sokanu.com

Figure 2 Highly paid positions in the field of mechatronics engineering, all in US\$ (courtesy of www.sokanu.com)

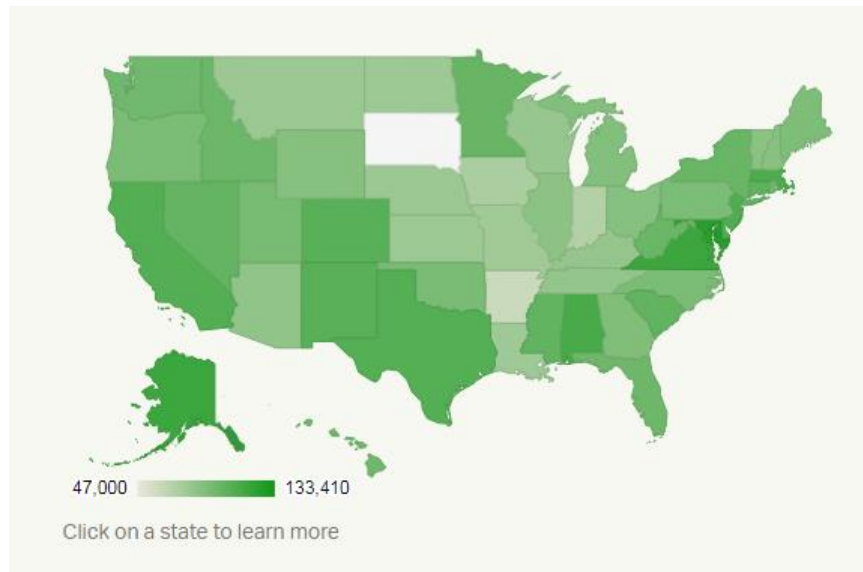


Figure 3 Job advertisement distribution among different states for mechatronics position (courtesy of www.sokanu.com)

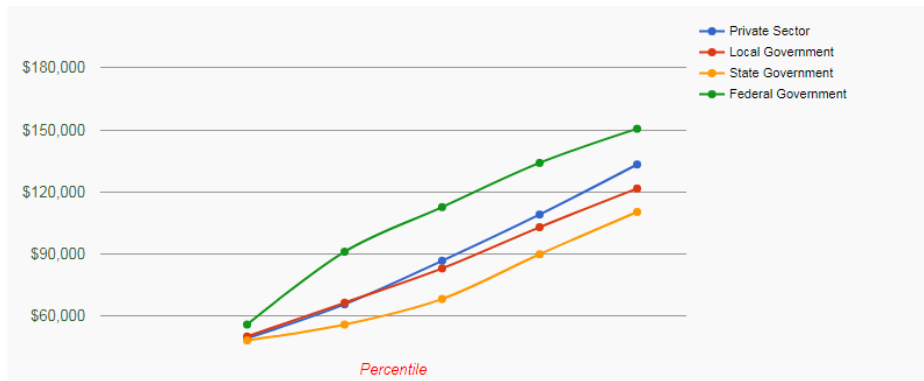


Figure 4 Annual salaries of companies in different sectors for mechatronics positions. Salaries in US\$ (courtesy of U.S. Bureau of Labor Statistics).

A distribution of job advertisements for Mechatronics Engineers in US is shown in Figure 3. These ads are distributed unevenly across different states in US, helping individuals target where they plan to seek job in the future. The federal government is the highest paying sector as in any salary range for mechatronics positions across the US as depicted in Figure 4. The U.S. Bureau of Labor Statistics has also predicted 5% growth for Mechatronics Engineers from 2014 to 2024 compared to (-1%) growth for electrical engineer jobs in the same time span. These figures reveal that a Mechatronics Engineer gets an average compensation ranging from \$64,000 and \$96,000 based on tenure level. Mechatronics Engineers can expect an average pay level of \$88,800 on an annual basis. Mechatronics Engineers are paid most highly in the District of Columbia, where they get job

pay of approximating \$116,420. Employees with these job titles have the highest pay levels in Public Administration, where they can earn a compensation of \$103,380⁸. Burning Glass (www.burning-glass.com), a company specialized in the use of web spidering to report the latest job markets, recently reported that Mechatronic Engineering job postings experienced 130 percent growth in the recent years.

To find out what the hiring situation and job opportunities for Mechatronics Engineers are in Canada, a job search was specifically conducted in early January 2017 using the keyword search box for “Mechatronic Engineers” on the job search site <https://www.indeed.ca>. This site finds and consolidates employment positions from online job boards, newspaper listings, classified ads and company websites. The nationwide search included jobs from across Canada. The search was limited to postings appearing within a 15-day period prior to January 11th, 2017. The search yielded 26 positions. Eliminating for duplication and co-op or internship positions, the number of discrete and relevant jobs advertised for this period was 19. These were captured in the table provided in the January 2017 report⁹.

In order to update the scan, the identical search (nationwide, 15-day period, keyword search using “Mechatronics Engineers”) was repeated on <https://www.indeed.ca> on April 11th, 2019. This time 61 jobs were found. Examination of the individual postings eliminated some jobs for duplication and position (co-op). This process yielded 53 discrete positions that asked for education that included a degree in Mechatronics Engineering or equivalent. Figure 5 to Figure 10 are graphical depictions of our findings which can be summarized as follows.

- Assuming that job postings are not clustered within specific times of the year, it shows that the availability of jobs in the field more than **doubled**.
- The jobs usually indicated a degree at the **bachelor’s level**. Only a few indicated that a master’s level education was preferable.
- Most of the jobs were in **Ontario**.

To get a further insight into job opportunities a search was done on Burning Glass Insights/Jobs <https://labourinsight.burning-glass.com/jobs/can#snapshots/filter>. The search conducted April 9th, 2019, used the Regional Scan workflow.

Query conditions:

Last 12 months AND Nationwide AND Burning Glass Occupation (BGT OCC): Mechatronics Engineer)

Filters Applied

Time Period:	Last 12 months	April 1, 2018- March 31 st 2019
Location:	Canada	Nationwide
BGT OCC:	Mechatronics Engineer	

⁸ <https://www.recruiter.com/salaries/mechatronics-engineers-salary/>

⁹ Jean de Sousa-Hitzler (January 2017), Research to Support the proposal for a degree in Mechatronics Engineering. See table on Page 15 of that report.

Findings:

A total of 53 jobs were found specifically for the Job Title “Mechatronics Engineer.” Note that this number would actually be greater because a more manual search (on electronic job boards) indicated that alternate names are often used for the positions that do require a degree in Mechatronics Engineering.

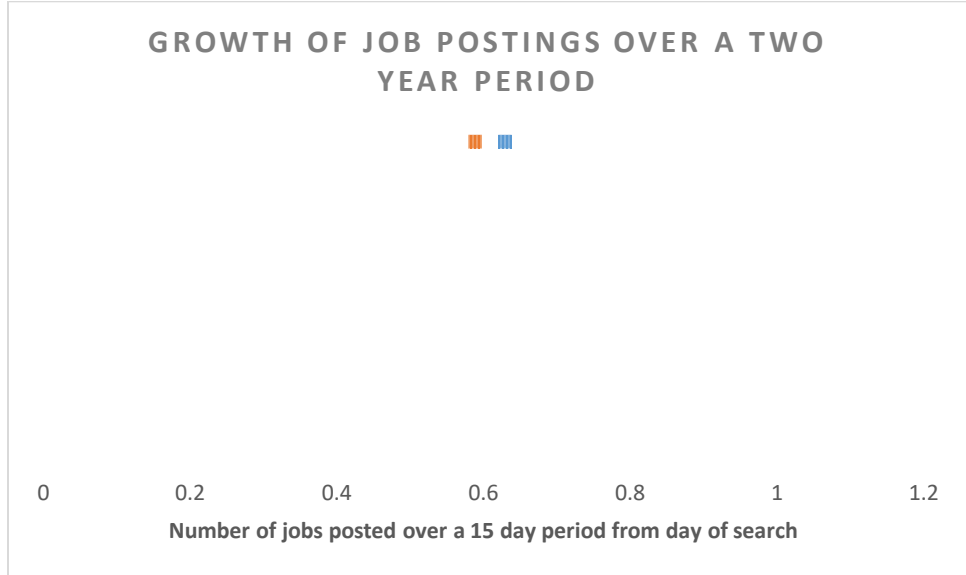


Figure 5 Job growth in two years in Canada.

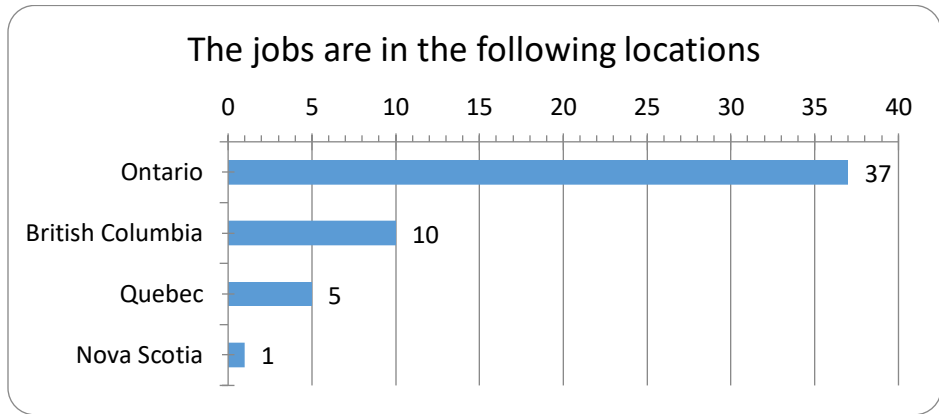


Figure 6 Job postings across Canada.

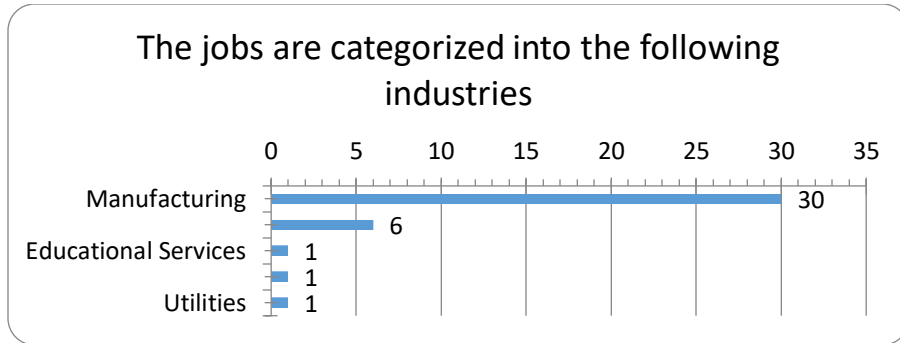


Figure 7 Job postings for different industries in Canada.



Figure 8 Samples of employers in Canada.

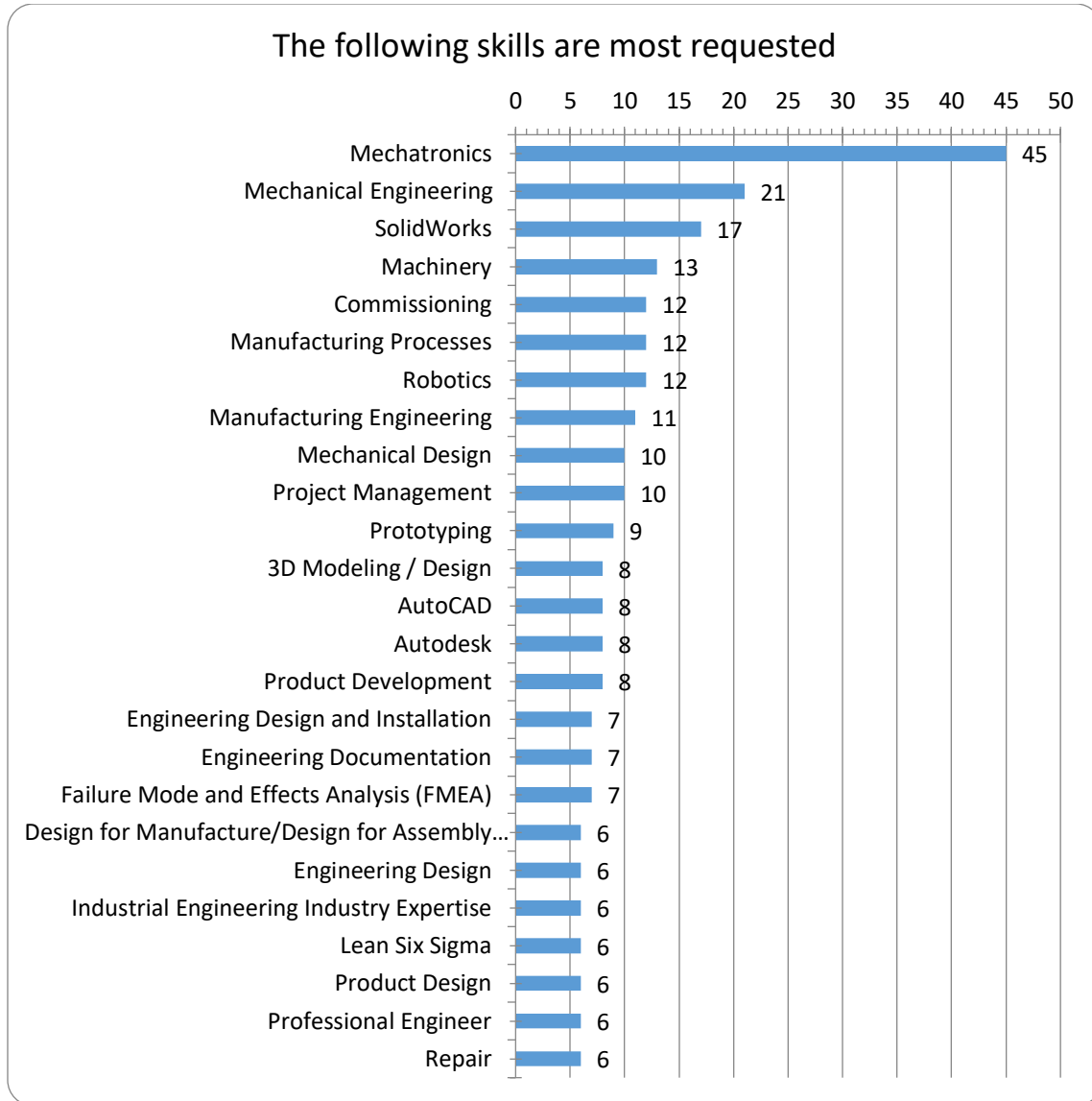


Figure 9 Requested skills distribution in Canada.

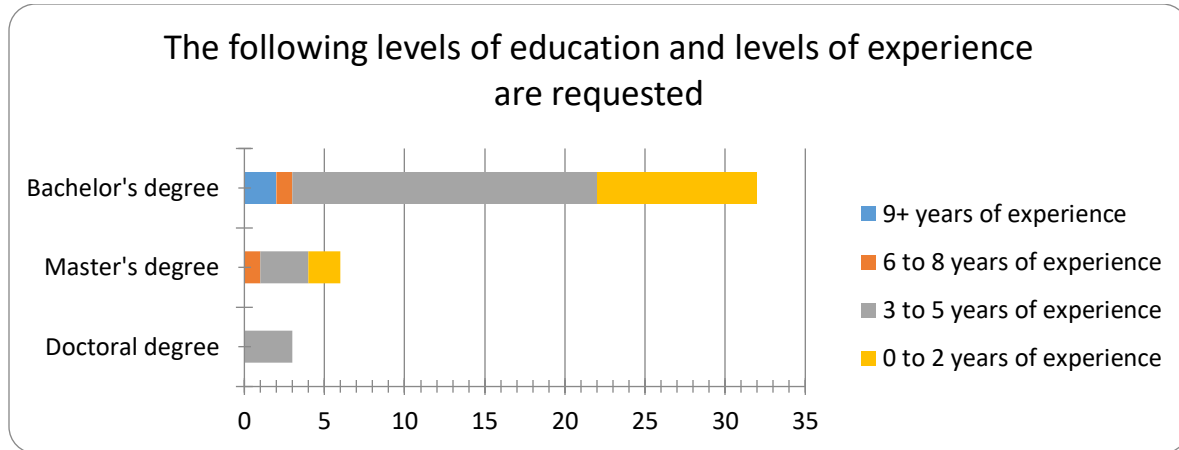


Figure 10 Levels of education requested in Canada.

In summary, given the above analysis for Canadian and US industries, several key observations can be made regarding the growing need for mechatronics engineers.

- The market analysis shows that there will be a significant shortage of engineers, and particularly Mechatronics Engineers, in the future. Engineers Canada forecasts¹⁰ steady growth of engineering skills shortage for the next 5 years. “Though the number of engineering jobs available is on the rise, the number of candidates to fill them is not growing at the same pace. This continues the trend seen over the last few years. Currently 30% of engineers are 55 or older, with 56% of those being over 65. This is a concerning trend, which indicates the skills shortage is on track to worsen as older engineers opt to retire.” As stated by US Bureau of Labor Statistics,¹¹ there will be steady growth of labor market for mechatronics engineering and mechanical engineering during the coming years. The number of mechatronics job postings has grown substantially since 2010 (e.g., 130% during 2010-2012)¹².
- Some mechatronics related training might be available through graduate schools to focus on specialized fields such as actuators or robot control, but the wide spectrum of industry (ranging from professional and technical services to computer and electronic manufacturing, to aerospace and defence) requiring mechatronics engineering skills necessitates broad systems-level knowledge to adequately prepare them for a range of industries. This is possible through an undergraduate level training. Only a small proportion of mechatronic engineering job postings demand a graduate degree, and postings frequently require four or more years of experience¹⁰. Therefore, a graduate program training would not suffice for this growing demand and a four-five years training and experience through a Bachelor of Engineering degree would be a proper response to such a demand (Figure 11).

¹⁰ *Engineering Labour Market in Canada, Projections to 2025*, Engineers Canada, June 2015.

¹¹ https://study.com/articles/Mechatronics_Engineer_Salary_Duties_Outlook_and_Requirements.html

¹² *Market Demand for Master’s Degree in Mechatronics Engineering-Analysis of Industry Trends and Competitor Programs*, Education Advisory Board Company, COE Forum, 2013.

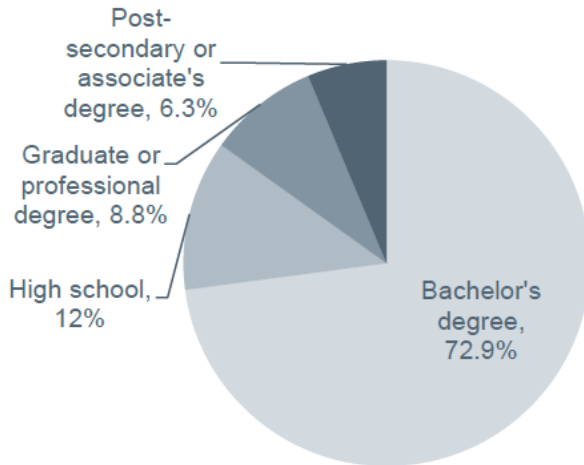


Figure 11 Advertised educational requirements for Mechatronics Engineering job postings (n = 671,356 job postings with 179,822 unspecified. *Source: Burning Glass Labour/Insight™*)

In addition to meeting the societal needs, the proposed program will also benefit the university in several ways.

- The small number of Mechatronics BEng offerings in North America may enable the new program to attract not only many domestic but also international students. Due to the lack of market saturation in Mechatronics Engineering, Ryerson University will be able to attract more students to the new program compared to the traditional engineering disciplines. This will provide a steady source of income and additional resources to the university.

The quality of students entering the program is expected to be higher compared to many current engineering disciplines at Ryerson University. This is the trend in other universities which have already implemented the program. This is also indicated by the higher CGPA of current students who choose the Mechatronics Option at Ryerson University. This will create a larger pool of highly qualified alumni, elevating the Ryerson University brand in the society, and potentially increasing the support the University receives through alumni.

Evidence of student demand and need for Mechatronics education

The need for mechatronics education has been described in the feasibility study reports of a few universities across north America. For example, 2015 report of the University of Southern California reports that: *“Due to the accelerated growth of electronics, computers and information technology industries, a gap has emerged between the teachings of traditional non-Electrical Engineering education (e.g., Mechanical Engineering, Civil Engineering, Chemical Engineering, etc.) and the skills expected of non-EE graduates entering the job market. A deluge of computers, sensors, microcontrollers, actuators has permeated present-day society. Microcontroller-based devices and appliances are found in all aspects of our everyday life. Even the auto industry, a traditional mechanical engineering fiefdom, is putting tens of microcontrollers in a modern*

automobile, and plans to increase this number multifold as new technologies are being introduced.”¹³ Similarly, the objective of Southern Polytechnic State University (SPSU) in Georgia establishing a Mechatronics Engineering Degree program was to meet the identified “industry requirements for graduates with knowledge of integration of mechanical engineering, electrical engineering, and control systems.” They envisioned that their graduates could “select from a wide spectrum of industries for career choices and can also contribute in a variety of roles including design engineer, software engineer, project planner, product designer, and project manager.” In addition, they could “select from jobs as Mechatronics specialists in a variety of industries. Opportunities will also be available to graduates in smaller companies that need generalists who can perform both mechanical and electrical engineering functions.”

In Canada, demand for engineering degree programs is high, as undergraduate applications to engineering programs have grown by 90 per cent over the last decade and entrance averages into the 90s¹⁴. To meet this demand, Canadian universities need to expand their engineering programs while maintaining the balance between long-term needs for engineering skills and the current labor market. Presently, Canadian universities are undergoing a significant transformation that is being shaped by socioeconomic factors, demographics, accountability, internationalization, faculty renewal, and investment strategies of provincial and federal governments. Shifting economic, societal, and cultural conditions require new emphases. Demographic forces are placing new demands on universities to open their programs to larger numbers of students without significant investment in operating and infrastructure requirements. In many instances, this has led faculties and universities to develop new academic models for undergraduate and graduate education and to align research priorities around key strategic areas. Internationalization, continuing, part-time and distance education, co-operative education, full-cost recovery programs (undergraduate and graduate), and broad-based multi-disciplinary programming are at the forefront of academic restructuring. A key indicator of success lies with excellent and well-resourced programs that are attractive to undergraduate and graduate students. The concluding remark could not be better put than what Sandro Perruzza, CEO of the Ontario Society of Professional Engineers offers: “If you look at where the jobs are in Canada, it’s all around technology. Do we need to expand programs? I think we do, but we need to do it in emerging technology, in mechatronics, in nanotechnology, things you will need in five to 10 years”.¹⁵

A Mechatronics Specialization was started in the Department of Mechanical and Industrial Engineering at Ryerson University in 2003, followed by Mechatronics option in 2008, starting with

¹³ V. Giurgiutiu et al. Mechatronics/microcontroller education for mechanical engineering students at the University of South Carolina, Mechatronics 15 (2005) 1025–1036

¹⁴ <http://www.theglobeandmail.com/news/national/engineering-programs-in-ontario-universities-look-to-expand/article29307185/>

¹⁵ <http://www.theglobeandmail.com/news/national/engineering-programs-in-ontario-universities-look-to-expand/article29307185/>

a class of 20 students. Since then, the number of enrolling students has quintupled, now reaching about 100 per year (Table 1). This growth is correlated with the increasing market demand for Mechatronics Engineering skills. Unfortunately, based on the feedback received from students, faculty members, and industry, the limited scope of the current program (i.e., limited number of courses offered through the current option) does not meet the educational content and skills expected of Mechatronics Engineers. This clearly indicates the students’ need for a full 4-5-year training program.

Table 1 Number of Ryerson students graduated in Mechatronics Option Annually during the last 8 years.

2014	2015	2016	2017	2018	2019	2020	2021
28	26	33	43	45	55	79	93
-	(-8%)	(+27%)	(+30%)	(+4.6%)	(+22%)	(+44%)	(+17.7%)

Comparison of the proposed program with the most similar programs

Currently, there are a few universities in Canada, and particularly in Ontario, that offer a 4-year bachelor’s degree in Mechatronics Engineering. These universities, ordered according to when their Mechatronics program started, are: University of Waterloo, Simon Fraser University, McMaster University, University of Ontario Institute of Technology, and Western University (Table 2). Due to the high demand for Mechatronics Engineers, as demonstrated in section 2.2, the number of programs is expected to rise in the future, as it is seen in the recent growth of programs in Canada during the last 5 years. Studying the Mechatronics Engineering curricula of the above institutions reveals that the curricula of University of Waterloo and Ryerson University both emphasize **laboratory, hands-on, and design experience**. However, the **Ryerson University Mechatronics Engineering program has more emphasis on design** compared to the other universities offering Bachelor’s program in Mechatronics Engineering. Also, only a few programs, the proposed program included, include **co-operative education and internship option**. The Ryerson University program stands **high in terms of experiential learning indicated by the number of laboratory/tutorial hours (61)** compared to the others.

Apart from the aforementioned differences, as described in the previous sections (Societal Needs and Need for Mechatronics Education), due to the significant and immediate need for Mechatronics Engineers (that cannot be fully met by the existing programs), even the duplication of the programs (similar to many traditional engineering programs such as Mechanical Engineering, Electrical Engineering, and Civil Engineering) will lead to significant contributions and successful results.

Table 2 Total number of courses in different BEng/BASc Mechatronics Programs.

Ryerson University	University of Waterloo	Western University	McMaster University	Ontario Tech (UOIT)	Simon Fraser University	Mean (STDEV)

45	42	48	46	46	44	45.1 (2.01)
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Program Objectives

Program’s Goals and Consistency with the University’s Mission and Academic Plan

The Ryerson University Act of June 1993 specifies Ryerson’s *mandate* as follows:

- The advancement of learning and the intellectual, social, moral, cultural, spiritual and physical development of the University’s students and employees, and the betterment of society.
- The advancement of applied knowledge and research in response to existing and emerging societal needs and in support of the cultural, economic, social and technological development of Ontario.
- The provision of programs of study that provide a balance between theory and application, and that prepare students for careers in professional and quasi-professional fields.

The updated Ryerson *mandate* outlined in Strategic Mandate Agreement between Ryerson University and Ministry of Advanced Education and Skills Development (2017-2020)¹⁶ is as follows:

“Ryerson University is a leading institution of innovation and entrepreneurship that responds to societal need through high-quality, professional, and career-related bachelor, masters, and doctoral programs, and relevant scholarly, research, and creative activities. Ryerson is student focused, providing an emphasis on experiential learning, creativity, entrepreneurship, adult learning, and transfer pathways from colleges and other universities. Ryerson is an inclusive, diverse learning community. In its role as a City Builder, Ryerson enhances access and civic engagement, and has a positive, transformative effect on its neighborhood and the broader community.”

The special *mission* of Ryerson University (2017-2020)¹⁷ is also summarized as: “the advancement of applied knowledge and research to address societal need, and the provision of programs of study that provide a balance between theory and application and that prepare students for careers in professional and quasi-professional fields.

As a leading center for applied education, Ryerson is recognized for the excellence of its teaching, the relevance of its curriculum, the success of its students in achieving their academic and career objectives, the quality of its scholarship, research and creative activity and its commitment to accessibility, lifelong learning, and involvement in the broader community.”

¹⁶ www.ryerson.ca/content/dam/about/accountability/documents/RU-SMA-2017-2020.pdf

¹⁷ www.ryerson.ca/about/accountability/mission/
www.ryerson.ca/content/dam/about/accountability/documents/RU-SMA-2017-2020.pdf

Based on this mandate and in accordance with the University's mission, the proposed Mechatronics Engineering program is a proper response to the societal needs (as will be shown in the following sections) and has been designed to excel in innovation and in professional and career-oriented education. The proposed program objectives are well-aligned with the values and priorities of the University outlined in 2020-2025 Academic Plan. In particular, the **program objectives** (aligned with Mechanical Engineering program) are:

- To provide an educational experience of the highest quality to its students, a stimulating professional environment for its faculty and staff, and service to the wider community.
- To develop students' professional knowledge and skills, self-confidence, critical inquiry, creativity, commitment to lifelong learning, management and leadership skills, capacity to contribute to the engineering profession and to apply their knowledge to real-world problems.
- To provide a fully accredited educational experience which includes:
 - Excellence and commitment to teaching, with an emphasis on innovative and traditional teaching methods that encourage students to take an active role in their learning.
 - A curriculum which, through a combination of professional education and liberal studies, offers the breadth and depth required to appreciate society's broader problems and issues, and the basic human understanding and knowledge necessary for professional leadership.
 - A program with emphasis on experiential learning through the provision of a variety of design studios and laboratories, as well as co-operative and internship option.
 - An academic program which combines a rigorous theoretical and analytical foundation and practical, real-world problem solving skills.
 - An intellectual and physical environment with support services which encourages and enables faculty and students to engage in scholarly, research and creative activities in the form of undergraduate design and graduate thesis projects in basic and applied research topics.
- To undertake scholarly, research and creative activities which contribute to and enhance the quality, currency, and relevance of the professional program's learning experience.
- To provide motivated, responsive, and responsible academic leadership which ensures the continuous development and improvement of the academic program, and which facilitates the dissemination and transfer of new knowledge and technology to and from the profession, industry, business, government, and the community.

The outlined objectives are consistent with the priorities of the University Academic plan related to:

- (1) *Student Experience*, e.g., by fostering “interdisciplinary and experiential learning opportunities that bring students and faculty together to address real-world problems,” and “use of open educational practices, flexible and active learning strategies, inclusive curriculum design and technology- enhanced learning.

- (2) *Scholarly, Research and Creative Activities*, e.g., by promoting critical thinking, creativity, and life-long learning, for example through undergraduate design opportunities in basic and applied research topics.
- (3) *Innovation*, e.g., by nurturing “an environment that instils creativity, critical thinking and useful skills across disciplines.”

The new program has also taken serious considerations for *Equity, Diversity, and Inclusion* (EDI) in curricular design. Inclusion of diverse perspectives, students, and faculty will play key roles in not only design but also implementation of the proposed program. Our design and execution plans for the new program will be aligned with the existing efforts of Faculty of Engineering and Architectural Science (FEAS) to transform the programs for EDI. It is well understood that the proposed Mechatronics Engineering discipline and existing disciplines of Mechanical and Industrial Engineering are among numerous STEM disciplines and professions which continue to face a significant challenge with respect to equity, diversity and inclusion in student population. When FEAS (and other partner universities) were awarded funding from Hydro One in 2012 to attract and retain more women to the profession, we had already engaged in over 20 years of programming that had failed to move the needle. The Hydro One University Partnership came at a time that coincided with a larger cultural shift in public awareness about how identity issues such as race, disability, sexual identity and class—or broadly speaking: issues of privilege, play a more significant role in marginalization than gender alone. FEAS realized we needed to change our perspective. We needed to diversify our understanding of diversity.

Our faculty (FEAS) has taken several steps in the recent years to transform a traditional focus on Women in Engineering (WIE) towards a holistic view of Equity, Diversity and Inclusion (EDI). For example, Dean Thomas Duever has spoken at a number of public events on the topic, reiterating a message he stated in an OpEd published in OSPE’s Voice Magazine in December 2017 and at the ‘Navigating the Glass Obstacle Course’ Conference. The faculty also took a few surveys in 2017 that led to development of a new Office of Equity, Diversity and Inclusion to replace what was formerly called the Women in Engineering Office. The appointed Manager of the FEAS Equity and Community Inclusion Office is a past recipient of Ryerson’s Alan Shepard Equity, Diversity and Inclusion Award.

The new Mechatronics Engineering program will also take advantage of different activities designed to reach audiences representing identity-based groups traditionally marginalized from engineering programs and are offered as part of a larger strategy managed by the FEAS Equity, Diversity and Inclusion Office. This Office is currently working with Ryerson’s Student Pow Wow Committee which is distributing five engineering workshop videos to their stakeholders in the Indigenous community.

Examples of FEAS outreach initiatives include:

- Eureka (<http://www.ryersonsummerdaycamps.com/portfolio-item/eureka/>)

- Engineering Badge Day (<https://www.ryerson.ca/engineering-architectural-science/community-engagement/kids-parents-teachers/girl-guides-ontario-engineering-badge-day/>)
- Engineering Experience (<https://www.ryerson.ca/engineering-architectural-science/community-engagement/kids-parents-teachers/engineering-experience/>)
- Go CODE Girl (<https://www.ryerson.ca/engineering-architectural-science/community-engagement/kids-parents-teachers/go-code-girl/>)
- Go ENG (<https://www.ryerson.ca/engineering-architectural-science/community-engagement/kids-parents-teachers/go-eng/>)
- Pitch Black (<https://www.ryerson.ca/engineering-architectural-science/community-engagement/kids-parents-teachers/pitch-black/>)
- WEMADEIT (<https://www.ryerson.ca/engineering-architectural-science/community-engagement/kids-parents-teachers/we-made-it/>)

The proposed Mechatronics Engineering program will also benefit from the other programs in place for recruitment and admission of students with serious considerations given to EDI. For instance, with respect to undergraduate student recruitment, the Engineering Admissions team has been conducting 70+ virtual school visits/events in addition to the current Schools Ryerson visits posted on FEAS site currently. The team also liaises with the Aboriginal Outreach and Recruitment Officer, Thunder Alphonse in Aboriginal Student Services when it comes to providing application support and admission academic counselling applicants who self-identify as Indigenous. In 2018, the Faculty began the process of intentional culture change by adopting the All-In Approach to Education (AIA), which articulates the Faculty’s vision to develop critical, collaborative and imaginative leaders equipped to engage in ethical, sustainable and democratic practice. In 2020-2021, the All-In Approach is a driving force in the Faculty’s strategic planning, advancement goals, student recruitment and retention, curricular and co-curricular programming, internal culture change and community engagement. The All-In Approach is a philosophy and pedagogical framework rooted in our commitment to developing creative and ethical leaders who are ready to co-create transformational futures. At its core, the AIA is a response to the societal call for a culture shift in engineering and architectural science. This ethos is demonstrated by the faculty’s on-going commitment to improve engineering outreach and recruitment and work toward a more inclusive and diverse culture and community.

Understanding the University priority (outlined in 2020-2025 Academic Plan) for *advancing indigenous initiatives*, the proposed program will highly emphasize growing and retaining indigenous faculty and staff, and recruiting and supporting indigenous students.

Additionally, to foster *access* (as the core value of the University), the new Mechatronics Engineering program is committed to “providing access to educational and employment opportunities for students, faculty, and staff, particularly those from marginalized and equity-seeking groups”. For this purpose, in addition to inclusive curriculum design, the program will

promote open educational practices, active and experiential learning strategies, and innovative/technology- enhanced learning.

As it will be shown in Sections 5.2 and 5.3, the program's courses have been designed to promote EDI principles.

Clarity and Appropriateness of the Program's Requirements and Associated Program Learning Outcomes

The admission requirements are listed in the next section and are the same as existing requirements for other engineering programs at Ryerson University. The requirements are also similar in clarity to those of similar programs in other universities.

The program learning outcomes have clearly been identified in association with the Curriculum Development consultants from the Office of the Vice Provost Academic. The learning outcomes have been listed in Appendix XI along with their Canadian Engineering Accreditation Board (CEAB) and Undergraduate Degree-Level Expectation (UDLE) attributes, and measures for assessing CEAB attributes during the program.

Rationale for Degree Nomenclature

Naming and nomenclature for the program follows the principles of degree nomenclature as follows.

- i) The name of the program (Mechatronics Engineering or MTE) is consistent with national and international norms.
- ii) The degree is named according to the broad discipline to which it belongs, i.e., Bachelor of Engineering (BEng).
- iii) Since the program is an extension of the existing Mechatronics option within Mechanical Engineering, it is familiar to many students in Engineering. Also, because some universities offer a similar program, many program applicants are expected to be familiar with the name of the program.
- iv) The name of the program conforms to related accreditation (CEAB) body guidelines. For example, Mechatronics Engineering program has already been accredited for McMaster University (2009), and University of Waterloo (2008).
- v) The abbreviation (MTE) does not use full stops, commas, or other punctuation marks.

Admission Requirements

Academic Requirements

The same requirements as other engineering programs at Ryerson University will be applied. That will include Ontario Secondary School Diploma (OSSD) or equivalent with a minimum of six Grade 12 U or M courses including the following program specific requirements:

- English/Anglais (ENG4U/EAE4U preferred)
- Advanced Functions (MHF4U)
- Physics (SPH4U)
- Chemistry (SCH4U)

- Calculus and Vectors (MCV4U)

Note: The grades required in the subject prerequisites (normally 70%) will be determined subject to competition. Admission average calculation is provided in

<https://www.ryerson.ca/admissions/undergraduate/requirements/ontario/>

English as a Second Language studies or Tests for English Language Proficiency cannot be used as a substitute for Grade 12 U English/Anglais (or equivalent). Applicants whose first language is not English may be required to submit Proof of Proficiency in English.

The requirements are also very similar in clarity to those of similar programs in other universities. Typically, a minimum overall average of 70% establishes eligibility for admission consideration; subject to competition, the program may require higher pre-requisite grades and/or higher overall averages.

Non-Academic Requirements

None.

Structure

Presentation of the Program

The full-time four-year Mechatronics Engineering program is summarized in the tabular form in Table 3 to Table 4.

(Please see Appendix I for course outlines of the courses with prerequisites and Appendix XI for learning outcomes including CEAB and UDLE attributes).

Table 3 List of the courses proposed for the program.

Notes: (1) The items in *italic* are new courses or existing courses with new MTE codes. The *italic* items in *RED* indicate new MTE courses which will potentially require resources.

YEAR 1 (First Year Common) ¹⁸				
TERM	COURSE	TITLE	Lecture hrs	Lab/ Tutorial hrs
Semester 1 (Fall)	CEN 100	Introduction to Engineering	2	1
	CEN 199 ⁺	Writing Skills (milestone course)	0	1 ⁺
	CHY 102	General Chemistry	3	1
	MTH 140	Calculus 1	4	2
	MTH 141	Linear Algebra	4	1
	PCS 211	Physics: Mechanics	3	1/1
		One Lower Level Liberal Studies Course	3	0
Semester 2	CPS 188	Computer Programming Fundamental	4	2

¹⁸ Identical to Mechanical Engineering Program

(Winter)	ECN 801	Principles of Engineering Economics	3	0
	MTH 240	Calculus 2	4	1
	MEC 222	Engineering Graphical Communications	2	2
	PCS 125	Physics: Waves and Fields	3	1/1
	MTL 200	Material Science Fundamentals	3	1
	Total Hours (12 courses)*			38

+ CEN 199 is not counted in the total hours and course numbers.

YEAR 2				
TERM	COURSE	TITLE	Lecture hrs	Lab/ Tutorial hrs
Semester 3 (Fall)	CMN 432	Communication in the Engineering Professions	2	2
	MEC 323	Statics and Mechanics of Materials	4	1
	MEC 325	Introduction to Engineering Design	3	2
	MTH 425	Differential Equations and Vector Calculus	4	2
	MTE 302	<i>Programming Fundamentals for Mechatronics Engineering (new)</i>	3	1
Semester 4 (Winter)	MEC 311	Dynamics	3	1
	MTE 444*	<i>Introductory Analysis of Electric Circuits (new)</i>	4	2
		One Lower Level Liberal Studies Course	3	0
	MEC 511	Thermodynamics and Fluids	3	1
	MEC 322	Manufacturing Fundamentals	3	2
	MTH 410	Statistics	3	1
	Total Hours (11 courses)			35

* To be offered by Electrical Engineering

YEAR 3				
TERM	COURSE	TITLE	Lecture hrs	Lab/ Tutorial hrs
Semester 5 (Fall)	EES 612*	Electric Machines and Actuators	3	2
	MTH 510	Numerical Analysis	3	1
	MEC 713	Project Management	3	1
	MTE 532*	<i>Signals and Systems for Mechatronics Engineering (new)</i>	4	2
	MTE 500	Microprocessor Systems	3	2

	(MEC 733)			
Semester 6 (Winter)	MEC 709	Control Systems	3	1/1
	MTE 602	<i>Machine Mechanics and Design (new)</i>	3	1
	MTE 751 (MEC 751)	Measurements, Sensors and Instruments	3	1
	MTE 666	<i>Electromechanical Systems Modelling and Design (new)</i>	3	2
	MTE 600	<i>Introduction to Robotics (new)</i>	3	1
	MTE 644	<i>Introduction to Computer Structures and Real-Time Systems (new)</i>	3	2
	Total Hours (11 courses)			34

* To be offered by Electrical Engineering.

YEAR 4				
TERM	COURSE	TITLE	Lecture hrs	Lab/ Tutorial hrs
Semester 7 (Fall)	MTE 70A (former MEC 830)	<i>Mechatronics Capstone Design (new)</i>	1	3
		One Impact of Engineering and Technology on Society Upper Level Liberal Studies Course	3	0
	MTE 701	<i>Real-Time Digital Control Systems Design (new)</i>	3	2
		2 Core Elective courses: refer to Table I for courses	6	2
Semester 8 (Winter)	CEN 800	Law and Ethics in Engineering Practice	3	0
	MTE 70B	<i>Mechatronics Capstone Design (new)</i>	1	3
		One Upper Level Liberal Studies Course	3	0
	MTE 800	<i>Hardware in the Loop and Rapid Control Prototyping (new)</i>	3	2
		2 Core Elective courses: refer to Table II for courses	6	2
	Total Hours (11 courses)			29

Core Elective Courses (Technical Electives): Table I

TERM	COURSE	TITLE	Lecture hrs	Lab/ Tutorial hrs
Semester 7	MTE 705	<i>Fundamentals of Microelectromechanical Systems (new)</i>	3	1
	MEC 617	Manufacturing System Controls	3	1
	MTE 829*/ ELE 829	System Models and Identification	3	1
	MTE 792*/ ELE 792	Digital Signal Processing	3	2
	MTE 711	<i>Sensor Fusion (new)</i>	3	1
Core Elective Courses (Technical Electives): Table II				
Semester 8	MTE 888*/ ELE 888	Intelligent Systems	3	1
	MTE 819*/ ELE 819	Control of Robotic Manipulators	3	1
	MTE 882*/ ELE 882	Introduction to Digital Image Processing	3	1
	MTE 801	<i>Design of Modern Control Systems (new)</i>	3	1
	MTE 803	<i>Autonomous Robots and Vehicles (new)</i>	3	1
	CEN 810	Selected Topics in Engineering	3	1

* This course is offered in Electrical Engineering.

Table 4 Summary of the proposed program.

Number of Courses	45*		
Number of Billing Units	45		
Weekly Contact Hours	Lectures: 136	Labs/Tutorial: 61	

*CEN 199 (Writing Skills, a milestone course is not counted).

Core Courses Needed to be Developed (9): MTE 302, MTE 444, MTE 532, MTE 602, MTE 666, MTE 600, MTE 644, MTE 701, MTE 800 (MTE 70A and 70B as Capstone Projects).

Technical Elective Courses to be Developed (4): MTE 705, MTE 711, MTE 801, MTE 803.

Co-operative Program

After completing the first three years of the regular curriculum, a student in the Mechatronics Engineering Program will enroll in the Mechatronics Engineering Co-operative program after

obtaining a 12 to 16-month Co-op job offer. After completing their co-operative job placement, a student in the Mechatronics Engineering Co-operative program will return to the program to complete their degree requirements. The length of the Mechatronics Engineering Co-operative Program is five years.

The following table shows the sequence of academic and work terms for this program. Students must successfully complete a minimum of three WKT courses before graduation.

Table 5 Sequence of academic and work terms for co-operative program

	Fall	Winter	Spring/Summer
Year 1	1st Semester	2nd Semester	--
Year 2	3rd Semester	4th Semester	--
Year 3	5th Semester	6th Semester	Work Term I – WKTxxa
Year 4	Work Term I or II WKTxxa or WKTxxb	Work Term II or III WKTxxb or WKTxxc	Work Term III or IV WKTxxc or WKTxxd
Year 5	7th Semester	8th Semester	--

WKT courses are graded on a pass/fail basis. Students are expected to follow the sequence prescribed for their program. The FEAS Co-op Office, Department Co-op Faculty Advisor, and Department Office Staff administer the co-operative program and eligibility criteria.

Optional Internship Program:

After completing the first three years of the regular curriculum, students in the Mechatronics Engineering Program with CLEAR Academic Standing may be eligible to enrol in the Optional Internship Program. If they are selected by one of the partner corporations, they spend a period of 8 months as engineering interns at the corresponding corporations. After the completion of the Internship, students return to the academic program to complete their final year of studies. Enrolment in the Internship Program extends the program length to five years. Academic and work term sequence for the regular Mechatronics Engineering program with 8-month internship option is shown in Table 6.

Table 6 Illustration of the academic and work term sequence for optional Internship Program, 8-month placements.

	Fall	Winter	Spring/Summer
Year 1	1st Semester	2nd Semester	--
Year 2	3rd Semester	4th Semester	--
Year 3	5th Semester	6th Semester	Work Term I – WKT88A
Year 4	Work Term I – WKT88A or Work Term II – WKT88B	Work Term II – WKT88B	--
Year 5	7th Semester	8th Semester	--

The FEAS Co-op Office, Department Co-op Faculty Advisor, and Department Office Staff administer the Internship program and eligibility criteria.

Appropriateness of the Program to Meet Learning Objectives

In the recent years, there has been a paradigm shift from focusing on the body of knowledge to what students have learned and are able to demonstrate at the end of their training. Therefore, Ontario universities adopted a learner-centered, outcome-based educational model. The learning outcomes of the proposed program has been summarized in Appendix XI along with the assessment mechanisms. There are 21 learning outcomes considered for the program, matched with the attributes defined by the Canadian Engineering Accreditation Board CEAB and according to UDLEs by Ontario Council of Academic Vice-Presidents (OCAV). For this purpose, CEAB Graduate Attributes and Indicators (version Aug. 18, 2017), prepared by FEAS CEAB Coordinator Group and Senate Policies 2, 110 and 112 were utilized and consulted to ensure compliance with the Ryerson Institutional Quality Assurance Process (IQAP). The goal is to ensure that the new program will offer students learning experiences that are transformational, inspiring, and intellectually challenging, and aligned with the societal needs. As it is observed from Appendix XI, the program is well-balanced and meets the UDLEs and CEAB-based learning outcomes. The proposed program “provides the breadth and depth required to appreciate society’s broader issues and problems,” “combines theory and practice” in relation to the emerging field of Mechatronics to meet societal needs, and promotes “interdisciplinary studies.”

Rational for Deviations

The program is compliant with Ryerson University Senate Policy # 2 in terms of quality and currency, EDI, and in particular dealing with emerging trends. In terms of number of courses (units), it includes 45 courses with total number of weekly hours being 136 (Table 4). As it is observed in Table 7, the number of courses is complaint with the norm (average number of courses offered by similar programs in other universities and the engineering programs at Ryerson University). Also, the hours and the number of courses of the proposed program are compatible with those of other engineering programs at Ryerson University (Table 7). As it can be seen from this table, the proposed program structure is very comparable with other engineering programs.

Table 7 Comparison of the number of courses and hours with other engineering programs at Ryerson University.

Item	Mechatronics Engineering	Mechanical Engineering	Electrical Engineering	Industrial Engineering	Mean/STDEV
Number of Courses	45*	45*	45*	45*	45*/0
Weekly Lecture Hours	136	140	138	134	137/±2.58
Weekly Lab/Tutorial Hours	61	56.5	69	57	60.875/±5.78

* CEN 199 (Writing Skills, a milestone course) is not counted.

As with the rest of Engineering programs (Table 8) at Ryerson, to meet the standards of professional accreditation, the proposed Mechatronics Engineering program seeks a program balance exception to Policy 2 (no open electives), in accordance with Senate Policy 2. The other eight engineering programs' request was approved by Ryerson Senate in November 2021.

Table 8 Program balance.

Discipline	Mechatronics Eng.	Mechanical Eng.	Industrial Eng.	Electrical Eng.
Total number of courses	45*	45*	45*	45*
Core Studies	41 (91.1%)	41 (91.1%)	41 (91.1%)	41 (91.1%)
Liberal Studies	4 (8.9%)	4 (8.9%)	4 (8.9%)	4 (8.9%)

* CEN 199 (Writing Skills, a milestone course) is not counted.

Each engineering program in Canada accredited by the Canadian Engineering Accreditation Board (CEAB) is required to include the following minima for each of its curriculum components:

- Mathematics: Minimum 195 Accreditation Units (AU);
- Natural sciences: Minimum 195 AU;
- Mathematics and natural sciences combined: Minimum 420 AU;
- Engineering science: Minimum 225 AU;
- Engineering design: Minimum 225 AU;
- Engineering science and engineering design combined: Minimum 900 AU;
- Complementary Studies: Minimum 225 AU;
- Laboratory experience and safety procedures instruction.

Each program must have a minimum of 1,850 AU. The accreditation unit is defined as follows: one hour of lecture (corresponding to 50 minutes of activity) = 1 AU, and one hour of laboratory or scheduled tutorial = 0.5 AU. Complementary studies include humanities, social sciences, arts, languages, management, engineering economics and communications.

To meet the standards of professional engineering accreditation by CEAB, the curriculum of each engineering program at Ryerson is organized and categorized in the aforementioned components and each curriculum component exceeds the required minimum AU.

In terms of the complementary studies curriculum component, each engineering program at Ryerson at least contains a course each on engineering economics (ECN 801), communications (CMN 432), and law and ethics in engineering practice (CEN 800), and four Liberal Studies courses (as authorized by Senate Policy 2 in Footnote No. 7).

In terms of the engineering science and engineering design curriculum components, each engineering program at Ryerson has required core studies courses and core elective courses.

In terms of comparator programs at other universities in Canada, as noted earlier, every Canadian engineering program accredited by CEAB is required to meet the curriculum structure constraints and minimum curriculum component contents established by CEAB.

The following table shows the degree to which the Mechatronics Program vary from Senate Policy 2.

Table 9 Variations from Senate Policy 2

	Senate Policy 2: Expected Range (%)	# Courses in Mechanical Engineering Program	% Courses in Program
Core Studies (required + core elective)	60-75	41*	91
Open Electives	10-25	0	0
Liberal Studies	15-20	4	9
Total	100	45	100

Program Content

Addressing Current State of the Discipline

The program has been designed to address the needs of rapidly growing electromechanical systems industry. Mechatronic systems are ubiquitous in industry as well as in consumer products. Market demand for skills in designing, analyzing and maintaining these systems have created new opportunities for engineers with mechatronics expertise.

The proposed program provides students with an opportunity to gain knowledge and understanding of Mechatronics engineering design and analysis principles through a series of core and program-specific courses as well as experiential learning opportunities. Through technical electives, the students can get training in more focused areas such as Robotics and Automation. Additionally, the students have the option of enriching their practical and hands-on experience through co-operative education and internship program embedded into the curriculum. As shown in Appendix XI, the proposed program equips the students with a diverse set of skills to meet not only the current but also the future needs of rapidly growing discipline. Such skills include: modeling, analysis, and designing Mechatronic systems (including problem definition, solution and evaluation); providing feasible solutions complying with technology, environmental, societal and professional standards; communicating effectively within and across the discipline; teamwork and professionalism that incorporates ethical conduct, accountability and equity; and project management.

Analysis of the Program's Curriculum Content

The successful completion of this program requires passing thirty-seven (37) core courses, four (4) technical electives, and four (4) liberal studies courses. The milestone course on English Writing Skills (CEN 199) is not counted. These courses are listed in Table 3. That includes 11 first year common-engineering courses followed by 30 area-related courses and 4 liberal studies courses (Table 3) as follows:

- i) 11 Mathematics, Natural Science, Material Science, and Computer Science courses from Departments of Mathematics (MTH), Physics (PCS), Chemistry and Biology (CHY), Mechanical and Industrial Engineering (MTL), and Computer Science (CS);
- ii) 2 Common Engineering courses plus a Writing Skills milestone course (CEN);
- iii) 1 course from School of Professional Communications (CMN);
- iv) 1 course from Department of Economics (ECN);
- v) 4 Liberal Studies courses;
- vi) 22 Specialized core courses including 1 from Electrical Engineering (EES), 8 from Mechanical Engineering (MEC), and 13 courses (including two Capstone project courses and two courses offered by Electrical Engineering) from Mechatronics Engineering (MTE) programs; and
- vii) 4 core elective courses from Common Engineering, Mechanical Engineering, Electrical Engineering, and Mechatronics Engineering programs. The set of core elective courses may increase over time as new courses are developed, and increasing enrolment numbers and available teaching resources, and other factors.

As explained after Table 4, the curriculum includes development of nine new core courses and four new technical elective courses to provide a skill set that relates to the current and future state of discipline and emerging needs of industry. In addition to existing Electrical Engineering courses (such as EES 612), some fundamental courses from Electrical Engineering such as MTE 444, MTE 532, and MTE 644 have specifically been designed for Mechatronics Engineering students to facilitate integration of fundamental knowledge from Electrical and Computer Engineering discipline, providing interdisciplinary skills and add depth to the students' knowledge base. These courses have also been designed to circumvent the obstacle of prerequisites existing in similar courses of Electrical Engineering discipline. Advanced courses such as MTE 701 and MTE 800 have been designed in close consultation with industry to meet the emerging needs of the related industry.

The Capstone Design project (MTE 70A/70B) has been designed to promote close collaboration with the industry (to address their existing technical problems) and provides the opportunity for the students to engage with industry professionals and build a network of future employers. As with other existing Capstone Design Courses in engineering programs, the subject librarian will be invited to deliver a session in support of the Capstone Design course. The Co-op and Internship place students in real-world industrial and business environments such that they can closely relate their knowledge to the real industrial problems, and learn the inner workings and dynamics of an enterprise.

The curriculum also includes a good number of core electives, giving students the opportunity to choose courses from Mechanical Engineering, Mechatronics Engineering, and Electrical Engineering. These courses enable the students to define more focus on their training (e.g., in Robotics) or bring an element of holism to their education by taking variety of courses from different areas.

Another element of the proposed curriculum has been the incorporation of equity, diversity, and inclusion (EDI) considerations. Understanding and practicing EDI is a critical skillset for Mechatronics Engineering graduates to gain in order to meet the demands of increasingly multicultural environment¹⁹. For this purpose, an emphasis is placed in teamwork-related EDI training early in the program until final capstone courses. The value of such approach has been demonstrated in the recent studies related to engineering education²⁰. Through such practice, the students learn about EDI concepts and also experience situations where these concepts come into life and should be dealt with in team contexts. It is, therefore, strongly suggested to the course instructors to incorporate EDI learning as part of the course teamwork training. Being a multidisciplinary engineering discipline, Mechatronics Engineering will definitely benefit from diversity of perspectives particularly related to Mechanical Engineering and Electrical Engineering ones. Apart from that, some courses have been designed to incorporate diversity of perspectives. For instance, Introduction to Engineering Design (MEC 325) has been designed to incorporate human factors and ergonomics into engineering design practice. Also, the variety of perspectives will further be promoted through involvement of teammates who will differ by gender, nationality, ethnicity, cultural background, age, etc. for the major team project of the course. As another example, Project Management (MEC 713) trains the students to consider a diverse set of perspectives including human, mathematical, engineering and managerial issues surrounding project management to equip them with tools to effectively manage engineering projects. Furthermore, the new Mechatronics Engineering courses involving group projects, have been designed to include discussions and training pertaining to EDI considerations and have team compositions which will ideally differ by gender, nationality, ethnicity, cultural background, etc. These courses include:

- MTE 302- Programming Fundamentals for Mechatronics Engineering
- MTE 600- Introduction to Robotics
- MTE 644- Introduction to Computer Structures and Real-Time Systems
- MTE 666- Electromechanical Systems Modeling and Design
- MTE 701- Real-Time Digital Control Systems Design
- MTE 711- Sensor Fusion
- MTE 800- Hardware in the Loop and Rapid Control Prototyping
- MTE 801- Design of Modern Control Systems
- MTE 803- Autonomous Robots and Vehicles

Similarly, in Capstone Design project (MTE 70A/70B), the diversity of disciplines and perspectives will be practiced through the multidisciplinary nature of the program (involving electrical and

¹⁹ Delaine, D.A., Williams, D.N., Sigamoney, R., and Tull, R.G. (2016). Global diversity and inclusion in engineering education: Developing platforms toward global alignment. *International Journal of Engineering Pedagogy*, 6(1), 56-71. <http://dx.doi.org/10.3991/ijep.v6i1.5372>

²⁰ Chromik, R. R. et al., (2020). Teamwork training as a means of mastering more equitable, diverse, and inclusive practice in engineering curricula, in *Proc. 2020 Canadian Engineering Education Association Conf.*,

mechanical engineering disciplines), considerations given to subjects such as ergonomics, and composition of teams who will differ by gender, nationality, ethnicity, cultural background, etc.

As explained in section 4.2 and Appendix XI, the program has been designed to meet all 21 learning outcomes of the program, matched with the attributes defined by CEAB and according to UDLEs by OCAV. The new program has been designed to ensure that it will offer students learning experiences that are transformational, inspiring, and intellectually challenging, and aligned with the societal needs. As it is observed from Appendix XI, the proposed program develops core competencies to enable students to: apply fundamental and interdisciplinary specialized knowledge to model, analyze and design for mechatronics problems (O1-O6), meeting societal and professional standards and expectations related to environmental impacts (O7); investigate complex mechatronics engineering problems and validate the conclusions through both simulations and experiments (O10-O11); use related computer software and program them effectively (O14-O15); plan and apply project management techniques and tools (O20-O21); develop creative and critical thinking, and engage in life-long learning and self-leadership strategies responding to emerging technologies in a rapidly changing world (O16, O19); communicate effectively across multiple disciplines (O8-O9, O12); work effectively and professionally within multidisciplinary teams incorporating public interest and requirements of the profession (O17-O18); and yet realize the limits of their knowledge in the management of projects (O13). The courses move from *introductory* to *reinforcement* to *advanced* levels and are balanced to prepare students for careers in the emerging mechatronics-related industries and/or to move on to graduate studies. This curricular design follows the “three levels of inclusion” cited in “The Ontario Universities Council Quality Assurance Framework”²¹. Also, as it is noted from Appendix XI, sufficient number of mechanisms have been provided to assess the fulfillment of the learning objectives. In short, the proposed program is well-balanced and meets the UDLEs and CEAB-based learning outcomes.

In summary, the proposed curriculum has been carefully designed to meet the (CEAB) accreditation requirements and address the needs of the related industry and its future employees, entrepreneurs, and practitioners. The core curriculum provides the specific skill set and knowledge base that modern mechatronics engineering professionals must have, while the technical electives bring added depth in areas of specialization, and serve to round out students’ education.

²¹ <http://oucqa.ca/wp-content/uploads/2018/10/Quality-Assurance-Framework-and-Guide-Updated-Guide-Oct-2018-Compressed-Version.pdf>

Creative Components of the Curriculum

The proposed program is distinct and timely because it not only meets the growing demand for Mechatronics Engineering but also focuses on aspects not fully covered by many Canadian universities. The program is well aligned with the leading role of our university in blending traditional education with experiential learning opportunities into industry-relevant program offerings. The program has also a distinct emphasis on equity, diversity, and inclusion training.

Laboratory and Hands-on Experience- As it was mentioned earlier, when compared with Mechatronics Engineering programs in other universities, our proposed program distinctively emphasizes laboratory, hands-on, and design experience. Our proposed program stands high in terms of experiential learning indicated by the number of laboratory/tutorial hours (61) compared to the other ones.

Co-operative and Internship Program- Co-op or Internship program option will be available to students entering Mechatronics Engineering program. Preparing students for careers and the workplace following an undergraduate degree has been an important tradition of undergraduate education at Ryerson University. Co-op placements and Internships engage industry in the education of our students and allows our university to develop meaningful relationships with partners. At this time, approximately one third of the students enrolled in the Mechatronics option participate in Co-op or Internship placements.

Equity, Diversity, and Inclusion (EDI) Training- The proposed curriculum has been designed to emphasize EDI training. Particular considerations are given to subjects such as ergonomics, inclusive design, and composition of teams in course and capstone projects. The involved team members will differ by gender, nationality, ethnicity, cultural background, etc.

Social and Industrial Relevance- Interdisciplinary skills related to Mechatronics are necessary to meet the requirements of the constantly evolving industries such as automobile, aerospace, defense, and energy. Many opportunities and success paths today are not solely dependent on traditional engineering skills. A broader skill set encompassing mechanical and electrical-computer engineering disciplines is required. The proposed curriculum has been designed to prepare students with these mindset and competencies for success. Our specialized courses and laboratories have been carefully designed in close consultation with the industry. The exposure to a breadth of courses will help create well-rounded interdisciplinary engineers, and future managers, entrepreneurs and researchers. The study of higher-level courses such as robotics, autonomous vehicles, digital control systems, intelligent systems, and hardware-in-the-loop will put our graduates in a leading position to meet the emerging needs of industry and will resonate with young talented students eager to find modern engineering education within a degree-granting university. The two-semester Capstone Project course has also been designed to promote close collaboration with industry, placing the focus on solving real-industrial problems.

After completion of undergraduate education in mechatronics, program graduates can get positions such as a systems engineer, application engineer, product development engineer,

quality and safety engineer, research and development engineers, project supervisors and managers in the industries and research institutes and pursue graduate studies in mechatronics and related fields. The program will be **the first full-fledged Mechatronics Engineering program in GTA.**

Mode of Delivery

Curriculum delivery is appropriately balanced with lecture and lab-based courses, and experiential settings. As indicated in Table 7, the program will be delivered through 136 weekly lecture hours, 61 weekly laboratory hours and 3 weekly tutorial hours, designed for four years. The program will also include 12 to 16 months Co-operative education and 8-month Internship programs.

Delivery of the core curriculum flows smoothly from lecture-based courses with lab-based components in the early and middle stages to experiential, project-based courses in the later stages. This allows students to learn the basics of Mechatronics Engineering, and mechatronic systems modeling, design and analysis, and reinforce and complement this learning in upper-level labs, design studios and project-based courses as they approach completion of the program. In particular, two-term Mechatronics Capstone Design course (MTE 70A & 70B) has been incorporated into the curriculum to reinforce experiential learning through mainly laboratory and design studio. The outcome of Capstone Design course is expected to enable integration of the gained interdisciplinary mechatronics knowledge and appropriate tools to model, analyze and design mechatronics systems (including problem definition, solution, and evaluation). Further experiential learning is facilitated through co-op or internship opportunity. The co-op or internship opportunity, monitored by an academic coordinator and FEAS Co-op Office, gives students real-life work experiences and opportunities to network with industry professionals. Students can also choose from a wide range of Core Electives (ten courses) that fall within a chosen field of study, and are also delivered in lecture, lab, and project-based environments.

As shown in Appendix XI, the program adopts modes of delivery that is appropriately balanced with content-based, skill-based and experiential components to meet intended program Learning Outcomes and Degree Level Expectations.

Assessment of Teaching and Learning

Appendix XI summarizes the target program learning outcomes, related CEAB (Canadian Engineering Accreditation Board) graduate attributes and indicators for each outcome, related UDLEs (Undergraduate Degree Level Expectations), the list of the courses reinforcing the target outcome, and methods of assessment to measure each CEAB graduate attribute.

Students will be assessed through the use of assignments, labs and examinations for both the depth and breadth of their knowledge. Engineering methodologies will be demonstrated and practiced through the use of hands-on labs. Applications of engineering knowledge will be reinforced through the application of open-ended project based learning. Communication skills will be assessed through a variety of lab and project reports, class presentations and the capstone

project. Open ended problems, simulations, modelling and projects will help students realize their limits of their and science's knowledge. Courses, such as CEN800 Engineering Law and Ethics and the Mechatronics Capstone (MTE 70A and MTE 70B) will demonstrate their professional responsibilities and their capacity within our society.

Many of the planned courses are currently being taught in the Mechanical and Electrical programs. New courses will assess students in a similar manner. Student outcomes will be assessed in accordance with Ryerson's Undergraduate Degree-Level Expectations (UDLEs) and with Canadian Engineering Accreditation Board (CEAB) requirements. Current use of Graduate Attributes, as used by the CEAB will be used to document, assess and demonstrate student achievement. Working with University Advancement, student success will be followed up 1 and 5 years post-graduation.

The level of performance of students, consistent with Ryerson's Undergraduate Degree Level Expectations, will be documented and demonstrated by tracking the grade spread of graduating cohorts and comparing that to the data across the Faculty of Engineering and Architectural Science and the university. The alumni body will be surveyed for their experience and insights. The retention rates across the program will be tracked and compared to the data across the faculty and the university. Finally, the program learning outcomes will be measured using the Canadian Engineering Accreditation Board (CEAB) criteria.

A number of engineering programs at Ryerson, including Mechanical, Electrical, Computer, and Industrial Engineering programs, have the following approved grading variation for most of their courses.

In order for a student to pass a course included in the departmental lists, in addition to earning 50% or more of the overall course mark, the student must pass:

- the weighted combination of the quiz, midterm and final exam marks by earning 50% or more, AND
- the laboratory component by earning 50% or more, if there is a laboratory component.

In the respective course outline, the quiz, midterm test, final exam, and laboratory components should be clearly designated and the weight for each component should be given.

The Mechatronics Engineering program proposes to have the same grading variation applied to the following Mechatronics courses:

MTE 302, MTE 444, MTE 500, MTE 532, MTE 600, MTE 602, MTE 644, MTE 666, MTE 751, MTE 701, MTE 705, MTE 711, MTE 792, MTE 800, MTE 801, MTE 803, MTE 819, MTE 829, MTE 882, MTE 888

The rationale for the grading variation is as follows. The majority of courses offered by the engineering departments have three major groups of assessment:

- Group A - assessments of explicit knowledge (e.g., quizzes, midterm tests, and final exam),
- Group B - assessments of hands-on practical knowledge (e.g., laboratory work and reports), and
- Group C - other assessments (e.g., assignments, presentations, and project reports).

The licensure requirements for an applicant to practice professional engineering in Canada normally include: meeting the stipulated academic requirements, fulfilling the engineering work experience requirements, and successfully completing the Professional Practice Examination. Holding an undergraduate engineering degree from a Canadian Engineering Accreditation Board (CEAB)-accredited program will meet the stipulated academic requirements for licensure. Each of Ryerson's existing eight engineering programs (Aerospace, Biomedical, Chemical, Civil, Computer, Electrical, Industrial, and Mechanical Engineering) is accredited by the CEAB and the proposed Mechatronics Engineering program will seek accreditation by the CEAB. Therefore, to ensure that each graduate meets the academic requirements, it is necessary to require a student to pass the assessments in explicit knowledge (Group A) and hands-on practical knowledge (Group B) separately. A student has to demonstrate minimal competency on both. The primary purposes of other assessments (Group C) are to advance learning.

Like the other engineering programs at Ryerson, the Mechatronics Engineering program proposes the following academic standing variation. In addition to the general criteria used to determine Academic Standing, students in this program must also meet the following conditions:

All students in undergraduate Engineering programs have an additional condition for Clear academic standing. In addition to students needing a cumulative grade point average (CGPA) of 1.67 or higher, students also need to have a term grade point average (TGPA) of 1.33 or higher, based on at least two reported grades for that term (not including Pass, DEF, INP or AEG grades). Students who have a TGPA less than 1.33 will be given PROBATIONARY Academic Standing. Students with only one reported grade for that term will be evaluated based on CGPA only.

Students with a cumulative grade point average (CGPA) less than 1.67 will be assigned a Probationary or Required to Withdraw (RTW) standing. See Academic Standings in Ryerson University Undergraduate Calendar for information about the process and consequences.

Resources

Although the program is a collaborative and multi-disciplinary program between Mechanical Engineering and Electrical and Computer Engineering programs, the program will be hosted in the Department of Mechanical and Industrial Engineering (MIE). The program is a significant extension of the Mechatronics Engineering Option currently offered in the Mechanical Engineering program. Upon approval of the proposed BEng program, the current Mechatronics Engineering Option within the Mechanical Engineering program will be discontinued for the entering students. The existing students enrolled in the option will be allowed to complete their program with the option.

Assume that the Mechanical Engineering program maintains the current intake and the first-year intake for the Mechatronics Program is 100 students per year. The proposed commencement date for the program is Fall 2023.

Human Resources

Many of the courses in the curriculum exist in the Mechanical and Industrial Engineering and Electrical and Computer Engineering programs. To accommodate the influx of the new students, increased teaching, technical support, and administrative levels will have to be addressed.

To provide evidence of the intended participation of a number of quality faculty who are competent to teach/supervise in the program, the list of faculty members who are currently teaching in the mechatronics option are shown in Table 10.

Table 10 FEAS faculty members with related expertise

Name	Program	Areas of Expertise	Teaching MTE-related courses	
			Past & Current (existing option-specific courses in bold)	Potential
Chan, Vincent	Mechanical Engineering	Machine Vision, Rapid Prototyping	MEC 222, MEC 322, MEC 325, MEC 617, MEC 733 (MTE 500), MEC 830 (MTE 70A), MEC 825 (MTE 70B), ME 8107 (some overlap with MTE 888)	MEC 222, MTE 302, MEC 322, MEC 325, MEC 617, MTE 602, MTE 500, MTE 70A, MTE 70B, MTE 751
He, Siyuan	Mechanical Engineering	Microelectro-mechanical systems, Micro-Actuators, Sensors	MEC 733 (MTE 500), ME 8146 (overlap with MTE 705)	MTE 500 (MEC 733), MTE 751 (formerly MEC 751), MTE 666, MTE 70A, MTE 70B, MTE 800, MTE 705
Janabi-Sharifi, Farrokh	Mechanical Engineering	Robotics and Automation,	MEC 322, MEC 830(MTE 70A), MEC 709, ME	MTE 532, MTE 600, MTE 602, MTE 751, MTE

		Control Systems, Optomechatronics	8130, ME 8130 (good overlap with MTE 600)	70A, MTE 70B, MTE 666, MTE 701, MTE 711, MTE 800, MTE829, MTE 888, MTE 819, MTE 801
Ghasempoor, Ahmad	Mechanical Engineering	Advanced Manufacturing	MEC 322, MEC 751(MTE 751), MEC 825(MTE 70B)	MTE 602, MTE 751(formerly MEC 751), MTE 70B
Saeedi, Sajad	Mechanical Engineering	Robotics and Automation, Computer Vision, Robot/Machine Learning	MEC 830 (MTE 70A), MEC 721, MEC 311, MEC 713	MTE 302, MTE 444, MTE 532, MTE 500 (formerly MEC733), MEC 709, MTE 751 (formerly MEC 751), MTE 600, MTE 644, MTE 70A, MTE 70B, MTE 701, MTE 800, MTE 829, MTE 792, MTE 888, MTE 819, MTE 882, MTE 803
Zareinia, Kourosh	Mechanical Engineering	Robotics and Automation, Haptic interfaces, Control Systems	MEC 323/BME 323, MEC 411 (some overlap with MTE 602), ME 8130 (good overlap with MTE 600)	MTE 302, MTE 444, MTE 532, MTE 500 (formerly MEC733), MEC 709, MTE 751 (formerly MEC 751), MTE 600, MTE 602, MTE 70A, MTE 70B, MTE 701, MTE 800, MTE 829, MTE 792, MTE 819

Li, Jamy	Industrial Engineering	Robotics and Automation, Human-Robot Interaction	Human-Robot Interaction (University of Twente)	MEC 713
Beheshti, Soosan	Electrical Engineering	System theory and modeling, Control Engineering	BME 532/ELE 532 (good overlap with MTE 532)	MTE 532*, MTE 792/ELE 792*, MTE 829/ELE 829*
Chen, John Yao-Chon	Electrical Engineering	Robot Control, Optimal Control	ELE 719, ELE 809, ELE 819	MTE 819/ELE 819*
Xiao-Ping Zhang	Electrical Engineering	Human-Computer Interaction, Image Processing, Machine Learning Signa/Multimedia Processing and IoT	ELE 882 (MTE 882), ELE 888 (MTE 888),	MTE 882/ELE 882*, MTE 888/ELE 888*
Yuan, Fei	Electrical Engineering	Microsystems, Bio-Sensors and Actuators, Wireless Communication Systems	ELE 700 (some overlap with MTE 70A)	MTE 444*, EES 612*

*Taught by Electrical Engineering

The required teaching resources in different programs are as follows:

Mechanical Engineering (9 courses): MEC 222, MTL 200, MEC 323, MEC 325, MEC 311, MEC 511, MEC 322, MEC 713, MEC 709

Mechatronics Engineering (11 required courses): MTE 302, MTE 500 (now MEC 733), MTE 602, MTE 751 (now MEC 751), MTE 666, MTE 600, MTE 644, MTE 70A, MTE70B, MTE 701, MTE 800

Electrical Engineering (3 required courses): MTE 444, EES 612, MTE 532

Mechatronics Engineering (10 core elective courses): MTE 705, MTE 801, MTE 711, MTE 803, MEC 617, MTE 829/ELE 829, MTE 792/ELE 892, MTE 888/ELE 888, MTE 819/ELE 819, MTE 882/ELE 882

The proposed curriculum requires students to take two core electives in each of the 7th and 8th semesters, respectively. Therefore, initially, elective offerings can be planned as follows: four Mechatronics specific courses will be new offerings and six double-listed courses (one with

Mechanical and five with Electrical) will be offered with the existing courses. It is assumed that the six double-listed courses will not require new instructor resources.

New Teaching Hires: In summary, Mechanical and Mechatronics Engineering (MME) will require teaching resources for 24 new courses/sections, equivalent to eight (8) RFA faculty positions. Electrical Engineering (Department of Electrical, Computer and Biomedical Engineering-ECBE) will require three new courses/sections, equivalent to one (1) RFA faculty position. Sessional and part-time instructors will fulfill additional teaching requirements, while maintaining the appropriate RFA to CUPE teaching allocation ratio.

New Technical Support Hires: Mechanical and Mechatronics Engineering will require two additional technical support staff members.

New Administrative Support Hires: The Mechatronics Engineering program will also require one additional administrative support staff member.

In addition to delivering the core curriculum, Science, Liberal Studies, Economics, Professional Communication, and FEAS Dean’s Office will require incremental teaching resources.

Plan for hiring RFA faculty and staff members: Upon approval on the new Mechatronics Program, the involved departments start to hire the above-mentioned personnel. The Mechanical and Mechatronics Engineering will require (8) new RFA faculty positions. A proposed plan for hiring is given in Table 11.

Table 11 Plan of hiring

Year	RFA	Technical officer/Staff
2022/23	1 MME	1 Staff
2023/24	2 MME and 1 ECBE	1 Technical officer
2024/25	3 MME	1 Technical officer
2025/26	2 MME	

Physical and Library Resources

Space

Office Space: Additional office space will be required for the new RFA faculty. For nine RFA faculty positions, office space requires 9 × 110 sq. ft. = 990 sq. ft. and research space requires 9 × 500 sq. ft. = 4,500 sq. ft.

Office space for service to Mechatronics Engineering undergraduate students and for the administrative support staff member’s working space is required (200 sq. ft).

Lab Space: In addition to the current available undergraduate lab space, an addition undergraduate lab with a size of 2,000 sq. ft. is required.

Working Space: Working space is required for two technical support staff members (220 sq ft).

Classrooms: All the classrooms will be scheduled by the university (based on our discussions with University Planning Office). A typical mechatronics-only course would have a lecture class size of between 80 and 90 students and a lab/tutorial size of 25 students. Courses that are common with mechanical engineering students would have a lecture class size of between 100 and 120 students and a lab/ tutorial size of 25 students. The class sizes of the Year 1 courses typical varying from 200 to 400 students. Note that Year 1 has many courses common across the engineering programs.

Library

The University Library's response to the proposed BEng program in Mechatronics Engineering is included as Appendix X. It concludes that the University Library is adequately equipped to support the proposed BEng Program in Mechatronics Engineering program and additional resources will be required to create a more robust collection to fully address the needs of students and the quality of the program.

Equipment

Some of the new program courses can rely on existing laboratory and teaching facilities.

The students will have access to all necessary hardware labs and computer labs. They will have access to specialized commercial software packages for mechatronics and mechanical engineering.

For the purchase of the equipment, it is estimated that an investment of \$750 K will suffice. Some negotiations have been undertaken with the mechatronics lab equipment suppliers for significant educational discounts.

Samples of existing facilities to support our courses are given in Table 12.

For computing support, the students will have access to several lab spaces on campus, and some software remotely via VAPP. There are three undergrad computer labs for Mechanical and Industrial Engineering (MIE) department that can be used to support Mechatronics Engineering students in the department. Those are located in KHE137, KHE137a and KHE139. MIE computing administration is supported by 9 servers, two supporting PCs, UPS and several switches. Similar to all MIE undergraduate students, Mechatronics Engineering students will have 24/7 access to KHE137 and KHE139; Capstone students will have 24/7 access to KHE137a. Virtual application for remote access is possible through VAPP.

In addition to these three departmental computer labs, similar to MIE students, Mechatronics Engineering students will also have access to Ryerson wide computer labs supported by CCS. They include five general-purpose teaching and drop-in computer labs (KHW71A, KHW71C, KHW377,

KHW379 and LIB393); three general-purpose drop-in only labs (KHW71, KHW71F and LIB386L); and one specialized lab (KHW71B).

Table 12. Existing laboratories to support MTE program

Supporting Course(s)	Room Number	Student Capacity	Equipment
EES 612*: <i>Electrical Machines and Actuators</i>	ENG 309	18 (9 stations with 2 student/station)	AC/DC Power Supply-Lab Volt EMS8821 Transformer Module-Lab Volt EMS8341 DC Motor-Lab Volt EMS8211 Dynamometer-Lab Volt EMS8911 3 Phase AC Motor-Lab Volt EMS8231 L298 H-Bridge Driver Module Bench-top power supply Function Generator
MTE 532*: <i>Signals and Systems for Mechatronics Engineering</i>	ENG 409	22 (23 benches with 1 students/bench and one spare bench)	PCs with signals and systems software. Texas Instruments 6713 DSP Spectrum digital boards. Matlab. Systems are configured with sound cards to generate audio sequences and for sampling. The TI 6713 is leveraged for basic sampling tools.
ELE 829*: <i>System Models and Identification</i>	ENG 413	22 (12 benches with 2 students/bench and one spare bench)	PCs with Matlab software
ELE 792*: <i>Digital Signal Processing</i>	ENG 409	22 (12 benches with 2 students/bench and one spare bench)	Texas Instruments 6713 DSP Spectrum digital boards. Students use Matlab with Code Composer Studio running in a VM environment to design FIR/IIR filters and deploy them on the TI DSP boards.

ELE 888*: <i>Intelligent Systems</i>	ENG 409	22 (12 benches with 2 students/bench and one spare bench)	PCs with Matlab and Xerion Back propagation neural network software.
ELE 819*: <i>Control of Robotic Manipulators</i>	ENG 413	22 (12 benches with 2 students/bench and one spare bench)	PCs. Servo setups that are attached to Linux based systems to provide simple motor control. Haptic manipulators installed which are controlled through a Virtual machine environment with the Quanser software tools. 2 wheel and 3 wheel robots that are configured with Lidar, sonar and room mapping tools.
MTE courses with computing labs/tutorials/components	KHE 137 (MIE Computer Lab)	40	32 PCs with software, remote access is possible, overhead projector and a printer
MTE courses with computing labs/tutorials/components	KHE 137a (MIE Computer Lab)	40	12 PCs with software, , remote access is possible, overhead projector and a printer
MTE courses with computing labs/tutorials/components	KHE 139 (MIE Computer Lab)	40	32 PCs with software, , remote access is possible, overhead projector and a printer
MTE courses with computing labs/tutorials/components	KHW 337 (CCS Labs)	45	45 PCs with software, remote access may be possible
MTE courses with computing labs/tutorials/components	KHW 379 (CCS Labs)	45	45 PCs with software, remote access may be possible
MTE courses with computing labs/tutorials/components	LIB 393 (CCS Labs)	61	61 PCs with software, remote access may be possible
MTE courses with computing labs/tutorials/components	KHW 71A (CCS Labs)	31	31 PCs with software, remote access may be possible
MTE courses with computing labs/tutorials/components	KHW 71B (CCS Labs)	32	32 PCs with software, remote access may be possible
MTE courses with computing labs/tutorials/components	KHW 71C (CCS Labs)	30	30 PCs with software, remote access may be possible

MTE courses with computing labs/tutorials/components	LIB 386L (CCS Labs)	41	41 PCs with software, remote access may be possible
MTE courses with computing labs/tutorials/components	KHW 71F (CCS Labs)	20	20 PCs with software, remote access may be possible
MTE courses with computing labs/tutorials/components	KHW 71 (CCS Labs)	72	72 PCs with software, remote access may be possible
MEC 511	KHE 31	24 (2 stations used from MEC516 for this course)	Hydrometer Micrometer Thermometer Graduated cylinder Venturi flow meter Manometer
MEC 511	KHE 27	24 (2 stations used from MEC309 for this course)	WL204 Steam pressure lab apparatus Steam quality measurement lab apparatus
MEC 322	EPH 343	25(5 stations in room)	Precision measuring instruments Starrett HE400 optical comparator Starrett KineMic KMR-XGA video microscope Sharpe Micro-Hite CMM
MEC 322	KHE 25	25	HB500 toolroom lathe and PC
MEC 733 (MTE 500) MEC 709 MEC 751 (MTE 751) MEC 617 MEC 830 (MTE 70A) MEC 813	EPH 309	24 (12 stations 2 persons per)	Mechbots 12 PCs & workstations Robot maze 12 Lego robot kits with EVshield 12 PID Trainers & cables Pressure vessel boards & cables Thermocouple boards & cables Strain gauge boards & cables 12 PLC trainer boards 12 PLC controller boards 12 DoBot robot arms
Currently not assigned	EPH 309	24 (12 stations 2 persons per)	12 Rigol oscilloscopes 12 fluke multimeters 23 Duckiebots 15 Intel neural stick

			15 Intel lidar cameras 15 Intel depth cameras 13 YDLidar sensors
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*Offered by Electrical Engineering

Quality and Other Indicators

There is sufficient data to support teaching and research capabilities of the participating faculty members in this proposal, as evidenced by their CV included in Appendix V. The data covers areas such as research, teaching, and industry experience and expertise. All faculty members involved have demonstrated strong records in scholarly research activities, evidenced by the grants they have acquired, papers they have published, and HQP they have trained. In summary, the members compose a strong team in mechatronics research and teaching as well as entrepreneurship and developing connections with industry. The proposal suggests that the unique combination of academic and industrial expertise in areas such as robotics, advanced manufacturing, sensors, actuators, machine vision, haptics, MEMS, etc. is well-suited to support and develop the proposed program in Mechatronics Engineering at Ryerson University. Further information about the qualifications is provided below.

Qualifications

All participating faculty members hold PhD degrees in the core areas related to their expertise. They also hold PEng license from PEO (Professional Engineers Ontario) required by CEAB (Canadian Engineering Accreditation Board). Exceptions are new faculty hired in the last years who plan to apply for licensure (indicated by # in the following list). The research areas of the member, which covers all key topics of the proposed mechatronics program are listed below. These areas cover the core areas of mechatronics, i.e., mechanical engineering, electrical engineering, and computer science

Chan, Vincent: Machine Vision, Rapid Prototyping

He, Siyuan: Microelectro-mechanical systems, Micro-Actuators, Sensors

Janabi-Sharifi, Farrokh: Robotics and Automation, Control Systems, Optomechatronics

Ghasempour, Ahmad: Advanced Manufacturing

Saeedi, Sajad#: Robotics and Automation, Computer Vision, Robot/Machine Learning

Zareinia, Kourosh: Robotics and Automation, Haptic interfaces, Control Systems

Li, Jamy#: Robotics and Automation, Human-Robot Interaction

Beheshti, Soosan: System Theory and Modelling, Control Engineering

Chen, John Yao-Chon: Robot Control, Optimal Control

Zhang, Xiao-Ping: Signal and Multimedia Processing

Yuan, Fei: Microsystems, Bio-Sensors and Actuators, Wireless Communication Systems

Research, Innovation, and Scholarly Records

The attached CVs of participating faculty members are good indication of solid contributions of the members to various fields of the proposed mechatronics program. Significant number of refereed publications, conference presentations, and books all attest to the quality of the

involved faculty members. As examples, the Google citation profile (September 24, 2021) of five of the members are listed below, indicating the core competency of the members:

1. **He, Siyuan:** All citations: 1245, h-index: 18, i10-index: 26
2. **Janabi-Sharifi, Farrokh:** All citations: 5412, h-index: 34, i10-index: 87
3. **Saeedi, Sajad:** All citations: 2071, h-index: 20, i10-index: 23
4. **Zareinia, Kouros:** All citations: 857, h-index: 17, i10-index: 24
5. **Li, Jamy:** All citations: 1344, h-index: 17, i10-index: 19
6. **Zhang, Xiao-Ping:** All citations: 5603, h-index: 34, i10-index: 99

Students' Training Record

All participating faculty members have strong highly qualified personnel (HQP) training records, both at undergraduate and graduate levels. The list below summarizes samples of the HQP training records:

1. **Chan, Vincent:** more than 209 students including 9 graduate students and more than 200 undergraduate research assistants and capstone project students.
2. **He, Siyuan:** more than 120 HQP including 25 graduate students and more than 80 undergraduate research assistants and capstone project students.
3. **Janabi-Sharifi, Farrokh:** more than 220 HQP which a large percentage of the personnel belong to racial minorities which shows his dedication to the core principles of equity, diversity, and inclusion (EDI).
4. **Ghasempour, Ahmad:** more than 70 HQP including master's and PhD students and undergraduate Capstone project students.
5. **Saeedi, Sajad:** more than 35 HQP during the past five years at various levels including undergraduate students, master's, PhD, and post-doctoral levels.
6. **Zareinia, Kouros:** more than 48 HQP at various levels from undergraduate capstone projects students to master's and PhD students and postdoctoral fellows.
7. **Li, Jamy:** 25 HQP in all levels from undergraduate RAs to PhD students at Ryerson University and the University of Twente (The Netherlands).
8. **Beheshti, Soosan:** 30 HQP at various levels from undergraduate capstone projects students to master's and PhD students and postdoctoral fellows
9. **Zhang, Xiao-Ping:** more than 40 HQP including master's and PhD students and undergraduate Capstone project students.
10. **Yuan, Fei:** more than 140 HQP including undergraduate RAs, Capstone Project students, and master's and PhD students.

Recommendation

Having satisfied itself of the merit of this proposal, the Academic Standards Committee recommends: ***that Senate approve this New Program Proposal for Mechatronics Engineering (BEng) – Faculty of Engineering and Architectural Science.***

B. ARTS - Co-op - Expansion to Include Department of Philosophy

Executive Summary

This document provides an outline of an optional co-operative education program being proposed for the Philosophy BA Honours degree. This proposal is an addendum to the [Faculty of Arts Co-op Proposal \(2020\)](#), approved by Ryerson Senate in Fall 2020. Included in this document is information specific to co-op for the Department of Philosophy.

Philosophy is one of several programs that Arts and the Career & Co-op Centre have identified as best positioned to continue the rollout of co-operative education across the Faculty. The addition of a co-op option was the number one recommendation to come out of the recent BA Philosophy program review (PPR).

As has been demonstrated in many disciplines, having a co-op option will support the Department's objectives related to increasing student recruitment and supporting students' employability upon graduation. Philosophy will also benefit from the existing infrastructure of the Arts Co-op Programs, and both the Faculty and Career & Co-op's experience in running the programs since their official launch in September 2021.

Faculty of Arts Co-op Program

All of the information, policies and processes outlined for the Arts Co-op Program in the [original program proposal](#) will be applicable to co-op in the Department of Philosophy.

Important sections of the proposal which outline the co-op program structure include:

- **II. Co-operative Education at Ryerson** - including the noted benefits for students, employers & academic programs.
- **III. Roles and Resources** - including the division of labour between the Faculty of Arts and Career & Co-op Centre in running the co-op program, as well as resource needs and commitments, and co-op fees.
- **IV. General Co-op Program Information** - including explanations of co-op admissions, work term requirements and scheduling, types of work opportunities, rules on student compensation, co-op degree length, exiting the co-op program and risk management.
- **VI. Documentation and Evaluation** - including work term reports and site visits, employer evaluations, deadlines and penalties, and academic integrity and discipline.

Additional information most relevant to the addition of Philosophy to Arts' roster of co-op programs includes:

- [Appendix C: Competitive Analysis](#) - an analysis of other Ontario universities who offer co-op for Arts programs, including Philosophy
- [Appendix I: Faculty Advisor Role & Responsibilities](#) - an overview of the role of Faculty Advisor, which will be filled for Philosophy by January 2023
- [Appendix G: Ryerson Consultations](#) - an updated list of consultations for the addition of Philosophy, located on page 2.

Department of Philosophy Co-op Program Start Date and Enrolment Projections

The intent is to start offering co-op to Philosophy students in Fall 2023. Eligible students who are admitted to Ryerson in Fall 2022 will therefore be able to apply to co-op through the Career & Co-op Centre in the Spring of 2023, at the end of their first year of studies.

Keeping with the original proposal in addition to running co-op for Arts programs since September 2021, we anticipate seeing approximately 10 students enroll in co-op annually. This is a conservative estimate, with the ability to facilitate more participation in co-op if student demand is there. The enrollment projections are as follows:

Program	Co-op Cohort (Begin Year 2)	Academic Year				
		2023/24	2024/25	2025/26	2026/27	2027/28
Philosophy	Fall 2023	10	10	10	Graduate	
	Fall 2024		10	10	10	Graduate
	Fall 2025			10	10	10
	Fall 2026				10	10
	Fall 2027					10
	Total	10	20	30	30	30

Co-op enrollment for the Faculty of Arts overall has been updated to include Philosophy in the Arts Co-op Proposal in [Appendix B: Projections for Student Intake by Program Major / Year](#).

Departmental Proposal

Work Term Sequence

Undergraduate students will begin their work terms during their second year, and will be required to complete three work terms, with an optional fourth work term.

Given that two of three work terms will take place in the fall and winter semesters, students may be advised to take elective courses in the Spring/Summer semester after third and/or fourth year. Electives in the Spring/Summer will be taken through the Chang School, at least initially.

Students will return to campus for a final study term in the fall of their fifth year, and will be able to complete the program in 4.5 years, though some may opt for the full 5 years.

1st Year			2nd Year			3rd Year			4th Year			5th Year	
F	W	S	F	W	S	F	W	S	F	W	S	F	W

Study	Study	Off	Study	Work	Off or Study	Work	Study	Work	Study	Study	Off, Study or Work	Study	Off or Study
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Program Learning Outcomes

The Philosophy program goals and learning outcomes most directly enhanced through the addition of a co-op include:

- **Program Goal 5:** Students possess a superior set of “career-ready” skills and know how to apply them to professional situations as well as post-graduate study opportunities.
 - *Outcome 5.1:* Graduates will be able to locate, appraise, and apply information gained from a variety of resources.
 - *Outcome 5.2:* Graduates will be able to manage their own learning in changing circumstances through a range of activities, including meeting deadlines; organising their research using a variety of means; and working effectively both independently and collaboratively.
- **Program Goal 6:** Students possess foundational skills across the Arts (Common Arts Platform).
 - *Outcome 6.1:* Graduates will be able to apply foundational, theoretical, and methodological approaches in the humanities and social sciences, including cultural literacy and diverse ways of knowing.

Industry Engagement

Philosophy students are well positioned to take on work opportunities that require skills such as critical, independent thinking, effective and persuasive communication, creative problem solving and ethical deliberation.

Leveraging existing relationships through the program’s alumni network, Program Advisory Council, and the Career & Co-op Centre’s extensive employer network will be key in sourcing co-op job opportunities.

Provided here are lists of existing and potential industry relationships, as well as specific co-op work opportunities for which Philosophy students could apply.

Existing Relationships:

- UHN Bioethics Program
- Canadian Border Services Agency
- Ontario Ministry of Education
- Riipen

Potential Relationships:

- Ontario Public Service
- RBC Royal Bank
- Department of Justice Canada
- Trillium Health Partners

Co-op Work Opportunities

Work opportunities will be available for Philosophy students in a range of positions

requiring critical thinking, writing, research and problem solving skills. Positions which have been recently posted on Ryerson's co-op platform to which Philosophy students could apply include:

- Communications & Engagement Intern, Nature Conservancy of Canada
- Research Analyst, Ontario Ministry of Infrastructure
- Privacy and FOI Co-op Student, Workplace Safety & Insurance Board (WSIB)
- Event Intern, Covenant House Toronto
- People and Culture Coordinator, D2L
- Academic Integrity Outreach Assistant, Ryerson University
- Fundraising Officer, Love Builder Non-profit Society
- Assistant Educator, Green Apple Kids
- Museum Assistant (Educator), Marine Museum of the Great Lakes at Kingston
- Learn To Camp/Fish Program Leader, Ontario Public Service (OPS)

Curriculum Overview

Regular Course Sequence		Co-op Course Sequence		
Year I		Year I		
Fall: SSH105 PHL201 Table 1 (Humanities) Table 1 (Social Sciences) Open Elective	Winter: SSH205 Required Group 1 (PHL 101, PHL333, PHL366) Table I (Humanities) Table I (Social Sciences) Open Elective	Fall: SSH105 PHL201 Table 1 (Humanities) Table 1 (Social Sciences) Open Elective	Winter: SSH205 Required Group 1 (PHL 101, PHL333, PHL366) Table I (Humanities) Table I (Social Sciences) Open Elective	Spring/Summer <i>Students off</i>
Year II		Year II		
Fall: PHL503 PHL708 Table I or Open Elective Table A Table II	Winter: Table II (3) Table A SSH301	Fall: PHL503 PHL708 SSH104 (Co-op Prep Course)* Table II Table A <i>*Counts as a Core Course</i>	Winter: Work Term 1	Spring/Summer <i>Students off or could take some electives</i>
Year III		Year III		
Fall: PHL600 or PHL601 Table II (2) Table B Open Elective	Winter: Table II (3) Table B Open Elective	Fall: Work Term 2	Winter: Table II (3) Table A SSH301	Spring/Summer: Work Term 3
Year IV		Year IV		
Fall: PHL600 or PHL601 PHL802, PHL803 or PHL700 Table II Table B Open Elective	Winter: Table II (3) Table B Open Elective	Fall: PHL600 or PHL601 Table II (2) Table B Open Elective	Winter: Table II (3) Table B Open Elective	Spring/Summer <i>Students off or could take some electives</i>
Year V		Year V		
		Fall: PHL600 or PHL601 PHL802, PHL803 or PHL700 Table II Table B Open Elective	Winter (if necessary): Table II (3) Table B Open Elective	Graduation

New Courses for Philosophy Co-op Program

SSH 104: Co-op Program Preparatory Course

All Arts students in co-op will be required to take a mandatory preparatory course before their first work term. The course was first offered in Fall 2021. SSH 104 was added to Table I for all programs, which co-op students will access during second year as a Core Required Course, replacing the choice between a Table 1 Core Elective or Open Elective course. As a Table I course, SSH104 will be counted as an Core course, with enrollment approved by Departmental Consent as part of a student's acceptance into the co-op program. Should a student not continue with the co-op option, completion of the course will still count in their degree as an Open elective. For a full course outline, including assignments and grading summary, weekly activities, topics and readings, see the most recent [SSH 104 course outline](#) (Fall 2021).

Calendar Description

[SSH104 - Co-op Program Preparation](#) (as posted on the 2022-2023 Undergraduate Calendar).

This course will help students prepare for their co-op work terms. Students will develop career development and job search skills including resume and cover letter writing, interviewing, and networking. Students will critically reflect on the components that ensure healthy, inclusive, and safe workplaces and will actively and collaboratively define personal strategies for cultivating them. This course will be graded and must be taken before students go out on their first work term.

Weekly Contact:

Lecture: 3 hrs. GPA

Weight: 1.00

Course Count: 1.00

Billing Units: 1

Consent: Departmental consent required

Proposed Learning Outcomes

By the end of this course students will be able to:

1. Understand core and necessary components of the Ryerson co-op student experience, including:
 - a. The co-op program timeline
 - b. Expectations of ethical and professional workplace conduct
 - c. One's rights as an employee and/or worker in Canada (as framed within the Employment Standards Act, the Labour Relations Act, and the Occupational Health and Safety Act)
 - d. The roles and responsibilities of all parties involved in planning and delivering the co-op program, including the student, employer, and Co-op Program Specialist
2. Understand and demonstrate fundamental skills in career planning and career management, including the ability to:
 - a. Understand and begin developing strategies for how to conduct labour market research
 - b. Find and use labour market information to develop strategies for

- securing co-op work terms and setting self-determined career goals
 - c. Describe and define crucial labour market distinctions, including the formal and informal economy, employment and self-employment, and the hidden labour market
 - d. Design and develop effective career- and profile-related materials and/or portfolio documents
 - e. Understand and demonstrate effective interviewing and networking strategies
3. Evaluate key aspects of undergraduate Liberal Arts scholarship in relation to co-op program participation, including the ability to:
- a. Describe and demonstrate existing and emerging skill in scholarly and interpersonal communication, project design and planning, empirical research, data analysis, critical thinking among other relevant discipline-specific and/or social sciences and humanities competencies
 - b. Describe and demonstrate existing and emerging skill in contextualized and transferable workplace competencies, such as essential skills and 21st century skills
4. Understand and apply elements and principles of equity, diversity, and inclusion to a workplace setting by developing the ability to:
- a. Identify and discuss strategies and formal policies for achieving accessibility, belonging, fairness, and justice in the workplace
 - b. Identify and discuss strategies and formal policies for eliminating discrimination, harassment, and hate in the workplace
 - c. Identify and map systems of power that contribute to structural barriers, systemic inequalities, and the complex ways they impact the lives and well-being of workers from equity seeking groups in and beyond workplace settings

Arts Co-op WKT Courses

Students will register in the following WKT courses for their co-op work terms. Proposed calendar descriptions are included below.

WKT 150 - Work Term I

For students enrolled in the Co-op Program option. The co-op position must be related to the humanities and/or social sciences. Positions should involve project work but some routine work is acceptable. This course is graded on a pass/fail basis. *Prerequisite: SSH 104*

WKT 250 - Work Term II

For students enrolled in the Co-op Program option. The co-op position must be related to the humanities and/or social sciences. Positions should involve project work but some routine work is acceptable. This course is graded on a pass/fail basis.

WKT 350 - Work Term III

For students enrolled in the Co-op Program option. The co-op position must be related to the humanities and/or social sciences. Positions should involve project work but some routine work is acceptable. This course is graded on a pass/fail basis.

WKT 450 - Work Term IV (Optional)

For students enrolled in the Co-op Program option. The co-op position must be related to the humanities and/or social sciences. Positions should involve project work but some routine work is acceptable. This course is graded on a pass/fail basis.

Alignment with Policy 169: Experiential Learning

The co-operative program fulfills and aligns with the [Policy 169](#) in the following ways:

1. By offering a fully curated opportunity for students to experience working in their intended professions. Students work in 'real-world' roles in companies and other organizations for periods of up to twelve weeks at a time (for a minimum of three placements). They are immersed in the workplace and can sometimes be appointed to relatively senior roles, depending on their level of experience. Students are supervised and managed by their employers while employed, but the university (through the Career & Co-op Centre) maintains contact with the students and will conduct on-site visits to ensure that the placement is working for both the employer and the student.
2. On completion of their work placements, students are required to complete a reflective essay detailing their role and what they learned from it. This essay also allows students to reflect on their experience and how it relates to both their academic program and their future careers. Employers also complete an assessment of the student, allowing students to better understand their strengths as well as areas for improvement. This process is completed in an open manner.
3. Applications, interviews and appointments for all placements are all carried out within the purview of the university. There is an administrative and an academic contact for the students. There are contracts, job descriptions and insurance for all students on co-op work terms, and a named individual in the workplace who will supervise/manage them. Any matters of academic misconduct (or general misconduct) are dealt with either by the employer (in consultation with the university) or the Department of Philosophy.
4. All health and safety issues are the responsibility of the employer, but the university ensures that the employer has appropriate policies and controls in place and is aware of their responsibilities. The Career & Co-op Centre does a pre-screening of all employers that speaks to the health and safety policies that students will be trained on while working at an organization. Employers are also sent an 'Employer Responsibility' sheet that outlines the expectations of employers that work with Ryerson. Additionally, Co-op Program Specialists conduct site visits with employers and students every semester to ensure the working relationship is positive, while also checking in on the health and safety of the student.

Updated Copy for Ryerson Calendar

The following updates are to be made for the 2023-2024 undergraduate calendar. Co-operative Program Overview

An optional co-operative education program is available which provides students with 12 months of work experience which will complement their classroom studies and support the development of essential employability skills required for the workforce, including communication, collaboration and problem-solving.

Although the Career & Co-op Centre cannot guarantee placements, they provide assistance in locating suitable positions and counselling students in their search for suitable jobs. This co-op program enables students to earn competitive wages to offset the costs of a university education.

Students who have completed the first semester of the regular program must apply through the department for admission to the co-operative program before the end of the first year. Enrolment in the co-op program is limited. Admission will be based on a portfolio which includes the student's grade point average, a resume and a statement of intent.

The sequencing of academic and work terms is shown below:

	Fall	Winter	Spring/Summer
Year 1	1st semester	2nd semester	--
Year 2	3rd semester	WKT 150	--
Year 3	WKT 250	4th semester	WKT 350
Year 4	5th semester	6th semester	--
Year 5	7th semester	8th semester	

Students must successfully complete a minimum of three work terms in order to graduate from the co-op program.

In most cases the co-op program requires five years to complete the degree in Philosophy. Students will have the option to fast track if they choose to take electives during the Spring/Summer. The regular program can be completed in four years.

All co-op placements must be approved by the Career & Co-op Centre and the Faculty Advisor for the Philosophy co-op program.

Full-Time, Five Year Co-op Program

In addition to the regular curriculum, Philosophy Co-operative Program students must complete **SSH 104**, **WKT 150**, **WKT 250**, and **WKT 350** before graduation. **SSH 104** is a Core course, which students must take prior to enrolling in **WKT 150**.

The only difference to the calendar will exist during the 3rd & 4th semesters:

3rd & 4th Semester
Begins 2023-2024

REQUIRED:

PHL 503	Ancient and Modern Ethics
PHL708	Introduction to Modern Philosophy
SSH 301	Research Design and Qualitative Methods
SSH 104	Co-op Program Preparation*

CORE ELECTIVES: Four courses from [Table II](#).

/OPEN ELECTIVE: SSH 104 satisfies this requirement.

LIBERAL STUDIES: Two courses from [Table A - Lower Level Liberal Studies](#).

*Departmental approval required.

Recommendation

Having satisfied itself of the merit of this proposal, the Academic Standards Committee recommends: ***that Senate approve this Co-op Expansion to Include Department of Philosophy – Faculty of Arts.***

C. CHANG SCHOOL - Review, discontinuation, and new proposal for certificates in Accounting/Finance

1. Review – Certificate in Accounting - Finance

Executive Summary

The Certificate in Accounting-Finance is a longstanding 8-course certificate offered by the Chang School in collaboration with the School of Accounting-Finance at the Ted Rogers School of Management. While many iterative changes and improvements have been made to the certificate courses over the course of its life-cycle, this study represents the first formal review undertaken in 15 years.

The Certificate in Accounting-Finance is financially viable and ranks high in drawing overall enrollments at the Chang School. It attracts a diverse student population and prepares them for careers in a profession with favourable employment prospects. Delivery format, the frequency of course scheduling and OSAP eligibility enhance accessibility of the certificate courses to the target audience. Student feedback (collected via student and alumni surveys conducted since 2019) shows a high level of satisfaction with the offering (as reflected by the propensity to recommend the certificate to others).

Most of the courses in the certificate are approved by the Chartered Professional Accountants of Canada (CPA) as prerequisites for their Professional Education Program (CPA PEP). While students enrolled in the certificate have a range of professional and learning goals, most students have indicated that they have plans to pursue the CPA designation.

An analysis of competitor programs has revealed that other institutions offer the CPA prerequisites through fewer courses. Their courses align more directly with the required CPA subject area competency map and this enables efficient completion of the prerequisites and a clearer pathway to the credential. Feedback from our students has suggested that closer alignment to the CPA competency map is preferable.

The review findings, student feedback and curriculum committee discussions have formed the basis for the following recommendations:

- Explore ways to optimize alignment to CPA competencies (CPA PEP prerequisite subject areas)

- Explore the development of an alternate certificate model/s with less courses per certificate to enhance student motivation to graduate
- Delete courses from the certificate that demonstrate low uptake and are not approved as CPA PEP prerequisite courses
- Draft the certificate goals and learning outcomes (in consultation with the PAC) to align with student and industry needs
- Consider removing Finance from the certificate name
- Create a functioning Program Advisory Council (PAC) to inform program development and maintain currency and quality

Rationale for Review

The Certificate in Accounting-Finance is one of Chang School's most successful certificates, ranking 7th out of a total of 84 Chang School certificates (over the 5-year period 2014-2019). A recent financial analysis of the certificate demonstrates its viability, attracting approximately 230 new students per year and associated revenue.

While the Certificate in Accounting-Finance has proven highly successful, it has been offered for more than 15 years without formal review. Since the courses are degree credit, they have been kept up to date through academic oversight of the School of Accounting-Finance at the Ted Rogers School of Management. Many of the courses are also recognized by the Chartered Professional Accountants (CPA) Canada as meeting the education prerequisite courses needed to write the CPA examination. These courses are evaluated regularly by the professional association. Over the years, the overall structure of the certificate has remained relatively consistent, with only a few deletions of electives that had low enrollments.

The certificate review process is an opportunity to examine the certificate in a more comprehensive way and assess whether improvements beyond minor curricular structure changes and periodic course revisions could be undertaken. The review also prompts an examination of the target student population. This should enable more targeted marketing and better alignment of curriculum to meet the student's professional, career and personal goals.

In summary, the objectives of this certificate review are to:

1. Identify certificate student audiences and their goals
2. Ensure the curriculum structure and delivery mode continue to meet student and sector needs
3. Determine the effectiveness of the existing curriculum structure to offer a pathway for students to fulfill CPA PEP academic requirements, as well as enter into the Certificate in Advanced Accounting offered by the Chang School
4. Identify any areas of improvement in attracting and retaining certificate students

To support the review and the following research was undertaken:

- Industry and professional trends
- Labour Market Trends
- Competitive Landscape
- Certificate enrolment and graduation trends
- Student profile, educational and professional goals, preferences, satisfaction and feedback (derived from surveying active students and certificate alumni)

Introduction

The financial services sector in Canada, is nationally important in terms of the growth in employment and generating GDP. In the past five-year period, the sector growth has outpaced average growth when compared to all sectors in the local and national economy. Financial services are relevant in all areas of the Canadian economy, with the largest share of employees working in accounting, tax preparation, bookkeeping and payroll services. These roles are found in the private, public and non-profit sectors. While there are multiple pathways to becoming employed in the accounting field, corporate employers, including the largest professional services organizations in the world (commonly referred to as the “big four” - Deloitte, PwC, EY and KPMG) and all major banks require accounting professionals to hold a Chartered Professional Accountant (CPA) designation. The CPA designation is globally recognized and is the predominant professional accounting credential²².

To prepare adult learners interested in a career in the accounting field, The G. Raymond Chang School of Continuing Education offers an 8-course Certificate in Accounting-Finance. The Certificate in Accounting-Finance derives from a longstanding collaborative relationship with Ryerson University's School of Accounting and Finance (SAF). Many courses in the certificate are recognized by the CPA for meeting entry requirements (prerequisites) to its Professional Education Program (CPA PEP).

In 2016, The Certificate in Accounting-Finance was complemented with the introduction of the Certificate in Advanced Accounting. This advanced certificate was designed to provide adult learners with a program designed primarily to provide a more complete pathway to attaining the CPA PEP prerequisites.

Certificate Overview

Goals

The overarching goals of the Certificate in Accounting-Finance are to provide adult learners with the following:

- a solid understanding of current accounting principles and practices in Canada required for entry-level positions.
- a pathway for students in meeting the competencies required for the CPA designation.

Target Audiences

The Certificate in Accounting-Finance is most relevant to the following individuals:

- College or university graduates of non-accounting fields who want to pursue the CPA designation
- Newcomers to Canada who are seeking a Canadian university credential in accounting and finance to build their resumé
- Business owners or managers who want to enhance their accounting acumen
- Working professionals with the goal of pivoting their career into accounting or finance

Admission Requirements

Eligible applicants to the Certificate in Accounting-Finance must have the following:

- Ontario Secondary School Diploma (OSSD) or equivalent (with 6 Grade 12 U or M credits)

OR

- Mature student status

²² CPA Canada. Why become a CPA? (April 20, 2020). Available from: <https://www.cpacanada.ca/en/become-a-cpa/why-become-a-cpa>

Requirements for Graduation

Certificate requirements must be completed within five years from the time of admission into the certificate program.

The successful completion of 8 courses, with cumulative grade point average (GPA) of 1.67+, including 6 required courses* and 2 electives.

***Note:** Internationally educated professionals who have received a waiver from CPA Ontario for CACC 110 and CACC 410, may apply to the Academic Coordinator to waive these courses. If granted a waiver, students will need to complete 4 electives (instead of 2) to fulfill the certificate requirements.

Academic Quality Elements

Curriculum Structure

Currently, the Certificate in Accounting-Finance is an 8-course certificate. There are six (6) required courses and two (2) elective courses. The following is a course list of the required and elective courses. Course outlines can be found in Appendix A. Note that all of the required courses map to CPA competencies and are recognized by the CPA as preparatory courses for the CPA PEP.

**Table 1. Certificate/Curriculum Structure
Required courses (6)**

COURSE	PREREQUISITES
CACC 110 Financial Accounting	None
CACC 410 Management Accounting	CACC 110
CACC 414 Intermediate Accounting I	CACC 410 or CACC 333
CACC 514 Intermediate Accounting II	CACC 414
CFIN 300 Managerial Finance I	CACC 100 or CACC110 AFA 100 Antirequisites AFF 210, CECN 320, HTA 602
CFIN 401 Managerial Finance II	CFIN 300 or AFF 210 or CECN 320 or HTA 602 Antirequisite AFF 310

Elective Courses (selection of 2)

COURSE	PREREQUISITES
CACC 504 Accounting Cases and Concepts I	CACC 514 (corequisite)
CACC 521 Auditing	CACC 514
CACC 522 Taxation for Managers and Financial Planners	CACC 110
CFIN 502 Personal Financial Planning	Prerequisite: <u>CFIN 300</u> or HTA 602 or AFF 210 Antirequisite: AFF 502
CITM 102 Business Information Systems I	Antirequisites: <u>CITM 100</u> , ITM 101, ITM 277
CLAW 122 Business Law	None
CQMS 210 Applied Statistics or Business	Antirequisites: CQMS 202, QMS 230

The curriculum structure has remained relatively consistent over the past 15 years, with only the following changes:

1) Deletion of electives:

- **CACC605: Public Sector Accounting (Fall 2008):** Course is no longer offered by the faculty in alignment with removal from CPA requirements and therefore could no longer be offered as an elective.
 - **CACC 507 Accounting for Managers and CACC 607 Accounting for Small Business (Fall 2017); CACC621 Internal Auditing (Fall 2018):** These courses are not applicable to the CPA preparatory program, nor are they prerequisites for courses in the Accounting-Finance or Advanced Accounting certificates. They have also experienced low enrollments.
- 2) **Replacement of elective CQMS 102 Business Statistics I with CQMS 210 Applied Statistics for Business to align with the undergraduate course offerings (Fall 2020):** CQMS102 and the follow up course, CQMS202, were discontinued and replaced with CQMS210.
 - 3) **Replacement of CACC 100 with CACC 110 and CACC 406 with CACC 410 (Fall 2009) to align with changes in the undergraduate program:** ACC100 and ACC406 did not meet the knowledge requirements for the CPA "entry into PEP" for the first-year level of financial (ACC100) and managerial (ACC 406) accounting. They were subsequently replaced by ACC 110 and ACC 410 (courses that do meet the knowledge requirements).
 - 4) **Course Exemption of CACC 110 and CACC 410 for CPA approved Internationally Educated Professionals (IEP) who have an accounting background (Fall 2017):** Students receiving waiver(s) for CACC 110 and for CACC 410 still must complete a total of 8 courses to earn the certificate.

Certificate learning outcomes

The certificate was developed prior to 2008. Since then, it has not been formally reviewed and no documentation of learning outcomes was found. Learning objectives for each course can be found in the course outlines (See Appendix A).

Mapping of Courses to CPA Competencies

As mentioned earlier, the certificate includes many of the preparatory courses (approved by the CPA) that support admission to the CPA PEP. By completing the Certificate in Accounting – Finance (required courses and electives that may be used towards CPA preparatory course requirements), as well as the Certificate in Advanced Accounting, certificate students will have the majority of courses needed to start the CPA Professional Education Program (CPA PEP). Three courses (CFIN 502, CACC 522 and CITM 102) currently electives in the certificate are not required by the CPA. Other CPA required courses, i.e. Economics courses (CECN 104 Introductory Microeconomics and CECN 204 Introductory Macroeconomics) and the Strategic Management course CBUS 800 are offered by the Chang School but not included in the certificate.

Note that in December 2021, post secondary institutions received a communication that the profession will be changing the IT course from a non-core to a core prerequisite requirement for admission to the CPA PEP, effective May 1, 2022.

Course mapping for the Accounting-Finance certificate to the CPA competencies are captured in the table below.

Table 2: Course descriptions and mapping to CPA Prep Subject Areas

Course	Calendar Description	Mapping to CPA PREP Subject Areas
REQUIRED COURSE		

Course	Calendar Description	Mapping to CPA PREP Subject Areas
<u>CACC 110</u> Financial Accounting	Designed to prepare students for an Accounting Minor, this course will introduce you to the interesting and challenging field of Financial Accounting. This is a language designed to capture, summarize, and communicate the economic facts about an organization in a set of financial statements and the related descriptive notes. The principles of accounting and reporting to various users that are external to the organization and emphasize the decision-makers or users. Financial statement content and the uses and limitations of this information.	Financial Reporting
<u>CACC 410</u> Management Accounting	Designed to prepare students for an Accounting Minor, this course introduces the basic management accounting concepts to business students. Topics covered provide a good balance between the concepts and procedures used in the accumulation and use of data by management accountants to facilitate planning and decision making. Cost behaviour and its implications for planning, reporting to management and control is stressed.	Management Accounting
<u>CACC 414</u> Intermediate Accounting I	This course reviews and embellishes the financial reporting requirements as presented in generally accepted accounting principles (GAAP). The topics will include revenue recognition and the asset side of the balance sheet. Students should expect to use and expand on the application of all the generally accepted accounting principles and concepts covered in introductory financial and management accounting courses. To be successful in the course, students should be prepared to work independently outside the class sessions.	Financial Reporting
<u>CACC 514</u> Intermediate Accounting II	This course continues from the CACC 414 coverage of the financial reporting requirements as presented in generally accepted accounting principles. The topics will include liabilities, share capital transactions, earnings per share calculations, adjustments, correction of errors, income taxes, leases, pensions and financial statement analysis. Students should expect to use and expand on the application of generally accepted accounting principles and concepts covered in CACC 414 and introductory financial and management accounting courses. To be successful in the course, students should be prepared to work independently outside the class sessions.	Financial Reporting
<u>CFIN 300</u> Managerial Finance I	Students are introduced to the major concepts in finance and investments which are the time value of money, discounted cash flows, and risk and return. Students are given a thorough introduction to the mathematics of asset	Finance

Course	Calendar Description	Mapping to CPA PREP Subject Areas
	valuation. In addition, students learn how individual investors assess and reduce the risk associated with their investment decisions. The course examines how firms make investment decisions. The investment decision allocates scarce resources to projects in the firm, and involves financial forecasting, asset valuation, capital budgeting, risk management, working capital management and performance assessment.	
<u>CFIN 401</u> Managerial Finance II	This course builds on the material in Finance 300. Students learn how firms assess risk when making investment decisions. Students also examine how firms decide to finance projects they assess as being worthwhile. This decision involves capital structure, dividend policy, financial instruments, risk-return trade-offs, financial planning and the cost of capital. In addition, students are introduced to derivatives, and their uses in investments, risk-management, and capital structure. Firm management in an international context is integrated into the topics covered in the course.	Finance
ELECTIVE COURSES		
<u>CACC 504</u> Accounting Cases and Concepts I	This course begins with a conceptual review of accounting principles, and reviews issues studied in earlier courses such as revenue recognition, the treatment of research and development cost, and insolvency. Students are also introduced to accounting in the not-for-profit sector, and issues in international accounting. This course emphasizes the role of communication in the accounting profession. Critical thinking and problem-solving skills are developed through extensive use of case analysis.	Financial Reporting
<u>CACC 521</u> Auditing	An introduction to the auditing standards and procedures developed by the accounting profession. Topics covered include: auditing standards, the audit report, materiality, risk, gathering of evidence and sampling. The course is useful to the student who is interested in the profession of auditing or developing a manager's understanding of auditing.	Audit and Assurance
<u>CACC 522</u> Taxation for Managers and Financial Planners	Since taxation has an important effect on business decision-making in this course students will study the fundamental principles of the Canadian income tax laws and examine their effect on business decisions and financial planning. The tax treatment of various sources of income, as well as the legislation affecting small businesses will be included in the course. The student will	n/a

Course	Calendar Description	Mapping to CPA PREP Subject Areas
	develop decision making skills through numerous situational examples and case analysis.	
<u>CFIN 502</u> Personal Financial Planning	This course introduces a framework of basic principles and the financial planning techniques used in professional practice. Topics include setting goals and budgeting, family life cycle, taxation, insurance, managing credit and debt, home ownership and investment principles and types.	n/a
<u>CITM 102</u> Business Information Systems I	This course introduces students to the role of information technology in the modern enterprise with a focus on applying technology to achieve and maintain competitive advantage. The main premise is the introduction of information technology infrastructure and services to support operational efficiency, decision-making, and digital business. Emphasis is on the development of critical thinking and analytical skills through real-life applications and case studies. During the lab component, students gain hands-on experience with Microsoft Excel.	n/a, but is a prerequisite course for CITM696, Accounting Information Systems, which is recognized by the CPA and is a required course in the Certificate in Advanced Accounting
<u>CLAW 122</u> Business Law	This is an introductory course, prerequisite to further studies in law. The course begins with a discussion of the nature and sources of law and an examination of the court system in Canada, the Charter of Rights and Freedoms, and a survey of the more important aspects of the law of torts. The course then concentrates on the legal requirements for the formation of a valid contract. Other major contract law topics include interpretation, privity, discharge, breach, and special types of contracts. Selected cases will be examined.	Other General Business Topics – Law
<u>CQMS 210</u> Applied Statistics for Business	This course introduces both descriptive and inferential statistics. Students learn to use descriptive data, in both numeric and graphic formats, as well as inferential statistics to support managerial decisions in applied business contexts. Topics include grouped frequency distribution, measures of central tendency and variability, probability theory, sampling distribution, confidence intervals, hypothesis testing, and linear and multiple regression.	Other General Business Topics – Statistics

Teaching and Assessment Methods

Students in this program are encouraged to “learn by doing” in various ways, including collaborative group activities, analyzing real-world case studies, practice questions, and using professionally relevant software. Over the past several years, efforts to increase student engagement in the online format have been undertaken in several courses. For example, the recent redevelopment of CACC 410 has incorporated over 50 videos with related worksheets to guide note taking and readings, and to reinforce the concepts learned through the videos. Self-testing quizzes, which follow the videos, have also been added. Discussion board postings and Zoom sessions focus on problem based-learning and represent approaches to enhance engagement. Similarly, CACC 414 and 514 have incorporated several open educational resources (OERs), many of which are videos relevant to the learning objectives and topics. CACC 504 incorporates group work.

The certificate courses employ multiple modes of evaluation, including problem-based homework assignments (requiring written and numerical analysis), case-study assignments, graded discussion board activities, midterms and final examinations. The course assessments place emphasis on the practical application of course concepts in order to ensure competence is achieved. Assessments test both technical and enabling competencies (as defined by the CPA competency map) such as communication and teamwork.

Course Revisions and Redevelopment

Individual certificate courses have generally been revised and updated regularly. The table below tracks online course revision and redevelopment. The rationale for revision is often to reflect changes in the textbook, pedagogical approaches or professional practice. This serves to show that iterative changes are made to maintain curriculum quality and currency.

Table 3. Course revision and redevelopment history

Course	Redevelopment and Revision History
CACC 110	Has been revised and redeveloped 3 times since Winter 2010 with the most recent redevelopment scheduled for Spring 2022
CACC 410	Has been revised and redeveloped 6 times since Winter 2010 with the most recent redevelopment done in Fall 2021
CACC 414	Has been revised and redeveloped 8 times since 2004 with the most recent redevelopment done in Fall 2020
CACC 514	Has been revised and redeveloped 7 times since 2004 with the most recent redevelopment done in Spring 2021
CACC 521	Introduced as a new course in Winter 2020 and a Minor revision done in Fall 2021
CFIN 300	Since being introduced as a new course in 2006, the course underwent Major revision in Winter 2018
CFIN 401	Underwent Major revision in Winter 2018
CFIN 502	Underwent a major revision in Spring 2019
CITM 102	Since being developed in 2005, the course has been revised and redeveloped 7 times with the most recent redevelopment done in Fall 2018
CLAW 122	Since Fall 2007, the course has been revised and redeveloped 3 times with the most recent redevelopment done in Winter 2019
CQMS 210	Developed as a new course in Fall 2020, the course has had a minor revision in Winter 2021

**Academic Management
Governance and Academic Home**

The Academic Home of the Certificate in Accounting-Finance is the Accounting Department in the Ted Rogers School of Management (TRSM). The Accounting Department is responsible for the overall academic quality of the certificate.

Standing Curriculum Committee

Following Senate Policy No. 76, the Accounting Department establishes a Curriculum Committee, consisting of RFA members, at the beginning of each academic year. This committee is responsible for all curricular changes which impact certificate courses offered through the Department. The Curriculum Committee reports to the Accounting Department’s School Council, which approves or rejects the recommendations of the Curriculum Committee.

The Curriculum Committee in 2021 included:

Dr. Shadi Farshadfar, Associate Professor and Chair of Accounting

Daria Sydor, Professor

Dr. Oliver Okafor, Assistant Professor

Romi-Lee Sevel, Assistant Professor and Certificate Academic Coordinator

The Committee engaged in discussing the curriculum, courses and certificate model for the review on May 7th, 2021 and July 14th, 2021. Following a discussion of CPA competencies, the target audience, competitor curriculum and models, the Accounting Department’s curriculum committee also provided feedback via email. This input informed the review.

The following table captures discussion and feedback received from the curriculum committee.

Table 4. Curriculum committee feedback relevant to the certificate review

Topics discussed	Curriculum committee insights/suggested next steps/research/action items	Findings/recommendations
<p>Aligning the courses in the certificate more closely to CPA competencies/ requirements</p>	<ul style="list-style-type: none"> ● Explore how other institutions align curriculum to meet CPA requirements ● Examine course outlines from other institutions to determine if cases are integrated into Intermediate level technical accounting courses (how many?) and how is Information Technology (IT) and analytics covered ● Eliminating CACC 504 may result in limiting in-depth exposure to cases 	<ul style="list-style-type: none"> ● Competitive intelligence revealed that other universities incorporated case studies in technical courses and designed structural models to deliver PEP prerequisite courses in the most efficient manner (fewer courses than The Chang School model) ● CACC 414 and 514 are very comprehensive and best kept as two courses to manage workload and optimize learning ● Integrating CACC 504 into other courses may result in excessive workload and

		<p>assimilation for students and instructors to handle</p> <ul style="list-style-type: none"> ● ITM 595 and CITM 696 will be merged (Fall 2022) into a new course to deliver required IT and analytics content ● Inquire whether economics courses can be amalgamated into a single course
Eliminating non-CPA recognized elective CACC522 and CFIN502	<ul style="list-style-type: none"> ● CACC522 overlaps with CACC742. CACC522 was intended to be less in-depth and geared towards financial planners (now a discontinued certificate). ● Demand for CACC522 and CFIN502 is very low among Accounting certificate students 	<ul style="list-style-type: none"> ● Deletion of CACC522 and CFIN502 from the Certificate in Accounting-Finance is recommended, as the courses are not viable.
Alternative models for the Accounting Certificate	<ul style="list-style-type: none"> ● The development of a 3-certificate model was explored with stand-alone CPA PEP courses incorporated into the structure ● Remove Finance from the certificate name 	<ul style="list-style-type: none"> ● The development of a 3-certificate model was well received and recommended as a potential way to map out a clear pathway for CPA PEP students ● Incorporate courses (like those in Economics and Performance Management) that are currently stand alone but still needed for the CPA PEP, into the new certificate model ● Certificates with less than 8 courses were regarded as better suited in motivating students to complete their program and promote overall retention.

Academic Coordinator

The Academic Coordinator works with the Chang School and oversees many aspects of program management. The coordinator for the Accounting-Finance certificate is assumed to have the following key responsibilities:

Chang School Instructor Supports

- Posting and selection process
- Instructor performance reviews
- Instructor mentorship

Program Support

- Calendar updates
- Certificate and course descriptions updates
- Certificate reviews analysis
- Course development reviews
- Promoting CNED enrollment - Certificate/Course marketing and promotions
- Program website and flyer updates

Student Support

- Participate in Information Sessions and other events
- Respond to student queries
- Evaluating students' prior learning

Program Advisory Council

The Program Advisory Council (PAC) provides input to ensure that the certificate responds to sector needs. The PAC advises on the following:

- curriculum development to help ensure that graduates possess the competencies, knowledge, and skills required by the certificate
- matters related to outside recognition, where appropriate
- current and projected demand for program graduates
- ways in which the program can most effectively meet societal needs
- promoting the program to the target audience and those in the broader community.

For many years, the certificate has not had an active Program Advisory Council specific to the certificate. However, as described earlier regular updates to individual courses has occurred to maintain currency and CPA recognition.

Certificate Elements related to EDI and Student Accessibility

Equity, Diversity and Inclusion

Courses offered through The Chang School typically attract a diverse student body of full-time undergraduates and part-time adult learners. Continuing education adult learners are usually working, often over the age of 30, and have diverse cultural backgrounds. Many courses are attractive to internationally educated students, and anecdotal evidence from our academic advising for the Certificate in Accounting-Finance indicates that several students come with this background.

This diversity of student type enhances the learning experience of all students, as it provides opportunities for working professionals and undergraduates to learn from one another and exchange perspectives.

Accounting courses are offered both in-class and online to appeal to various learning preferences of our students. In recent years, a priority for the Certificate in Accounting-Finance has been to improve the student experience with regard to creating accessible, inclusive and engaging learning environments for the diverse student population. To help reduce barriers to participation, the majority of courses in the certificate are available online, providing access for people who cannot attend classroom courses for a variety of reasons (for example, they may have a work schedule that conflicts or live remotely). During the pandemic, some of the accounting courses were virtualized. This ensured that students who needed the in-class only courses were still able to complete them in a time where classroom delivery was paused. In addition, online courses developed by The Chang School are AODA compliant.

Recognizing that our students are diverse and come with different learning styles, the approach to designing online accounting courses in recent years has emphasized the integration of varied learning elements, and in particular, the use of multimedia (e.g. YouTube videos) and multiple opportunities to practice applying the weekly concepts. In the redevelopment of CACC414 and CACC514, curated Open Educational Resources (OERs) have been heavily incorporated into the learning path for students (rather than simply serving as an occasional supplement to the textbook). The multiple formats of OERs allows us to offer richer content in multiple formats without extra cost to the students.

In addition to exploring new approaches to online course content design, a weekly live session is held online in many of the accounting certificate courses, giving the class the opportunity to work through or review difficult concepts together with the instructor and ask questions about assigned exercises and activities. Students who require additional assistance may also take advantage of TRSM’s tutoring services for select courses (CFIN300, CFIN401 and CQMS210). With these improvements, the aim has been to create a supportive learning environment to foster inclusivity and success for all students.

OSAP Eligibility

In order to overcome financial barriers to education, students in the certificate are eligible to apply for financial assistance under the Ontario Student Assistance Program (OSAP). Eligibility is needs based and depends on full time or part time status. To qualify for full time OSAP, students must take 3 or more courses. To receive OSAP on a part time basis, students must take 1-2 courses.

Evidence of students accessing education with OSAP support is available from the Fall 2020 semester. In this particular term, 12 certificate students received assistance approval. Of the 12 students, the Fall 2020 course load was as follows:

- 10 students took 3 courses,
- 1 student took 4 courses, and
- 1 student took 5 courses.

This indicates that the course scheduling permits access to OSAP funding under current eligibility criteria.

Delivery Mode and Scheduling

Course scheduling is sensitive to the needs of non-traditional students and therefore, the majority of courses in the certificate are offered online as well as in class. To support remote learning during the pandemic, the two courses that were previously offered in-class only, CACC 522 and CACC 504, have been adapted for offer in the virtual environment for Winter 2021.

Students may take up to five years to complete the Certificate in Accounting-Finance, however, because the courses are offered with regularity, students are able to complete it within two years or less by taking two or more courses per term. The table below provides a record of course offering over 3 recent academic years (2018-2020). It documents how most courses (especially required courses) are offered in the classroom as well as online and in some cases, students have the convenience of multiple sections they can choose from.

Table 5: Number of sections offered by Term (Fall, Spring/Summer and Winter) by delivery format

C = Classroom delivery, O= Online delivery, n/o= not offered.

Course	F 20	SS 20	W20	F 19	SS 19	W19	F 18	SS18	W18

Required Courses									
CACC110	2 O	1 O	1 C 1 O	1 C 1 O	1 C 1 O	1 C 1 O	1 C 1 O	1 C 1 O	1 C 1 O
CACC410	3 O	1 O	1 C 1 O	1 O	1 O	1 C 1 O	1 O	1 O	1 C 1 O
CACC414	1 O	1 O	1 C 1 O	1 C 1 O	1 C 1 O	1 C 1 O	1 C 1 O	1 C 1 O	1 C 1 O
CACC514	1 O	1 O	1 O	1 C 1 O	1 O	1 O	1 C 1 O	1 O	1 C 1 O
CFIN300	3 O	7 O	2 C 1 O	3 C 1 O	6 C 2 O	3 C 2 O	3 C 1 O	7 C 2 O	3 C 1 O
CFIN401	2 O	5 O	1 C 1 O	2 C 1 O	7 C 2 O	1 C 1 O	3 C 1 O		2 C 1 O
Elective Courses									
CACC504	n/o	n/o	1 C	n/o	1 C	1 C	1 C	1 C	1 C
CACC521	1 O	1 O	1 O	1 C	1 C	1 C	1 C	1 C	1 C
CACC522	n/o	n/o	n/o	n/o	1 C	n/o	n/o	n/o	1 C
CFIN502	1 O	2 O	1 O	1 C 1 O	1 C 1 O	1 O	1 C 1 O	1 C 1 O	1 C 1 O
CITM102	2 O	5 O	1 C 1 O	1 C 2 O	1 C 3 O	1 C 2 O	1 C 2 O	1 C 2 O	1 C 1 O
CLAW122	4 O	6 O	2 C 2 O	3 C 2 O	5 C 3 O	3 C 2 O	4 C 2 O	5 C 3 O	2 C 3 O
CQMS210	2 O	4 O	1 O						

CQMS 102				1 C 1 O	4 C 1 O	4 C 1 O	3 C 1 O	5 C 1 O	3 C 1 O
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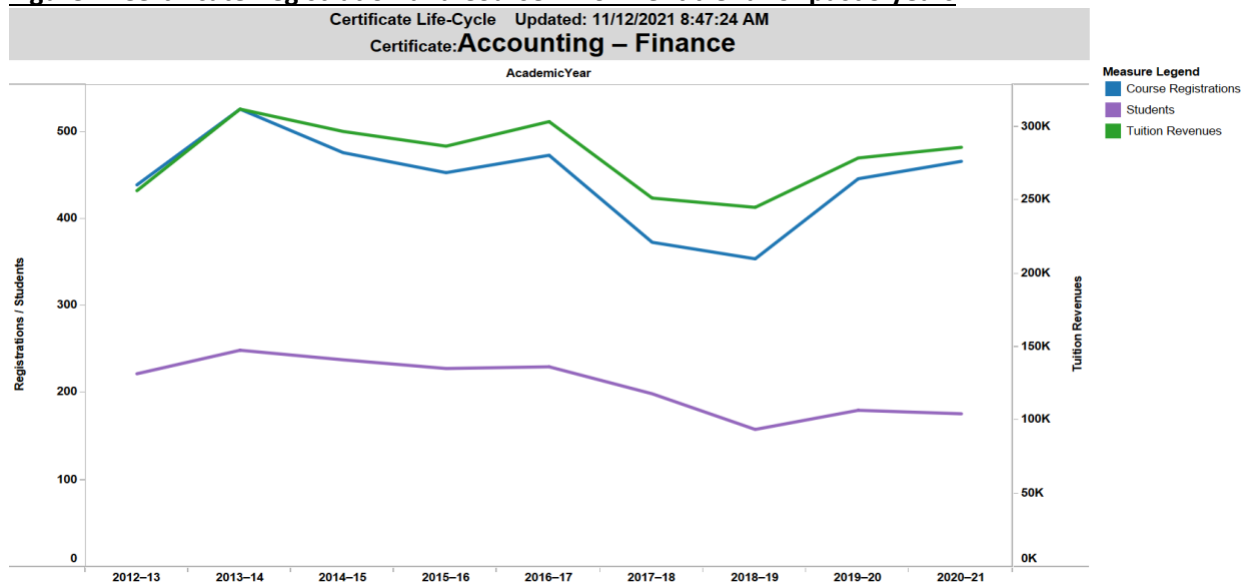
Note: CQMS 210 has replaced CQMS 102 since Winter 2020.

Certificate Enrollment Trends

Certificate Life Cycle Pattern for the Past Nine Years

The life-cycle plot below shows the uptake in the Certificate in Accounting-Finance for the past 9 years (since 2012-13). The pattern shows that course registrations peaked in 2013-14 and then stayed relatively stable. The moderate decline observed from 2017-2018 seems to reverse by an uptick in student registrations and course enrollments recorded for the past 2 academic years.

Figure 1: Certificate Registration and Course Enrollment trend for past 9 years



The numbers in the table below show that certificate registrations (new students) peaked in 2014-15. Since 2014-15, 179 students have graduated from the 8-course certificate. From analysis of the average timespan it takes from admission to the certificate to graduation, students are taking about 3.3 years to complete the certificate.

Table 6: Student Status in the Accounting-Finance Certificate

	2014-15	2015-16	2016-17	2017-18	2018-19	2019-20	2020-21
New certificate students	287	222	215	244	187	250	218
Number of graduates	37	22	19	31	16	24	30
Number discontinued	187	41	109	109	70	180	101
Number cancelled	17	28	34	34	30	21	39

Data source: Tableau, accessed Nov. 2021

Since 2014-15, a total of 1623 students have registered in the certificate. Over that same time 797 have discontinued from the certificate and 203 have cancelled their registration. This represents an attrition of about 60%. It is important to note that retention analysis is more complex than a simple calculation based on certificate registrations and graduations. Recent analysis has revealed that over the past 5 years, a notable proportion of students (about 100) transitioned from the certificate to a degree program at Ryerson. While the data does not track how many laddered into a degree program at another institution, it clearly shows that the certificate program provides an important and accessible pathway for students to pursue a degree and represents an efficient way for undergraduate programs (full and part-time) to attract new students.

The enrollment for required and elective courses by all student types (Continuing education (CNED), full-time and part-time) students is described in Table 7. Note that only CACC 414 and CACC 514 are required courses that are unique to this certificate. All of the required courses are well subscribed to by CNED students and certificate students make up considerable proportion of these.

The electives are shared by many certificates. This explains why Accounting-Finance certificate students contribute to a relatively smaller proportion of the total elective course enrollment. Note that very few certificate students take CACC 522 and CFIN 502.

Table 7: Student Enrollment in Accounting-Finance Courses

Academic Year		2015-16	2016-17	2017-18	2018-19	2019-20	2020-21
Course	Student Type						
REQUIRED COURSES							
CACC 110	All	193	202	180	167	197	209
	CNED	173	171	152	131	175	176
	Certificate	77	59	65	53	81	77
CACC 410	All	93	99	80	41	86	100
	CNED	87	79	64	28	59	86
	Certificate	62	50	43	21	57	62
CACC 414	All	264	180	98	121	95	106
	CNED	104	119	67	73	70	76
	Certificate	59	68	39	44	52	54
CACC 514	All	129	129	82	77	86	87
	CNED	84	91	62	59	60	69
	Certificate	37	49	35	31	34	48
CFIN 300	All	821	799	709	686	695	665
	CNED	208	164	157	144	140	102
	Certificate	57	51	39	45	61	53
CFIN 401	All	621	626	616	579	472	507
	CNED	110	97	93	100	83	63
	Certificate	47	33	30	37	38	36
ELECTIVE COURSES							
CACC 504	All	104	62	45	34	26	52
	CNED	24	32	30	28	15	42

Academic Year		2015-16	2016-17	2017-18	2018-19	2019-20	2020-21
Course	Student Type						
	Certificate	5	14	14	14	4	19
CACC 522	All	62	30	36	9	0	14
	CNED	26	19	22	5	0	22
	Certificate	7	10	6	5	0	9
CACC 521	All	90	84	44	41	64	62
	CNED	79	61	34	29	50	47
	Certificate	9	28	12	10	20	20
CFIN 502	All	225	169	205	224	238	195
	CNED	29	22	23	31	20	19
	Certificate	8	9	8	11	9	11
CITM 102	All	321	308	384	442	507	411
	CNED	174	159	153	145	126	153
	Certificate	14	18	17	19	25	3
CLAW 122	All	908	903	788	826	870	953
	CNED	316	337	310	260	236	234
	Certificate	31	38	38	32	39	45
CQMS 201 (new course)	All						559
	CNED						74
	Certificate						9

Source: Tableau worksheets generated by the Finance Department (last accessed Nov. 2021)

Legend: All=Full-time, Part-time and CNED students, CNED= Continuing education students (from any certificate and non-certificate), Certificate=Enrollments Active in the Acc-Fin certificate

Financial Viability

The Certificate in Accounting-Finance was assessed for financial viability by the Finance Strategies and Planning Group. The assessment examined enrollment, revenue generation and certificate profitability over a 5-year period (2014-15 to 2018-19). Analysis conducted by the group was captured in a report generated in May 2020.

In summary:

- The analysis showed that over a 5-year period the certificate generated healthy tuition revenue
- In terms of enrollment numbers, the certificate is ranked 7th out of all (84) Chang School certificates by the number of enrollments. This has been consistent over the 5-year period examined.
- The financial viability report provided concludes that the *“Certificate enjoys strong, continued enrollments and revenues. In our opinion, this certificate was and is financially viable.”*

Insights from Student and Alumni Surveys

To find out more about students, learn about their goals and to obtain feedback about the Accounting-Finance certificate, this review relies on data generated from the 2019 Student Satisfaction Survey, a survey sent out to active certificate students and alumni in May 2020 and in-course surveys conducted in January 2021.

Student Profile

A student demographic profile from the 2019 Student Satisfaction Survey indicated that the students were mostly female, relatively young with 50% aged between 30-39 years old and a large proportion had origins outside of Canada. The students were well educated with over 75% already having a college diploma, undergraduate degree or above. While 36% were employed full-time, their income (mostly below \$50,000 suggests that they are career builders.

Table 8. Student Demographic Profile

Demographic Profile, % (n=14)		%
Gender	Female	71
	Male	29
Age	20 to 24	14
	25 to 29	7
	30 to 34	36
	35 to 39	14
	40 to 44	14
	45 to 49	14
Origin	Canada	29
	Other	64
	Prefer not to answer	7
Income	Under \$29,999	43
	\$30,000 to \$49,999	29
	\$50,000 to \$74,999	7
	\$75,000 to \$99,999	0
	\$100,000 to \$124,999	7
	\$125,000 or over	7
Education	High school graduate	7
	Apprenticeship or trades certificate or diploma	14
	College diploma	14
	Bachelor degree	50
	University certificate above bachelor level	7
	Professional degree (e.g., MD, DC, DDS, LLB)	7
	Prefer not to answer	7
Employment Status	Employed FT	36
	Employed PT	29
	Studying FT	21
	Studying PT	14
	Unemployed or laid off	14
	Doing something else (e.g. looking after dependents)	7
	Voluntary position/co-op/Internship	14

Data source: Derived from respondents to 2019 Chang School Student Satisfaction survey.

The May 2020 survey confirmed that the educational level of the learners in the certificate was high. As shown in Table 9, the educational profile showed that majority of the students had completed a post-secondary education.

Table 9. Student Educational Profile

Educational level	Current Students n=63	Alumni n=26
Have a post-secondary degree or diploma	86%	77%
Do not have a post-secondary degree or diploma	14%	23%

A large proportion of the respondents had completed their post-secondary at a university in Canada but the proportion that were internationally educated was notable.

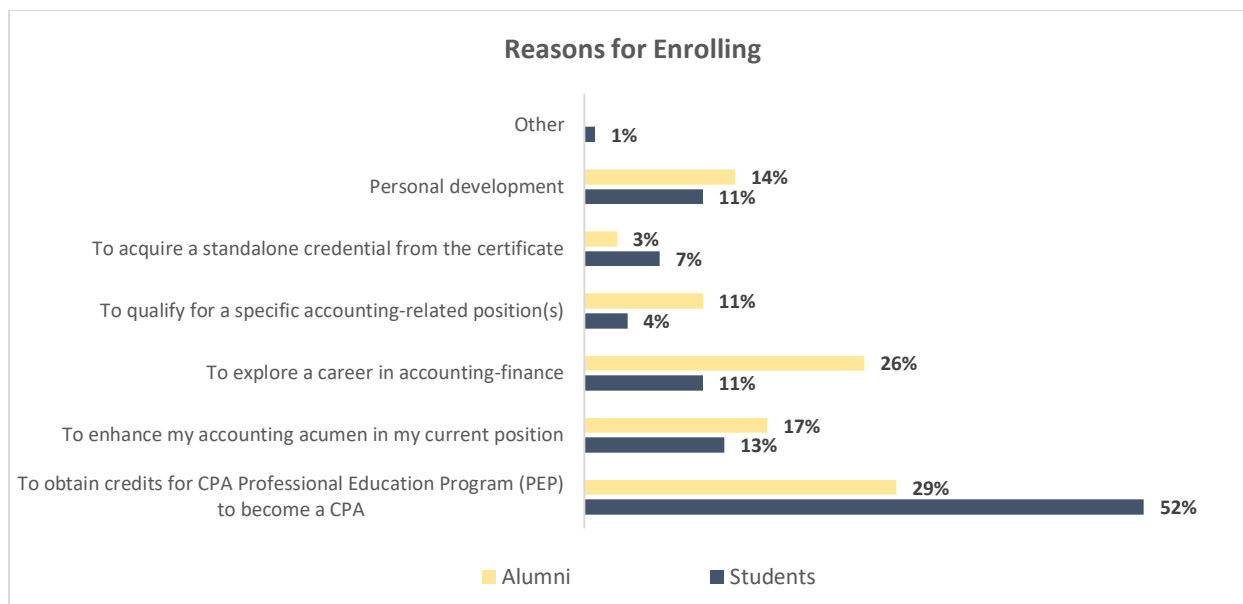
Table 10. Source of post-secondary credential

Source of post-secondary credential	Current Students n=54	Alumni n=19
From a Canadian University	48%	37%
From a Canadian College	11%	5%
From an International Institution	41%	58%

Motivation for Enrolling in the Certificate

Obtaining credits towards a CPA qualification was the main reason (note that respondents could choose more than one reason) for enrolling in the accounting courses for both current students (52%) and the largest minority of alumni (29%). Career-related motivators were also evident for alumni (exploring a career in accounting-finance, 26%). n=67 (students) n=27 (alumni).

Figure 2. Motivation for Enrolling in the Certificate



Data Source: May 2020 survey

When current students in accounting courses were asked about their goals and aspirations in 2021, their free-text answers included the following themes:

- Attain credits for CPA designation
- Build knowledge of accounting
- Gain new skills and understanding of concepts that can be applied at work
- Build business acumen
- Build on undergraduate degree/get undergraduate degree
- Seek employment with a government agency
- Update and refresh my knowledge in the field
- Increase credibility
- Refresh accounting skills or gain qualifications (degree) for promotion at work
- Attain Canadian credentials and to build resume and career in Canada (new Canadians)

Motivation for taking Specific Accounting Courses

To enable us to supplement data collected in 2019 and 2020, and get a deeper and a more accurate insight into why current students were taking specific accounting courses, yet another short survey was conducted during the first week of classes in January, 2021. Links to google forms were posted on online or virtual course shells running in the Winter 2021 term. Instructors requested students to respond. The questions probed student motivation for pursuing the course and plans to get the CPA credential and preferences for curricular structure. Note that the free text format of this questions explains unique answers for some courses.

Table 11. Main motivation for taking specific courses

Course	Response Rate	Main Motivation
CACC 110	74% n=66	Working on getting CPA 38% ACC-FIN certificate 17%

Course	Response Rate	Main Motivation
		Career Building/Interest 17% Requisite for another certificate 9% For Minor/degree completion 8% Degree entry 6% Acquiring credits 3% Other credentials 3%
CACC 410	85% n=39	Working on getting CPA 59% ACC-FIN certificate 22% Career Building/Interest/knowledge 15% For Minor 2.5% CFP 2.5%
CACC 414	42.3% n=11	Working on getting CPA 45% ACC-FIN certificate 45% Other 10%
CACC 514	35.1% n=13	Working on getting CPA 69% ACC-FIN certificate 7.5% Both CPA and ACC-FIN certificate 15% Interest/knowledge 7.5%
CACC 521	100% n=17	Working on getting CPA 76% ACC-FIN certificate 12% For Minor/degree completion 12% Career Goals 6%
CACC 522	68.1% n=13	ACC-FIN certificate 33% Career building/ Interest 27% Working on getting a CFP 20% Working on getting a CPA 13% Minor/degree 7%
CACC 801	73.3% n=11	Working on getting CPA 100%

Data source: January 2021 survey

For the majority of the courses (except CACC 522) working towards the CPA designation was the primary motivation.

Current Plans for Obtaining Professional Designation (CPA)

While the above question probed motivations for taking the courses, this question directly sought to determine what the students' current plans were for pursuing the CPA. For most courses, except CACC 110 and CACC 522, students were focused on pursuing the CPA. It should be noted that CACC 110 is an introductory course and students responding to the survey include individuals with diverse student career status (full-time, Part-time, CNED and certificate). CACC 522 is not a prerequisite course for the CPA PEP.

Table 11. Plans for pursuing professional designation

Course	Focused on pursuing CPA	Not Pursuing CPA	May consider CPA in the future
CACC 110	36.4%	18.2%	45.5%
CACC 410	38.5%	2.6%	59%
CACC 414	54.5%	9.1%	36.4%
CACC 514	76.9%	-	23.1%
CACC 521	82.4%	-	17.6%
CACC 522	13.3%	26.7%	60%
CACC 801	81.8%		18.2%

Data source: January 2021 survey

Preference for curricular structure/alignment

Table 12. Preference for curricular structure

Course	% of students indicating that they would like courses/curriculum directly aligned to the CPA PEP competency areas.
CACC 110	57%
CACC 410	92%
CACC 414	82%
CACC 514	85%
CACC 521	76%
CACC 522	53%
CACC 801	73%

Data source: January 2021 survey

Notable feedback for certificate design and focus:

- Many respondents would like to see courses aligned to all CPA competency areas in one certificate
- It is perceived that one-on-one course alignment will:
 - maximize value for courses taken
 - provide convenience for busy working professionals
 - keep learners on track to acquiring the CPA credential and encourage progression through the program
 - save time and money
 - provide assurance that the curriculum is providing knowledge required for the CPA
 - help them identify their particular interest in CPA competency areas
 - make it easier to manage requirements and workload
 - provide the necessary motivation and discipline to follow the CPA path.
- One student perceived close alignment already in existence and was the reason they chose the Chang School program.
- One student had mixed sentiments about one-on-one alignment as they perceived splitting competencies into 2 courses would allow for time to absorb and understand material better.

Reasons for choosing The Chang School's Accounting-Finance certificate

When asked to select up to 3 reasons for choosing to register in the Chang School's Certificate in Accounting-Finance, both current students and alumni indicated that the top reasons valued were flexibility in program delivery, scheduling options and university level education and degree-credit status. From comments provided, flexibility, online delivery and scheduling options were attractive to working adult students. The university level courses were cited as being important by those with goals to progress to a degree or CPA credential.

Table 13. Main reason for choosing the certificate as an educational option

Reasons	Students n=64	Alumni n=26
Affordable tuition fees	33%	23%
Flexibility in program delivery	73%	73%
Scheduling options (i.e., offered on a frequent, ongoing basis)	45%	31%
Degree-credit status of courses	30%	27%
OSAP eligibility	23%	15%
Credential (CPA link)	9%	15%
University-level education	41%	62%
Quality of courses	8%	15%
Other	6%	

Data Source: May 2020 survey

Competitor programs considered for CPA PEP requirements

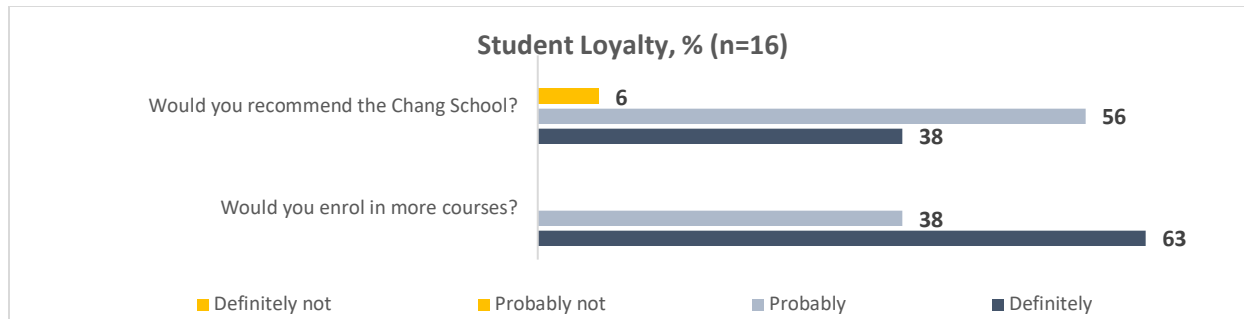
Respondents from the May 2020 survey who were pursuing the CPA were asked if they had considered any other institution to take their CPA PEP courses. The majority (85%) has not considered another institution. The number (15%) of respondents who enrolled in other institutions was small (n=5), yet it is interesting to note that most had enrolled in a course offered by CPA Ontario.

There is anecdotal evidence that some students find the CPA offerings of inadequate length for the amount of material needing to be covered. In October 2021, a student emailed the Academic Coordinator to say that the CPA accounting *“courses are too short and it's really tough to grasp all the materials”*. This particular student indicated that she would like to complete the rest of the CPA PEP courses at The Chang School.

Overall satisfaction with the certificate

Student loyalty is a surrogate indicator of satisfaction. Overall, loyalty is high. Respondents indicated that they would unanimously enrol in more courses. When asked, 94% indicated that they would probably or definitely recommend the program to others.

Figure 3. Propensity to recommend program and late more courses



Data source: 2019 Student satisfaction survey.

In the May 2020 survey, students and alumni expressed overall satisfaction through comments such as these:

- *Really enjoyed working through the certificate over a number of years. Highly recommended*
- *Currently I am pretty much satisfied with the course outline and course schedule which I had opted for this term. I also found all instructors are supportive. So overall experience after taking this course is satisfactory*
- *I have recently enrolled in the certificate program and am enjoying the courses I'm currently taking. The online delivery is ideal for me as I pursue my CPA designation.*
- *I liked the quality of the instructors, all of them have experience and shared their knowledge with the students.*
- *I really enjoyed this certificate. The lecturers were excellent and were always available to answer questions. Most of them have a ton of real life experience and you can see that in their teaching style. I am proud to say I completed this certificate (I finished my last course this semester)*
- *My experience is good so far.*
- *Thank you, it is an incredible opportunity which has enabled me, personally as well as professionally. I look forward to continuing my studies at ru!*
- *Fantastic Professors, Great school, Exemplary Certificate! Worth every penny!*
- *Experience was great. Instructors (professors) were great. Very helpful and always willing to answer questions. Online delivery system was easy to use and working with the university to obtain the certificate was easy. People at Chang School were great.*
- *It was a good experience overall.*

Room for Improvement

Student feedback did point to areas for improvement:

- Instructor consistency and qualifications –overall instructors were commended for being outstanding in pedagogical approach and class engagement, yet, it was noted by some respondents that their learning was marred by some instructors who provided a suboptimal experience (communication and responsiveness).
- Administrative support with providing information, scheduling conflicts, exams, payment, etc.
- Course and exam scheduling.
- Online assessments – online exams designed for in-class format, heavily weighted final exams.
- Enhancing interactive delivery of online courses.
- Provide a clear path (map) to work towards the CPA PEP

Student outcomes – alumni satisfaction with reaching learning goals/professional aspirations

When assessing whether the certificate allowed them to reach their professional goals there was a high level of satisfaction among alumni. Overall 88% percent of the alumni who responded, indicated that they were satisfied that the certificate helped them reach their goals.

Table 14: Alumni satisfaction with achieving goals

Level of satisfaction	Alumni n=25
Very satisfied	48%
Satisfied	40%
Neutral	4%
Very dissatisfied	8%

Data Source: May 2020 survey

Free text comments (provided verbatim) expressing satisfaction included:

- *I am getting there, it is a big undertaking to change your career! I want to continue my education and keep learning and working.*
- *I was able to apply what I learned studying in class at work.*
- *Was able to find a job in the field even before completing the course. And have been able to give(sic) similar work since*
- *Extremely happy of my choice to obtain this certificate! It has allowed me to completely change career streams and now has accelerated my progression in my current job.*
- *Broadens my area of expertise when auditing*
- *Gives an good overall idea of how accounting works and how to use various softwares*
- *Helped me have a bigger understanding of the accounting principals. Also a good asset for my resume.*
- *I believe it will be very helpful. The required courses, and depth of knowledge were incredible. It provided me with all of the fundamentals of full-cycle accounting to perform bookkeeping services for many clients.*
- *It assisted me in qualifying for multiple positions and obtaining interviews which then landed me a bunch of job-offers! I am know (sic) a Level 2 Credit Underwriter at EDC*
- *It has assisted me greatly. I did a full 180 from a degree from a career in the arts- it brought a tangible skill set to my resume.*
- *It helped me gained more credibility.*
- *It provides de(sic) knowledge needed for accounting roles plus they always ask for certificates on your resume.*
- *It showed any potential employer that I know my job.*
- *It was a general introduction into the field as a whole.*
- *this course updated me regarding accounting issues.*
- *This enhance and refreshing my accounting and finance skills*
- *To get knowledge of accounting principles and processes*

Comments that pointed to room for optimization of curriculum to meet current digital accounting practices were:

- *Certificate in Accounting-Finance was a good experience for me, I think it is a very useful course for someone starting in accounting as well as looking to earn CPA credits. I think, having an option for accounting software exposure (either a full credit course or a part of another course like CACC110 as added resources) would make lot of graduates ready and confident in starting accounting jobs.*
- *In the current market, software in each industry and profession are play an important role. So, if the program's courses included current market software, I think they would be much more efficient.*

Outcomes – where alumni work and what they do

Sectors where alumni are currently (May 2020) employed include:

- Software development
- Banking
- Healthcare/research administration
- Municipal government
- Architecture
- Not for profit sector

Positions:

- *Accountant; Underwriter; Financial Planner*
- *Accounting adjacent (management positions with budgeting responsibilities etc)*
- *accounting manager*
- *Accounts Payable/Receivable*
- *Bookkeeper*
- *Financial Analyst*
- *I am exploring - I am currently working in tax at a very nice firm. I enjoy working with clients — so hope to continue this as I learn and grow into the field. I am more interested in finance at this point however.*

Preferred Course Delivery Mode

When asked what the preferred course delivery mode was both current students and alumni indicated a strong preference for a hybrid delivery model.

Table 15. Preferred Course delivery mode

Delivery Mode	Students	Alumni
In-class	25%	24%
Online	35%	24%
A combination of in-class and online	40%	52%

Data Source: May 2020 survey

Notable student comments related to virtual/online delivery reflect the mixed preferences observed above. Students expressed a preference for more online delivery but also suggested the desire for more interaction, pointed to areas for improvement and a hybrid approach:

- *I believe there should be more to the online classes*
- *More online courses to accommodate busy life.*
- *Can be more interactive*

- *I think the online program worked well when there were some (even a little bit) of online live instruction. In-Class final exam writing should still be mandatory.*
- *online courses should have webinar videos with instructor lectures instead of just written content*
- *I find that doing only online classes is not a great option. It was fine for 110 as it was fairly introductory, but as the courses become more challenging, I feel that some sort of in-person teaching is helpful. My current 414 class is online, but my teacher is offering a lab over ZOOM every Thursday evening where he reviews the materials and asks questions. This is very helpful and I hope that this trend continues.*

Societal Need

Alignment to Professional Designation - External Recognition

As identified earlier, the Certificate in Accounting-Finance includes courses that support admission to the **CPA Professional Education Program**.

Comparator Analysis

There are several comparator programs in accounting and finance within Toronto/GTA and Ontario. Many programs are also offered nation-wide, and some of these are aligned with the professional body requirements (CPA). The most likely contenders for the Chang School program in Accounting-Finance are the continuing studies programs available at York University (two levels and flexible delivery formats) and the University of Toronto (U of T).

Accounting-finance programs comparable to the Chang School option are largely university-based. The comparable certificate analysis will therefore focus on the two primary comparators in which The Chang School’s program most closely aligns with in terms of program objective, structure, output, delivery and target audience. A full comparator scan can be found in **Appendix B**.

Both primary competitor programs offer courses that meet the CPA required competencies. A key difference between these competitor programs and the certificate program at the Chang School is that there are fewer courses required (and thereby, a lesser cost and time investment) to meet the CPA course requirements. Table 16 provides a comparative overview between CPA Ontario course offerings at U of T, York University and The Chang School.

Note that when students and alumni were asked if they had considered or taken courses towards the CPA elsewhere, CPA Ontario was most mentioned.

Table 16: Comparator Programs – Number of courses required to meet prerequisites for the CPA PEP

CPA Ontario	The Chang School	UofT Continuing Studies	York Continuing Studies
14 individual courses	20 courses individual courses OR 2 certificates (8 courses; 6 courses) +	14 individual courses OR 2 certificates (3 courses; 4 courses) + 7 courses	17 courses in 2 certificates (14 CPA Preparatory courses + Business Communication and applied capstone in each certificate)

	6 courses		
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Update Note: As of February 2022, the University of Toronto offers 5 certificate programs with a total of 19 courses

Industry/Sector Outlook

*Canadian Industrial Profile for Accounting*²³ provides a positive outlook for the sector. Following a generally weaker growth of Canadian business in the 2015-2017 period, new business in the country has started to grow, and with it, the demand for accounting services as well. Short-term forecast suggests robust profits, while long-term trend indicates strong profits and healthy production.

The Conference Board of Canada industry report states:

Mergers and acquisitions—Thanks to the legalization of cannabis, weaker oil prices, and the ongoing recovery of the mining sector, we expect a rise in mergers and acquisitions this year, supporting demand for specialized accounting services.

Labour demand—The number of job vacancies for auditors, accountants, and investment professionals has trended upward since 2015, increasing labour pressures for accounting services.

Top companies in this industry (in 2017 based on revenues) were Deloitte, PwC, KPMG and Ernst & Young. Ontario is positioned very well for educational and training provisions related to accounting needs – over 41% of GDP in accounting services are generated in the province.

Labour Market Information

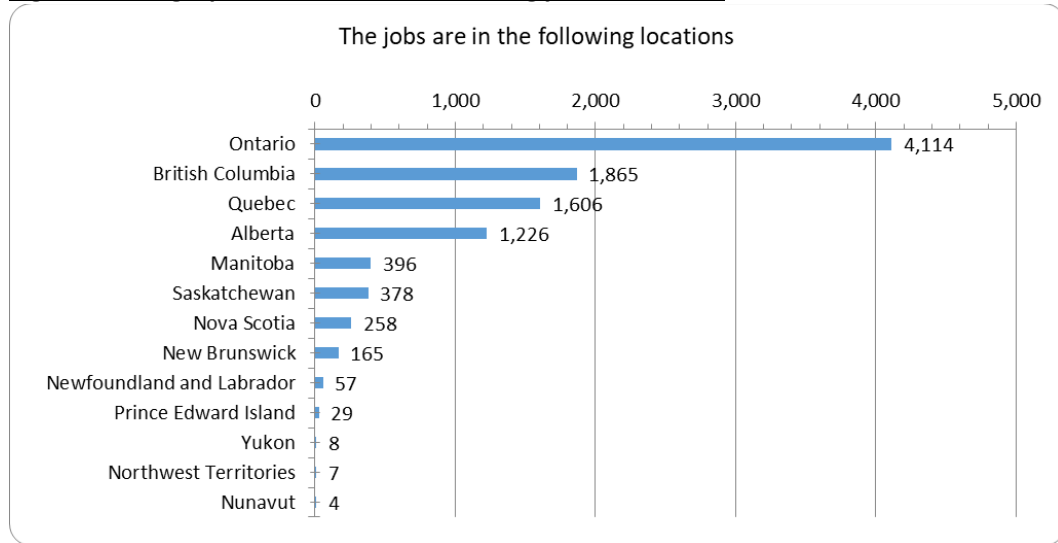
To obtain real-time snapshot of jobs available for potential graduates of this program, a search was done in 2020 on Burning Glass Insights/Jobs²⁴ a real-time jobs database for the Financial Auditors and Accountants (NOC 1111). The following findings describe the job location, job titles, salaries and job postings.

In Canada the majority of the jobs are located in Ontario, British Columbia and Quebec and the employment outlook is positive.

²³Canadian Industrial Profile: Accounting—2019. Ottawa: The Conference Board of Canada, 2019.

²⁴ Burning Glass Insights/Jobs database. [Retrieved April 2, 2020]. Available from: <https://labourinsight.burning-glass.com>

Figure 4: Geographic location of Accounting jobs in Canada



Industry sectors seeking employees were mainly identified from accounting firms, consultancies and financial institutions (Figure 5). Note that accounting and management consultancies fall under Professional, Scientific and Technical Services.

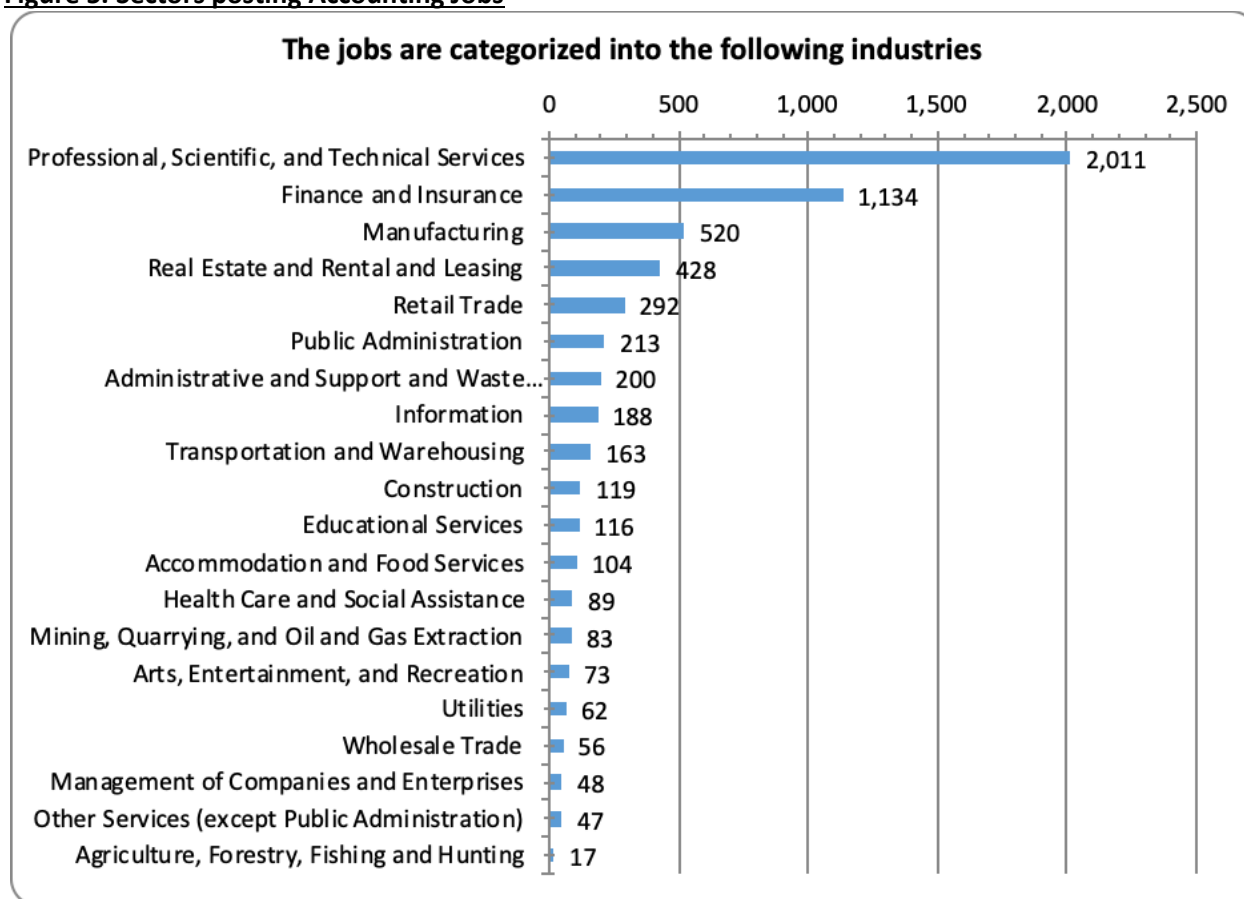
The top job titles that are in demand include: Accountant (including Senior and Junior), Internal auditor; Financial Accountant; Staff Accountant; Project Accountant; Audit Manager and Tax Analyst.

The most typical salary (when specified) suggests professionals are earning between \$50,000 and \$74,999, indicating that students will be preparing for career that potentially has a reasonable wage.

Educational requirements: A bachelor's degree was most requested.

In Ontario, Accounting is a regulated profession. A professional credential is required for practice. When specified in the job postings, a CPA professional designation is most frequently requested. This suggests that the certificate fulfills the need for preparing learners for practice in an in-demand professional field.

Figure 5. Sectors posting Accounting Jobs



Job Requirements & Skills

The primary employment groups have the following identified job requirements and skill sets²⁵:

Financial auditors

- Examine and analyze journal and ledger entries, bank statements, inventories, expenditures, tax returns and other accounting and financial records, documents and systems of individuals, departments within organizations, businesses or other establishments to ensure financial recording accuracy and compliance with established accounting standards, procedures and internal controls
- Prepare detailed reports on audit findings and make recommendations to improve individual or establishment's accounting and management practices
- Conduct field audits of businesses to ensure compliance with provisions of the Income Tax Act, Canadian Business Corporations Act or other statutory requirements
- May supervise other auditors or professionals in charge of accounting within client's establishment.

Accountants

- Plan, set up and administer accounting systems and prepare financial information for individuals, departments within organizations, businesses and other establishments

²⁵ Government of Canada. Job Bank. [2 April 2020]. Retrieved from: <https://www.jobbank.gc.ca/marketreport/occupation/113/ca>

- Examine accounting records and prepare financial statements and reports
- Develop and maintain cost finding, reporting and internal control procedures
- Examine financial accounts and records and prepare income tax returns from accounting records
- Analyze financial statements and reports and provide financial, business and tax advice
- May act as a trustee in bankruptcy proceedings
- May supervise and train articling students, other accountants or administrative technicians

Common skill sets to support employment in the above stated areas include:

- Ensuring accuracy and compliance to accounting standards, procedures and internal control
- Preparing reports and audit findings
- Recommending improvements to accounting systems and management practices
- Conducting field audits of businesses to ensure compliance with provisions of the Income Tax Act, the Canadian Business Corporations Act or other statutory requirements
- Examining accounting records
- Planning, set up and administer accounting systems
- Preparing financial information for individuals, departments or companies
- Preparing financial statements and reports
- Developing and maintaining cost findings, reporting and internal control procedure
- Preparing income tax returns from accounting records
- Analyzing financial documents and reports
- Providing financial, business and tax advice
- Examining accounting records
- Acting as trustee in bankruptcy proceedings

Accounting Tech Trends

Technology advances are affecting and altering almost every industry and sector, and accounting is not an exception. In 2020, the most prominent digital trends predicted²⁶ for the accounting field were:

- The blockchain boom
- Cloud-based accounting software will become ubiquitous, such as: QuickBooks Online, Sage Accounting, Wave Accounting, Zoho Accounting, FreshBooks, Xero, PCLaw by LexisNexis, ZipBooks, NetSuite, and Kashoo Online Accounting²⁷.
- Extended reality (XR) to enhance learning and skills development.
- Artificial intelligence - in an explorative stage when it comes to streamlining business operations.
- Advanced analytics are becoming essential to all business operations. Accounting will move to higher amount of automation that reduce labour-intensive tasks thus enabling more complex, strategic and advisory tasks – a trend which will likely lead to new jobs and evolving responsibilities for CPAs.
- Cybersecurity at a forefront of all business operations.

There is also a perception that accounting education needs a revision that would introduce greater focus on technology in the curriculum and teaching, more relevant and contemporary topics²⁸.

²⁶ Five Accounting Tech Trends for 2020. CPA Resources for Members. December 2019. Accessed at: <https://www.cpacanada.ca/en/members-area/profession-news/2019/december/five-accounting-tech-trends-for-2020>

²⁷ Intended as examples, see full blog at: https://www.techprevue.com/accounting-software-for-business/#Top_10_Accounting_Software_for_Business_Growth

²⁸ Ackerman, J.L. (October 2019). The Accounting Curriculum Needs a Complete Overhaul. The CPA Journal. Accessed at: <https://www.cpajournal.com/2019/10/22/the-accounting-curriculum-needs-a-complete-overhaul/>

SWOT Analysis

Strengths
<ul style="list-style-type: none"> ● An established certificate that is financially viable, it generates enrolments and revenue and ranks #7 (out of 84) in enrolments when compared to other Chang School certificates ● Prepares students for employment in the field with good employment prospects ● Courses are aligned to a professional credential and recognized by the CPA as covering competency areas needed to prepare individuals for the CPA Professional Education Program ● Courses are degree credit and the certificate can serve as a pathway program to an undergraduate degree (a feature that is rare among competitor programs) ● Students perceptions of quality teaching and instructor efforts share valuable professional experience ● Collaborative model with TRSM ● Both online and classroom delivery options to provide flexible learning options for the mature student ● Frequent year-round course scheduling facilitates student progression in a timely way ● Due to the degree credit courses within the certificate the program is OSAP eligible (allowing for differentiation from competitors).
Weaknesses
<ul style="list-style-type: none"> ● In a few instances, students identified a need for improved instructor communication and timely feedback in the online environment ● The certificate is long (8 courses) which may be a deterrent to completion ● The certificate does not include some courses that are pre-requisites for the CPA (they are available at the Chang School but are currently available as stand-alone offerings) ● The certificate currently includes some courses with limited demand from certificate students
Opportunities
<ul style="list-style-type: none"> ● Better defining target audience for streamlining curriculum and designing targeted marketing ● Continue making online delivery more interactive ● Optimizing alignment of course curriculum to CPA competency areas ● Determining the needs of and serving a subset of students that are internationally educated ● Developing curriculum to cover emerging areas of professional practice ● Conduct more events to engage current and prospective students to discuss emerging issues in the accounting profession
Threats
<ul style="list-style-type: none"> ● Competition from programs that may be cheaper or more efficiently aligned to the CPA competency areas (1:1) ● Economic and employment fluctuations or global events (e.g. pandemic) that influence motivation and demand for continuing education and professional development ● The need for rapidly evolving skills and competencies - the accounting profession is experiencing change resulting from factors such as new technology (like artificial intelligence, blockchain, machine learning) requiring frequent reskilling

Findings and Recommendations

The findings of the report show a successful and viable certificate that prepares students to enter a profession for which there are jobs. Various findings of this review need consideration in order to ensure that the certificate continues to be a program of choice in the competitive landscape.

Aligning to Student Goals

Students in the certificate and courses have revealed a variety of goals for taking the certificate. However, the majority indicate that they are currently working towards the CPA designation, or planning to do so in the future. They also valued alignment to the CPA subject areas to stay motivated and on track. Having a clear pathway to the CPA designation enhances the value proposition of the certificate for the learner. However, as the review has shown, students valued the high quality and this should remain a design priority.

Delivery and Engagement

Learners clearly indicated that flexible delivery is an attractive feature of Chang School courses. Most courses are offered online and virtualization of some courses during the pandemic has exposed students to synchronous online delivery with live sessions as well. Student feedback pointed to a preference for interactive elements, increased engagement and a hybrid format. Over recent course revisions and online redevelopment, videos, OERs, real-life problems, quizzes, optional synchronous sessions and other interactive features have been added. This review validates that it is practice to be continued.

Technology trends

The research conducted for this review, highlights the use of current accounting software, analytics and emerging trends in professional practice. Learner feedback also cites the value of exposure to current accounting software to ensure readiness for professional practice and confidence building. The pandemic has accelerated the adoption of digital technology and its utilization for all enterprises. The accounting industry is no exception. Proactively exposing students to the imminent adoption of blockchain, artificial intelligence and increased use of analytic software would ensure Chang School students are well prepared.

Based on review findings, the following **recommendations** have emerged to enhance the Certificate in Accounting-Finance:

Review findings	Recommendation
Students prefer certificate courses more closely aligned to CPA requirements to provide a clear pathway to the professional designation	Explore ways to optimize alignment to CPA competencies (CPA PEP prerequisite subject areas)
The certificate is relatively long and may inhibit retention	Explore the development of an alternate certificate model/s with less courses per certificate to enhance student motivation to graduate
Certificate student uptake in some courses (CACC 522 and CFIN 502) is low and renders the courses non-viable	Consider deleting courses CACC 522 and CFIN 502 from the certificate
Certificate goals are unavailable (no documentation)	Draft the certificate goals and learning outcomes (in consultation with the PAC) to align with student and industry needs

The certificate title includes Finance but is more focused on developing competencies for the Accounting profession	Consider removing Finance from the certificate name
Industry trends indicate that rapidly emerging technological change will contribute to professional evolution. This will and create the need for students to be equipped with the right skills for employment or practitioners who need to upskill	Create a functioning Program Advisory Council (PAC) to inform program development and maintain currency and quality

2. Discontinuation – Certificate in Accounting - Finance

Introduction:

The Certificate in **Accounting-Finance** has been offered through The G. Raymond Chang School in collaboration with the School of Accounting for more than 15 years. Although it is a successful program, the development of four new certificates in accounting will render it redundant. Since the courses in the Accounting-Finance certificate will be incorporated into the new accounting certificates currently in development, we are proposing that the certificate be discontinued.

Rationale for discontinuation:

The courses contained in the Accounting-Finance Certificate will be included in one of four new Certificate programs launching in Fall, 2022:

- Certificate in Foundations for Accounting
- Certificate in Intermediate Accounting I
- Certificate in Intermediate Accounting II
- Certificate in Advanced Accounting

Existing certificate structure: Eight courses (6 required and 2 electives).

Required Courses:

COURSE	PREREQUISITES
CACC 110 Financial Accounting	None
CACC 410 Management Accounting	CACC 110
CACC 414 Intermediate Accounting I	CACC 410 or CACC 333
CACC 514 Intermediate Accounting II	CACC 414
CFIN 300 Managerial Finance I	CACC 100 or CACC110 AFA 100 Antirequisites AFF 210, CECN 320, HTA 602
CFIN 401 Managerial Finance II	CFIN 300 or AFF 210 or CECN 320 or HTA 602 Antirequisite AFF 310

Elective Courses:

COURSE	PREREQUISITES
CACC 504 Accounting Cases and Concepts I	CACC 514 (corequisite)
CACC 521 Auditing	CACC 514
CACC 522 Taxation for Managers and Financial Planners	CACC 110
CFIN 502 Personal Financial Planning	Prerequisite: CFIN 300 or HTA 602 or AFF 210 Antirequisite: AFF 502
CITM 102 Business Information Systems I	Antirequisites: CITM 100, ITM 101, ITM 277
CLAW 122 Business Law	None
CQMS 210 Applied Statistics or Business	Antirequisites: CQMS 202, QMS 230

Completion plan for current students

If approved, the discontinuation of the certificate would take effect in **Fall 2022**, with the last admit term in the certificate being Spring 2022.

Students would receive a clear and comprehensive communication informing them about the discontinuation, their options for completing the certificate program and a schedule for relevant course offerings so that they can plan accordingly.

Student transfer requests

It is further recommended that students who wish to transfer to one of the new accounting certificate programs from the discontinued 8 course program, and who have completed more than 50% of courses, be granted an exemption from the rule that they must register prior to completing 50% of the new program. It is noted that students who have completed less than 50% of courses required in a new certificate program can transfer and still meet the 50% rule without having to request an exception.

3. Discontinuation – Certificate in Advanced Accounting

Introduction:

The Certificate in **Advanced Accounting** has been offered through The G. Raymond Chang School in collaboration with the School of Accounting since 2016. The Advanced Accounting certificate was introduced as a complement to the certificate in Accounting-Finance in order to provide adult learners with a more complete pathway to attaining the CPA PEP prerequisites. Since the courses in this certificate will be incorporated into the new accounting certificates currently in development, we are proposing that the certificate be discontinued.

Rationale for discontinuation:

The courses contained in the Advanced Accounting Certificate will be included in one of four new Certificate programs launching in Fall 2022:

- Certificate in Foundations for Accounting
- Certificate in Intermediate Accounting I
- Certificate in Intermediate Accounting II
- Certificate in Advanced Accounting

Existing certificate structure: Six courses (6 required).

Required Courses:

COURSE	PREREQUISITES
CACC 703 Advanced Financial Accounting	Prerequisites: CACC 504 and CACC 514
CACC 742 Canadian Business Taxation I	Prerequisites: CACC 514
CACC 801 Intermediate Cost and Management Accounting	Prerequisite: CACC 414
CACC 842 Canadian Business Taxation II	Prerequisite: CACC 742
CACC 696 Accounting Information Systems	Prerequisite: CITM 102
CLAW 603 Advanced Business Law	Prerequisite: CLAW 122

Completion plan for current students

If approved, the discontinuation of the certificate would take effect in **Fall 2022**, with the last admit term in the certificate being Spring 2022.

Students would receive a clear and comprehensive communication informing them about the discontinuation, their options for completing the certificate program and a schedule for relevant course offerings so that they can plan accordingly.

Student transfer requests

It is further recommended that students who wish to transfer to one of the new accounting certificate programs from the discontinued 6 course program, and who have completed more than 50% of courses, be granted an exemption from the rule that they must register prior to completing 50% of the new program. It is noted that students who have completed less than 50% of courses required in a new certificate program can transfer and still meet the 50% rule without having to request an exception.

4. Proposal – Four New Accounting Certificates: Foundations in Accounting, Intermediate Accounting I, Intermediate Accounting II, Advanced Accounting

Executive Summary

The primary goal of the proposed 4 certificates in accounting is to provide adult learners with programs that support their pursuit of the Chartered Professional Accountants (CPA) designation. In total, the certificate series will consist of 19 courses from the areas of accounting, finance, business and economics, offered by the Ted Rogers School of Business Management and the Faculty of Arts through the G. Raymond Chang School of Continuing Education.

Background

The current Certificate in Accounting-Finance is a longstanding 8-course certificate offered by the Chang School in collaboration with the School of Accounting-Finance (SAF) at the Ted Rogers School of Management (TRSM). While many iterative changes and improvements have been made to the individual certificate courses over the course of its life-cycle, within the past 15 years, the first formal certificate review was completed just recently in January 2022.

The Certificate in Accounting-Finance is financially viable and ranks high in drawing certificate student registrations and course enrollments at the Chang School. It attracts a diverse student population and prepares them for careers in a profession with favourable employment prospects. Delivery format, the frequency of course scheduling and OSAP eligibility enhance accessibility of the certificate courses to the target audience. Student feedback (collected via student and alumni surveys conducted since 2019) shows a high level of satisfaction with the offering (as reflected by the propensity to recommend the certificate to others). Most of the courses in the certificate are approved by the Chartered Professional Accountants of Canada (CPA) as prerequisites for their Professional Education Program (CPA PEP). While students enrolled in the certificate have a range of professional and learning goals, most students have indicated that they have plans to pursue the CPA designation.

An analysis of competitor programs has revealed that other institutions offer the CPA prerequisites through fewer courses. Their courses align more directly with the required CPA subject area competency map and this enables efficient completion of the prerequisites and a clearer pathway to the credential. Feedback from our students has suggested that closer alignment to the CPA competency map is preferable.

Recommendations emerging from the review were:

1. Explore ways to optimize alignment to CPA competencies (CPA PEP prerequisite subject areas)
2. Explore the development of an alternate certificate model/s with less courses per certificate to enhance student motivation to graduate
3. Delete courses from the certificate that demonstrate low uptake and are not approved as CPA PEP prerequisite courses
4. Consider removing Finance from the certificate name
5. Create a functioning Program Advisory Council (PAC) to inform program development and maintain currency and quality
6. Update certificate goals and learning outcomes (in consultation with the PAC) to align with student and industry needs

To address the review findings and recommendations, The Chang School engaged with the Accounting Curriculum Committee at the SAF and formed a new Program Advisory Council (PAC). Review findings and subsequent discussions with the relevant committees have led to the submission of this proposal.

Certificate Goals and Ryerson Mission

The primary goal of this proposed certificate series is to support adult learners who are working towards accreditation with the Chartered Professional Accountants (CPA). Accordingly, the courses that comprise the certificates correspond directly to CPA preparatory curriculum requirements.

Some of the courses are also used by undergraduates pursuing a minor in Accounting or Finance through the Ted Rogers School of Business Management. The courses are not applicable to the School of

Accounting and Finance (SAF) major. The CPA accepts all courses in these certificates towards completion of the required preparatory courses.

Upon completion of the CPA preparatory courses, students may apply to the CPA PEP program. Therefore, the proposed four certificates in accounting serve as an integral step on the pathway to CPA accreditation.

Curriculum Structure Overview of the Four certificates in Accounting

Level 1 Certificate in Foundations for Accounting	Level 2 Certificate in Intermediate Accounting I	Level 3 Certificate in Intermediate Accounting II	Level 4 Certificate in Advanced Accounting
CACC110 CLAW122 CECN210 CQMS210	CACC410 CFIN300 CLAW603 CITM102	CACC414 CFIN401 CACC514 CACC504 CACC801	CACC703 CACC521 CACC742 CACC842 CACC696* CBUS800

*Pending formal approval by the accounting department, CACC696 is a new undergraduate course that will become available in 2023-24.

Students working towards completing the CPA preparatory courses can do so by taking individual courses either through Ryerson or from the CPA. However, there are advantages in including the courses as part of a certificate. The value proposition around the certificates is clearly defined. The certificates enable:

- The completion of prerequisite coursework for entry to the CPA PEP the program as the courses are accredited by the Chartered Professional Accountants of Ontario (CPA Ontario)
- Access to financial aid through OSAP, since the courses are university degree credit and are offered on a regular basis
- The completion of post-secondary level credentials before receiving the CPA designation
- A clear pathway to encourage progression and track achievement
- Logical and sequential knowledge acquisition and effective progression of learning

The proposed 4 certificates align with Ryerson’s core mission of serving a societal need by providing career-related and professional education. It builds on existing curriculum offered by the Ted Rogers School of Management and the Faculty of Arts.

The overarching goals of the 4-certificate series in accounting is to provide adult learners with the following:

- A pathway for students in meeting the competencies required for the CPA designation.
- A solid understanding of current accounting principles and practices in Canada required for entry-level positions.
- Technical skills in managerial accounting, finance, taxation, and using accounting information systems.
- Enabling skills as outlined for subject areas by the CPA

Target Audience

The four certificates in accounting are relevant to the following individuals:

- College or university graduates of non-accounting fields (or those who possess an Accounting Minor and want to pursue the CPA designation)
- Newcomers to Canada who are seeking a Canadian university credential in accounting to build their resumé or to enter the accounting field in Canada
- Business owners or managers who want to enhance their accounting acumen
- Working professionals with the goal of pivoting their career into accounting

Curriculum Structure and Learning Outcomes

The certificate series will consist of 4 individual certificates which progress in level from introductory to advanced (1- 4). The four certificates and the learning goals outcomes for each are as follows:

Level 1. Foundations for Accounting (4 courses)

Required Courses	Alignment to CPA PEP competencies delivered
CACC 110 Financial Accounting	Financial Reporting
CLAW 122 Business Law	Other General Business Topics
CECN 210 Understanding Economics	Other General Business Topics
CQMS 210 Applied Statistics for Business	Other General Business Topics

Goals for Level 1	To provide adult learners with: <ul style="list-style-type: none"> ● A fundamental understanding of current accounting standards and procedures ● An exposure to basic knowledge in general areas relevant to business practice
Value Proposition for Level 1	The certificate will be of interest to learners who wish to: <ul style="list-style-type: none"> ● Take courses accredited by the CPA and count towards the association's PEP prerequisites ● Acquire foundational accounting methods and current business knowledge that can be applied immediately to a business or entry level job ● Seek employment in entry-level accounting roles such as Bookkeeper, Accounting Technician, Accounting Clerk

Level 2. Certificate in Intermediate Accounting I (4 courses)

Required Courses	Alignment to CPA PEP competencies delivered
CACC 410 Management Accounting	Management Accounting

CLAW 603 Advanced Business Law	Other General Business Topics
CFIN 300 Managerial Finance 1	Finance
CITM 102 Business Information Systems 1	Data Analytics and Information Systems

Goals for Level 2	To provide adult learners with: <ul style="list-style-type: none"> • Technical and enabling competencies required by CPAs, such as Management Accounting, Finance, Other General Business Topics and Data Analytics and Information Systems
Value Proposition for Level 2	The certificate will be of interest to learners who wish to: <ul style="list-style-type: none"> • Take courses accredited by the CPA and count towards the association’s PEP prerequisite • Follow a curriculum structure that keeps their studies on track towards the CPA designation • Build on financial and managerial competence and business confidence in relevant practice areas • Seek employment in roles such as Bookkeeper, Accounting Technician, Accounting Clerk, Accounts Receivable or Accounts Payable Clerk, and Accounting Assistant.

Level 3. Certificate in Intermediate Accounting II (5 courses)

Required Courses	Alignment to CPA PEP competencies delivered
CACC 414 Intermediate Accounting 1	Financial Reporting
CFIN 401 Managerial Finance 2	Finance
CACC 514 Intermediate Accounting 2	Financial Reporting
CACC 504 Accounting Cases and Concepts	Financial Reporting
CACC 801 Intermediate Cost and Management Accounting	Management Accounting

Goals for Level 3	To provide adult learners with: <ul style="list-style-type: none"> • Technical and enabling competencies required by CPAs, such as Financial Reporting, Finance and Management Accounting at an intermediate level • Communication, critical thinking and problem-solving skills through extensive use of case analysis and writing strategies
Value Proposition for Level 3	The certificate will be of interest to learners who wish to: <ul style="list-style-type: none"> • Take courses accredited by the CPA and count towards the association’s PEP prerequisite

	<ul style="list-style-type: none"> ● Follow a curriculum structure that keeps their studies on track towards the CPA designation ● Build their understanding of financial information and accounting practices ● Expand accounting applications to a wide variety of business and financial settings ● Acquire knowledge equivalent to a college diploma ● Seek employment in roles such as Bookkeeper, Accounting Technician, Accounting Clerk, Accounts Receivable or Accounts Payable Clerk, and Accounting Assistant.
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Level 4. Certificate in Advanced Accounting (6 courses)

Required Courses	Alignment to CPA PEP competencies delivered
CACC 703 Advanced Financial Accounting	Financial Reporting
CACC 521 Auditing	Audit and Assurance
CACC 742 Canadian Taxation 1	Taxation
CACC 842 Canadian Taxation 2	Taxation
CACC 696 Accounting Info. Systems*	Data Analytics and Information Systems
CBUS 800 Strategic Management	Management and Governance

*Pending formal approval by the accounting department, CACC696 is a new undergraduate course that will become available in 2023-24.

Goals for Level 4	<p>To provide adult learners with:</p> <ul style="list-style-type: none"> ● Technical and enabling competencies required by CPAs, such as Financial Reporting, Audit and Assurance, Taxation, Management and Governance and Data Analytics and Information Systems ● Skills necessary to evaluate accounting and reporting methods, examine audit processes ● A detailed overview of the federal income tax laws concerning income and taxes payable of individuals, corporations, and trusts, as well as practical tax planning considerations ● An understanding of tax compliance obligations ● Develop the analytical skills necessary to evaluate accounting and reporting methods
Value Proposition for Level 4	<p>The certificate will be of interest to learners who wish to:</p> <ul style="list-style-type: none"> ● Take courses accredited by the CPA and count towards the association’s PEP prerequisite

	<ul style="list-style-type: none"> ● Complete the final prerequisite courses towards the CPA PEP program ● Build a comprehensive understanding financial information and accounting practices ● Progress/apply to intermediate or more senior level employment opportunities that require a diploma or certificate in Accounting from a post-secondary institution. ● Expand accounting applications to a wide variety of business and financial settings ● Apply tax concepts to routine situations ● Seek employment in roles such as Accounting (Entry Level), Accounting Clerk, Junior Accounting Analyst, Staff Accountant, Tax Specialist, Accounting Analyst, Internal or External Auditor
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More detailed learning outcomes for each course are provided in the Course Outlines (see Appendix A).

Course Description and Prerequisite Table

The proposed certificate courses have prerequisites as indicated in the tables below.

Level 1. Foundations for Accounting (4 courses)

Courses	Course Description	Prerequisite
CACC 110 Financial Accounting	Designed to prepare students for an Accounting Minor, this course will introduce you to the interesting and challenging field of Financial Accounting. This is a language designed to capture, summarize, and communicate the economic facts about an organization in a set of financial statements and the related descriptive notes. The principles of accounting and reporting to various users that are external to the organization and emphasize the decision-makers or users. Financial statement content and the uses and limitations of this information.	None
CLAW 122 Business Law	This is an introductory course, prerequisite to further studies in law. The course begins with a discussion of the nature and sources of law and an examination of the court system in Canada, the Charter of Rights and Freedoms, and a survey of the more important aspects of the law of torts. The	None

	<p>course then concentrates on the legal requirements for the formation of a valid contract. Other major contract law topics include interpretation, privity, discharge, breach, and special types of contracts. Selected cases will be examined.</p>	
CECN 210* Understanding Economics	<p>This lower level liberal studies course introduces the economic way of thinking. Economists seek objective ways to analyse how humans act in social settings. Economic models or theories are used to understand economic behaviour. The course uses basic supply and demand theory to analyze a range of economic issues such as how university fees are set or the effect of the minimum wage on unemployment. At a microeconomic level, students will learn how to analyse markets under different structures such as perfect competition and monopoly. At a macroeconomic level, students will learn how to analyse how the Canadian economy works and how the major problems of unemployment and inflation can be dealt with. Other topics covered are fiscal and monetary policy and the overall role of government in the economy.</p>	None
CQMS 210 Applied Statistics for Business	<p>This course introduces both descriptive and inferential statistics. Students learn to use descriptive data, in both numeric and graphic formats, as well as inferential statistics to support managerial decisions in applied business contexts. Topics include grouped frequency distribution, measures of central tendency and variability, probability theory, sampling distribution, confidence intervals, hypothesis testing, and linear and multiple regression.</p>	None

*Note that as of Jan. 2022, CECN 210 has been approved by the CPA as a course that will cover the Economics (Other Business enabling subject area) competency. This is not yet reflected in the list of Chang School courses accredited by the CPA

Level 2. Certificate in Intermediate Accounting I (4 courses)

Courses	Course Description	Prerequisite
CACC 410 Management Accounting	Designed to prepare students for an Accounting Minor, this course introduces the basic management accounting concepts to business students. Topics covered provide a good balance between the concepts and procedures used in the accumulation and use of data by management accountants to facilitate planning and decision making. Cost behaviour and its implications for planning, reporting to management and control is stressed.	CACC 110
CLAW 603 Advanced Business Law	This course begins with an examination of the law governing business relationships and forms of business organizations, including the legal requirements for the formation of the corporation and partnership. Special contractual relationships affecting business are studied followed by an examination of the law pertaining to secured transactions and bankruptcy procedures. The course also surveys the law of real property, including the leasehold interest and mortgages. Relevant statutes and selected cases are examined.	CLAW 122
CFIN 300 Managerial Finance 1	Students are introduced to the major concepts in finance and investments which are the time value of money, discounted cash flows, and risk and return. Students are given a thorough introduction to the mathematics of asset valuation. In addition, students learn how individual investors assess and reduce the risk associated with their investment decisions. The course examines how firms make investment decisions. The investment decision allocates scarce resources to projects in the firm, and involves financial forecasting, asset valuation, capital budgeting, risk management, working capital	CACC 110

	management and performance assessment.	
CITM 102 Business Information Systems 1	This course introduces students to the role of information technology in the modern enterprise with a focus on applying technology to achieve and maintain competitive advantage. The main premise is the introduction of information technology infrastructure and services to support operational efficiency, decision-making, and digital business. Emphasis is on the development of critical thinking and analytical skills through real-life applications and case studies. During the lab component, students gain hands-on experience with Microsoft Excel.	None

Level 3. Certificate in Intermediate Accounting II (5 courses)

Courses	Course Description	Prerequisite
CACC 414 Intermediate Accounting 1	This course reviews and embellishes the financial reporting requirements as presented in generally accepted accounting principles (GAAP). The topics will include revenue recognition and the asset side of the balance sheet. Students should expect to use and expand on the application of all the generally accepted accounting principles and concepts covered in introductory financial and management accounting courses. To be successful in the course, students should be prepared to work independently outside the class sessions.	CACC 410
CFIN 401 Managerial Finance 2	This course builds on the material in Finance 300. Students learn how firms assess risk when making investment decisions. Students also examine how firms decide to finance projects they assess as being worthwhile. This decision involves capital structure, dividend policy, financial instruments, risk-return trade-offs, financial planning and the cost of capital. In addition, students are	CFIN 300

	introduced to derivatives, and their uses in investments, risk-management, and capital structure. Firm management in an international context is integrated into the topics covered in the course.	
CACC 514 Intermediate Accounting 2	This course continues from the CACC 414 coverage of the financial reporting requirements as presented in generally accepted accounting principles. The topics will include liabilities, share capital transactions, earnings per share calculations, adjustments, correction of errors, income taxes, leases, pensions and financial statement analysis. Students should expect to use and expand on the application of generally accepted accounting principles and concepts covered in CACC 414 and introductory financial and management accounting courses. To be successful in the course, students should be prepared to work independently outside the class sessions.	CFIN 414, CACC 504 corequisite
CACC 504 Accounting Cases and Concepts	This course begins with a conceptual review of accounting principles, and reviews issues studied in earlier courses such as revenue recognition, the treatment of research and development cost, and insolvency. Students are also introduced to accounting in the not-for-profit sector, and issues in international accounting. This course emphasizes the role of communication in the accounting profession. Critical thinking and problem-solving skills are developed through extensive use of case analysis.	CACC 514 (corequisite)
CACC 801 Intermediate Cost and Management Accounting	This course will provide a comprehensive study of costing for decision making, planning and performance evaluation. Emphasis will be placed on cost allocation methods, capital budgeting and transfer pricing.	CACC 414

Level 4. Certificate in Advanced Accounting (6 courses)

Courses	Course Description	Prerequisite
CACC 703 Advanced Financial Accounting	This course is designed for students pursuing a professional accounting designation, and covers the more complex aspects of financial accounting. The course includes coverage of Long-Term Intercorporate Investments, Consolidations, Foreign Currency Translations and Reporting of Foreign Operations in accordance with International Financial Reporting Standards (IFRS). Accounting Standards for Private Enterprises (ASPE) relating to course topics will also be reviewed. A case analysis approach is emphasized.	CACC 514 and 504
CACC 521 Auditing	An introduction to the auditing standards and procedures developed by the accounting profession. Topics covered include: auditing standards, the audit report, materiality, risk, gathering of evidence and sampling. The course is useful to the student who is interested in the profession of auditing or developing a manager's understanding of auditing.	CACC 514
CACC 742 Canadian Taxation 1	A detailed examination of the federal income tax law concerning income of individuals from employment, business and property. The implementation of the law and its effects, and issues in tax planning and other practical matters are explored, as well as legal interpretations of the law, through examination of a wide variety of practical problems and cases. Related rules in the Goods and Services Tax Act are also examined. Students should have a knowledge of accounting and business law, and be prepared to spend a minimum of two hours outside of class for every hour in class. (Formerly first half of ACC 042.)	CACC 514
CACC 842 Canadian Taxation 2	A further examination of the federal income tax law, dealing with its implementation and effects on both large	CACC 742

	and small corporations, their shareholders, and their business and financial decisions. Practical tax planning issues are explored, as well as interpretations of the law, in a wide variety of problems and cases. Taxation of partnerships, trusts, and the Goods and Services Tax are also examined. (Formerly second half of ACC 042.)	
CACC 696 Accounting Info. Systems*	Most people are affected by computer-based systems. The students will be involved in the management of computing resources and information such that business problems can be dealt with effectively. This course will focus on the use of information and computing resources in the business community. This will enable students to create their own business information systems or participate with others in the analysis and design of solutions for corporate business problems.	CITM 102
CBUS 800 Strategic Management	Strategic Management is a challenging and exciting course. The problems and issues of strategy management cover the whole spectrum of business. Weighing the pros and cons of strategy requires a total enterprise perspective and a talent for judging how all of the relevant facts add up. To keep the discussions down to earth, each week real companies will be examined. In addition, the course uses some experiential exercises which may include a simulation.	CFIN 401 or Business Management special student

*Pending formal approval by the accounting department, CACC696 is a new undergraduate course that will become available in 2023-24.

Equity, Diversity, and Inclusion

Courses offered through The Chang School typically attract a diverse student body of full-time undergraduates and part-time adult learners. Continuing education adult learners are usually working, often over the age of 30, and have diverse cultural backgrounds. Many courses are attractive to internationally educated students, and anecdotal evidence from our academic advising for the existing Certificate in Accounting-Finance indicates that several students come with this background.

This diversity of student type enhances the learning experience of all students, as it provides opportunities for working professionals and undergraduates to learn from one another and exchange perspectives.

Accounting courses are offered both in-class and online to appeal to various learning preferences of our students. In recent years, a priority has been to improve the student experience with regard to creating accessible, inclusive and engaging learning environments for the diverse student population. To help reduce barriers to participation, the majority of courses in the proposed certificates are available online, providing access for people who cannot attend classroom courses for a variety of reasons (for example, they may have a work schedule that conflicts or live remotely). During the pandemic, some of the accounting courses were virtualized. This ensured that students who needed the in-class only courses were still able to complete them in a time where classroom delivery was paused. In addition, online courses developed by The Chang School are AODA compliant.

Recognizing that our students are diverse and come with different learning styles, the approach to designing online accounting courses in recent years has emphasized the integration of varied learning elements, and in particular, the use of multimedia (e.g. videos) and multiple opportunities to practice applying the weekly concepts. In the redevelopment of CACC414 and CACC514, curated Open Educational Resources (OERs) have been heavily incorporated into the learning path for students (rather than simply serving as an occasional supplement to the textbook). The multiple formats of OERs allows us to offer richer content in multiple formats without extra cost to the students.

In addition to exploring new approaches to online course content design, a weekly live session is held online in many of the accounting certificate courses, giving the class the opportunity to work through or review difficult concepts together with the instructor and ask questions about assigned exercises and activities. Students who require additional assistance may also take advantage of TRSM's tutoring services for select courses (CFIN300, CFIN401 and CQMS210). With these improvements, the aim has been to create a supportive learning environment to foster inclusivity and success for all students.

Development Plan

All of the courses are currently offered by the Ted Rogers School of Management or the Faculty of Arts (Department of Economics) through The G. Raymond Chang School of Continuing Education. No new curriculum needs to be developed.

The current Certificate in Accounting Finance and the Certificate in Advanced Accounting will be discontinued. A transition plan for students in these certificates will be drafted and implemented to reflect this change.

Delivery Mode

The majority of courses in the proposed certificates have been developed through Digital Education Strategies for full online delivery. A few courses that were delivered in-class only prior to the COVID-19 pandemic have recently been offered virtually (i.e. live online sessions as the main teaching method). Some of these (e.g. CECN210, CACC504) may be considered for full online development in the future. In-class offerings will be added as warranted according to student demand. If offered in the classroom format in the post-pandemic period, courses will be offered in downtown Toronto on the Ryerson campus.

Academic Management

Academic Home

The Academic Home for the four proposed accounting certificates is the Accounting Department in the Ted Rogers School of Management (TRSM). The Accounting Department is responsible for the overall academic quality of the certificate.

Governance

Standing Curriculum Committee

Following Senate Policy No. 76, the Accounting Department establishes a Curriculum Committee, consisting of RFA members, at the beginning of each academic year. This committee is responsible for all curricular changes which impact certificate courses offered through the Accounting Department. The Curriculum Committee reports to the Accounting Department's School Council, which approves or rejects the recommendations of the Curriculum Committee.

The Curriculum Committee in 2021 included:

Dr. Shadi Farshadfar, Associate Professor and Chair of Accounting

Daria Sydor, Professor

Dr. Oliver Okafor, Assistant Professor

Romi-Lee Sevel, Assistant Professor and Certificate Academic Coordinator

The Committee engaged in discussing the curriculum, courses and certificate model for the review of the Certificate in Accounting-Finance on May 7th, 2021 and July 14th, 2021. Following a discussion of CPA competencies, the target audience, competitor curriculum and models, the Curriculum Committee also provided feedback via email.

The Curriculum Committee also met on January 17th 2022 to discuss the findings of the certificate review and was consulted on various aspects of revising the certificate offerings. Based on review findings and recommendations, the Committee:

- Expressed support for a 4-certificate model, which would enable each certificate to be shorter than the current 8-course certificate in Accounting-Finance
- Supported the focus on delivering the CPA competencies
- Suggested that the 4 certificates be given a name that was reflective of the learning outcomes and level. Both level and name were deemed important for conveying progression (to encourage students towards completion) and effectively market the certificates to students and employers.
- Suggested that an overarching credential/recognition could be awarded for all 4 of the individual certificates. This was perceived as a strong incentive to encourage completion.

Program Advisory Council

The Program Advisory Council (PAC) provides input to ensure that the certificate responds to sector needs. The PAC advises on the following:

- curriculum development to help ensure that graduates possess the competencies, knowledge, and skills required by the certificate
- matters related to outside recognition, where appropriate
- current and projected demand for program graduates
- ways in which the program can most effectively meet societal needs
- promoting the program to the target audience and those in the broader community.

For many years, the Certificate in Accounting-Finance had no active Program Advisory Council specific to the certificate. Regular updates to individual courses had occurred to maintain currency and CPA

recognition. However, to inform the development of the proposed certificate series, a PAC was formed. The newly formed PAC met on January 12th 2022. The PAC members have extensive expertise in accounting and all teach accounting courses at The Chang School. The members are:

Matthew Roman, CPA, B.Com., MTax., Senior Manager, National Tax Centre, KPMG Canada

Sharlene McDevitt, CPA, CMA, B.Comm., MBA., Vice President, Treasury & Securities, J.P. Morgan Chase

Else Grech, CPA, CA, OCT, B.Comm., B.Ed., MA., Instructor, Ryerson University, University of Toronto (prior industry experience at PWC and in entrepreneurship)

Input from the January 14th Curriculum Committee meeting was shared with the PAC via email. In addition to the January 12th meeting, the PAC submitted input regarding target audience and the value proposition via email. In summary, the PAC:

- Expressed support for the 4-certificate model
- Discussed and suggested strategies for certificate progression and marketing that included clear levels, names for certificates, adoption of digital badges and microcredentials.
- Provided validation for the value proposition and certificate goals outlined in this proposal.
- Provided ideas for maintaining currency and relevancy to the evolving workplace (use of technology, sustainability, ethics, diversity and inclusion)

Accounting Curriculum Committee and PAC Committee Consensus

Discussions at the January 2022 meetings of the Curriculum Committee and the PAC indicated that both committees had clear consensus on the following points:

- The certificates be focused on preparing students for the CPA designation, and
- The certificates be shorter in length than the certificates they are replacing.

Please see Appendix B for the Accounting Curriculum Committee feedback.

Academic Coordination

The Academic Coordinator works with the Chang School and oversees many aspects of program management. The coordinator for the 4 certificates is assumed to have the following key responsibilities:

Chang School Instructor Supports

- Posting and selection process
- Instructor performance reviews
- Instructor mentorship

Program Support

- Calendar updates
- Certificate and course descriptions updates
- Certificate reviews analysis
- Promoting CNED enrolment – Certificate/Course marketing and promotions
- Program website and flyer updates

- Course development reviews

Student Support

- Participate in Information Sessions and other events
- Respond to student queries
- Evaluating students' prior learning

Admissions Policy

Admission Criteria

Eligible applicants to the four certificates must have the following:

Ontario Secondary School Diploma (OSSD) or equivalent (with 6 Grade 12 U or M credits)

OR

Mature student status

Applicants to Level 2-4 should have the appropriate prerequisite for each of the certificate courses.

Student Advising

Prospective students who are seeking to register in and complete this certificate program or have specific questions will be directed to contact the Academic Coordinator.

Registration and Graduation Requirements

Certificate Registration

Students may be registered in only one Certificate Program at any one time. To allow maximum flexibility in crediting external courses and/or courses previously taken at Ryerson, students should register in the Certificate at the beginning of their first course. Students pursuing a Certificate must formally register in the Certificate program prior to the completion of 50% of the curriculum requirements for the Certificate. For complete details on the advantages of early registration, registration deadlines, and transfer credit restrictions, all students should read the information on Registration and Graduation in Certificate Programs on The Chang School web calendar: <https://continuing.ryerson.ca/>. Students should be aware that, while they may obtain course credits prior to registration in courses in the Certificate, those courses will not count toward the student's GPA. Courses taken while formally registered in the Certificate will be calculated in the GPA for graduation purposes.

Transfer Credits

Students who have completed courses in the Certificate may be eligible for transfer credits from other programs in universities and/or colleges (up to 50% of coursework), as approved by the Certificate's Academic Coordinator. Students must be aware, however, that only those courses taken while formally registered in the Certificate will be calculated in the GPA for graduation purposes.

Graduation

In order to graduate, students must successfully complete the Certificate requirements within a time span from first enrolment to graduation that does not exceed the number of years calculated by the number of required single-term courses (or equivalent) divided by 2, plus one year. The successful completion of the defined curriculum, with a cumulative grade point average of 1.67 or higher, is required for award of the Certificate. Students must also complete and submit an Application to Graduate with a Certificate Form, prior to the appropriate deadlines (see the information on Registration and Graduation from Certificate

Programs at www.continuing.ryerson.ca). Students must register in the Certificate before they have taken 50% of the Certificate requirements (i.e., before the completion of their third course). For information regarding the courses featured in the Certificate (including date/time/fee information), please refer to the listings in the course information section of the web calendar, www.continuing.ryerson.ca.

Certificate Resources (Library Resources)

Library Resources

No additional library resources are required.

Societal Need

Alignment to Professional Designation - External Recognition

As identified earlier, the four proposed certificates include courses that support admission to the **CPA Professional Education Program**. The certificates provide a well mapped pathway to a professional credential in a field for which there are good employment prospects.

Industry/Sector Outlook

*Canadian Industrial Profile for Accounting*²⁹ provides a positive outlook for the sector. Following a generally weaker growth of Canadian business in the 2015-2017 period, new business in the country has started to grow, and with it, the demand for accounting services as well. Short-term forecast suggests robust profits, while long-term trend indicates strong profits and healthy production.

The Conference Board of Canada industry report states:

Mergers and acquisitions—Thanks to the legalization of cannabis, weaker oil prices, and the ongoing recovery of the mining sector, we expect a rise in mergers and acquisitions this year, supporting demand for specialized accounting services.

Labour demand—The number of job vacancies for auditors, accountants, and investment professionals has trended upward since 2015, increasing labour pressures for accounting services.

Top companies in this industry (in 2017 based on revenues) were Deloitte, PwC, KPMG and Ernst & Young. Ontario is positioned very well for educational and training provisions related to accounting needs – over 41% of GDP in accounting services are generated in the province.

Labour Market Information

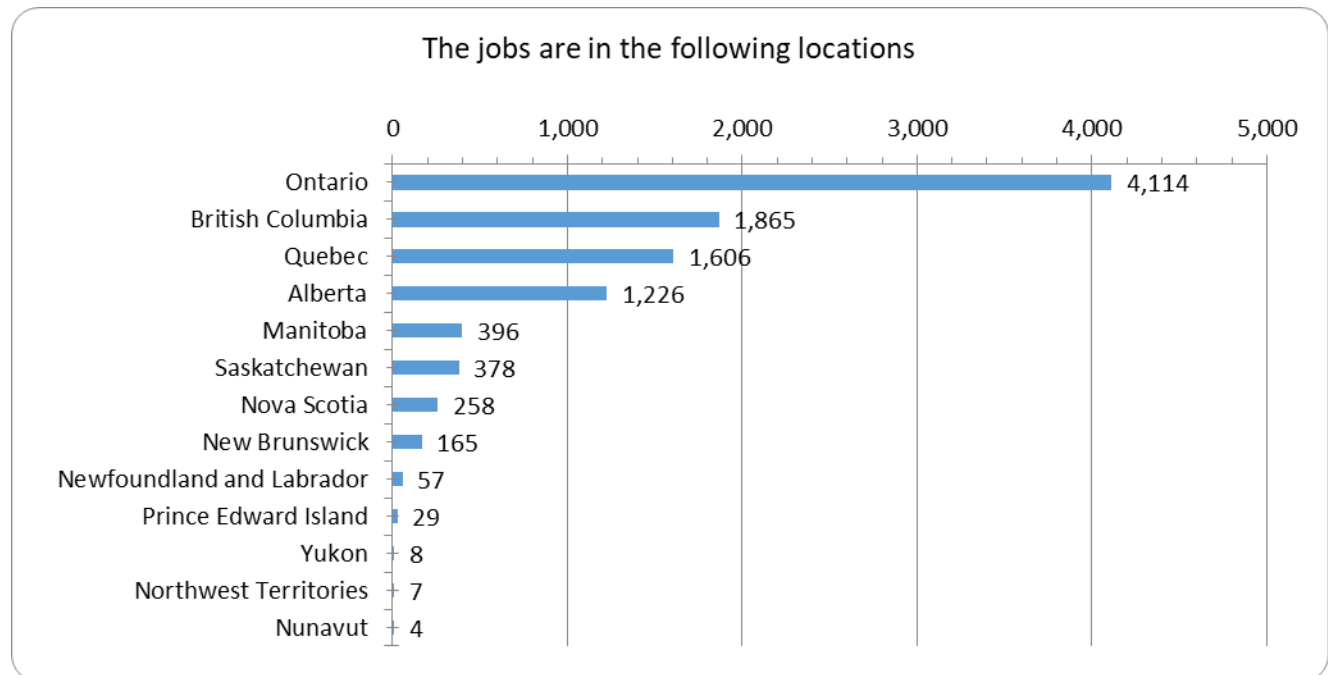
To obtain real-time snapshot of jobs available for potential graduates of this program, a search was done in 2020 on Burning Glass Insights/Jobs³⁰ a real-time jobs database for the Financial Auditors and Accountants (NOC 1111). The following findings describe the job location, job titles, salaries and job postings.

In Canada the majority of the jobs are located in Ontario, British Columbia and Quebec and the employment outlook is positive.

²⁹Canadian Industrial Profile: Accounting—2019. Ottawa: The Conference Board of Canada, 2019.

³⁰Burning Glass Insights/Jobs database. [Retrieved April 2, 2020]. Available from: <https://labourinsight.burning-glass.com>

Figure 1: Geographic location of Accounting jobs in Canada



Industry sectors seeking employees were mainly identified from accounting firms, consultancies and financial institutions (Figure 2). Note that accounting and management consultancies fall under Professional, Scientific and Technical Services.

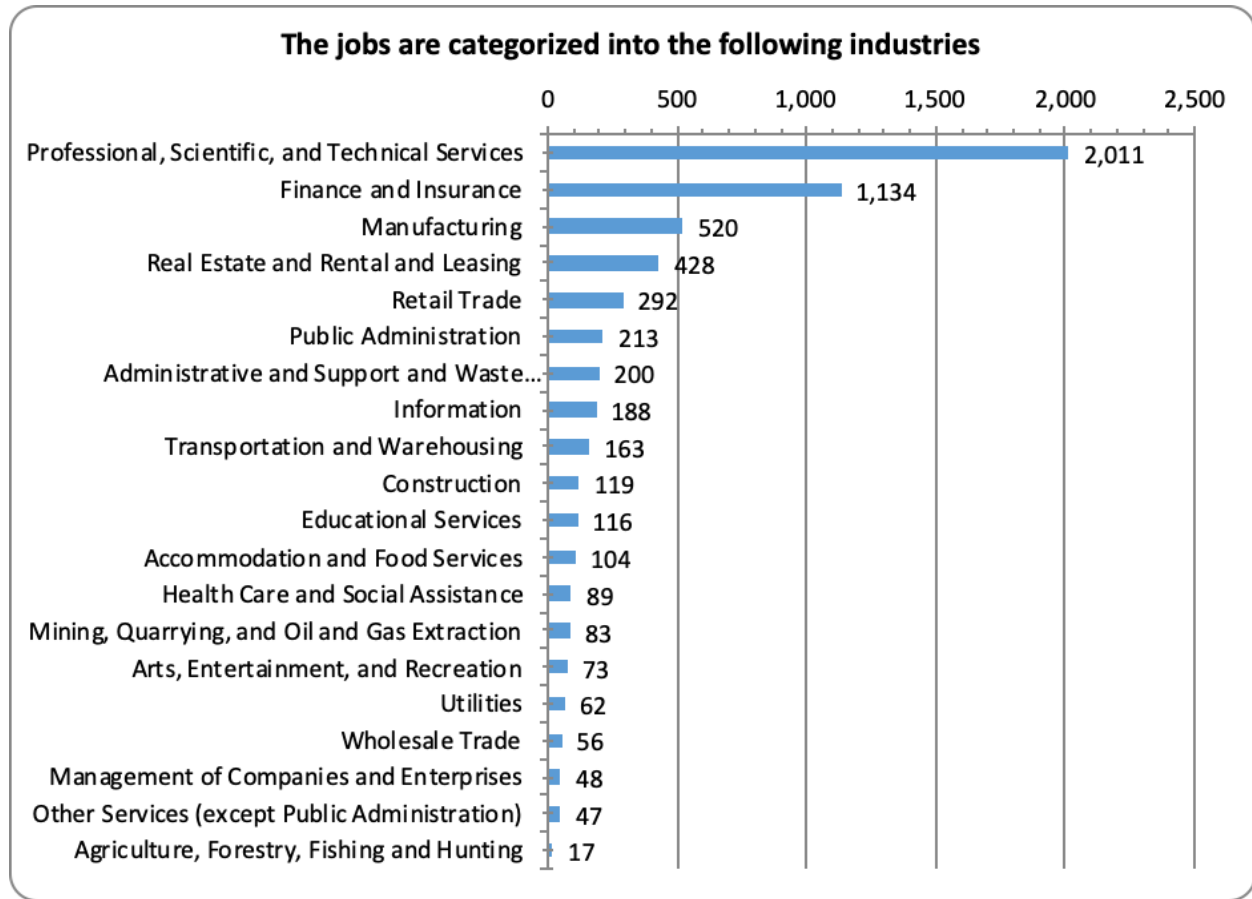
The top job titles that are in demand include: Accountant (including Senior and Junior), Internal auditor; Financial Accountant; Staff Accountant; Project Accountant; Audit Manager and Tax Analyst.

The most typical salary (when specified) suggests professionals are earning between \$50,000 and \$74,999, indicating that students will be preparing for a career that potentially has a reasonable wage.

Educational requirements: A bachelor's degree was most requested.

In Ontario, Accounting is a regulated profession. A professional credential is required for practice. When specified in the job postings, a CPA professional designation is most frequently requested. This suggests that the certificate fulfills the need for preparing learners for practice in an in-demand professional field.

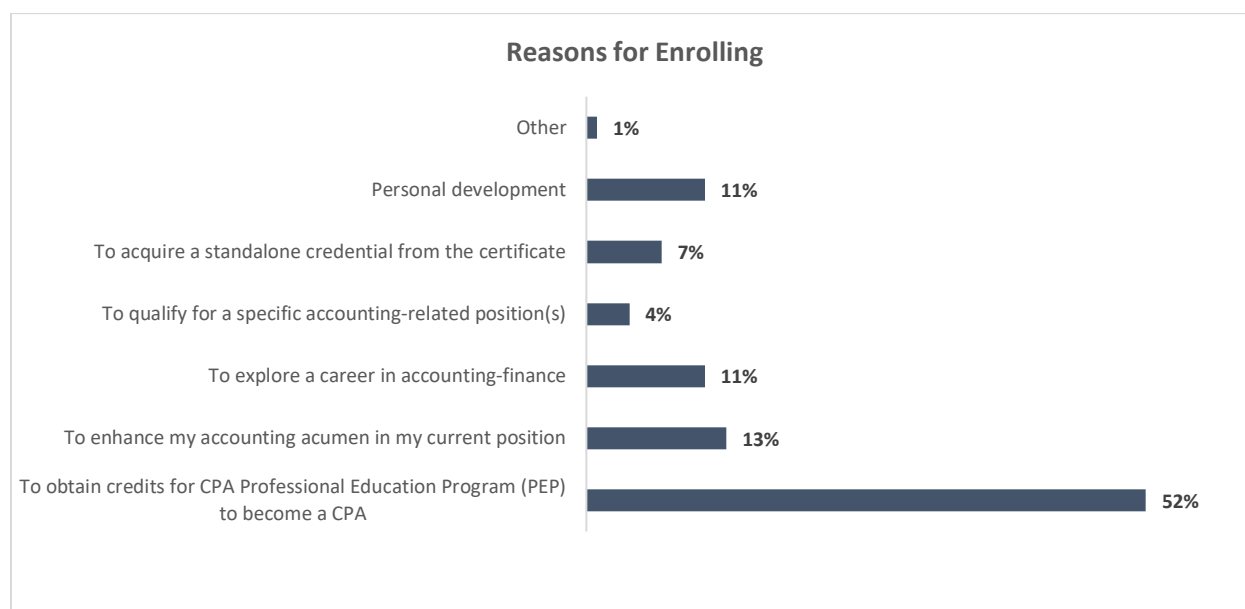
Figure 2 Sectors posting Accounting Jobs



Current Student Motivation for Taking the Certificate

Obtaining credits towards a CPA qualification was the main reason (note that respondents could choose more than one reason) for enrolling in the accounting courses for current students (52%). See Figure 3 below. Aligning the certificates to those on the CPA track meets the goals of these individuals.

Figure 3. Reasons for enrolling in the Accounting-Finance Certificate



Source: May 2020 Survey of certificate students (n=67).

Comparator Certificate Programs

There are several comparator programs in accounting and finance within Toronto/GTA and Ontario. Many programs are also offered nation-wide, and some of these are aligned with the professional body requirements (CPA). The most likely contenders for the proposed Chang School certificates in accounting are the continuing studies programs available at York University and the University of Toronto (U of T).

Accounting programs comparable to the Chang School option are largely university-based. The comparable certificate analysis will therefore focus on the two primary comparators in which The Chang School’s program most closely aligns with in terms of program objective, structure, output, delivery and target audience. A full comparator scan can be found in Appendix C.

Both primary competitor programs offer courses that meet the CPA required competencies. A key difference between these competitor programs and the proposed certificate programs at the Chang School is that there are fewer courses required (and thereby, a lesser cost and time investment) to meet the CPA course requirements. The table below provides a comparative overview between CPA Ontario course offerings at U of T, York University and The Chang School.

Note that when students and alumni were asked if they had considered or taken courses towards the CPA elsewhere, CPA Ontario was most mentioned.

Comparator Programs – Number of courses required to meet prerequisites for the CPA PEP

CPA Ontario	The Chang School – proposed certificates	UofT Continuing Studies	York Continuing Studies
	4 certificates (4 courses; 4 courses; 5 courses; 6 courses)	5 certificates (3 courses; 5 courses; 4 courses; 3 courses; 4 courses)	2 certificates (14 CPA Preparatory courses + Business Communication and

14 courses	19 courses in total	19 courses in total	applied capstone in each certificate) 17 courses in total
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Financial Viability

The proposed certificates are essentially derived from the Certificate in Accounting-Finance and the certificate in Advanced Accounting.

The certificate in Accounting-Finance was reviewed recently and assessed for financial viability by the Finance Strategies and Planning Group. The assessment examined certificate student enrollment, revenue generation and certificate profitability over a 5-year period (2014-15 to 2018-19). Analysis conducted by the group was captured in a report generated in May 2020.

In summary:

- The analysis showed that over a 5-year period the certificate generated healthy tuition revenue
- In terms of enrollment numbers, the certificate is ranked 7th out of all (84) Chang School Certificates by the number of certificate student enrollments. This has been consistent over the 5-year period examined.
- The financial viability report provided concludes that the *“Certificate enjoys strong, continued enrollments and revenues. In our opinion, this certificate was and is financially viable.”*

The certificate in Advanced Accounting is a more recently developed offering (2016). The certificate has not had a dedicated budget for marketing and any promotion has been limited to the website. However, the courses are well subscribed to by students of all careers types and are therefore financially viable when (see the table below).

Total student enrollment in the courses in the Certificate in Advanced Accounting for the past 3 years.

Courses	Enrollment* for Fiscal Year		
	2018/19	20/19/20	2020/21
CACC 703	81	46	33
CACC 742	42	29	29
CACC 801	31	34	51
CACC 842	41	27	33
CITM 696	29	33	4
CLAW 603	175	181	240

*' Enrollment for students of all career types (continuing education, full-time and part-time)

Incorporation of these advanced courses into the proposed certificate series will enhance opportunities for promotion and provide a pathway to motivate students to pursue registration and motivate completion.

Conclusion

It is perceived that the development of these four proposed certificates to replace the Certificate in Accounting-Finance and the Certificate in Advanced Accounting is needed to stay competitive in the continuing education landscape. The proposed certificates in accounting will be offered by the Accounting department at TRSM and through the Chang School. They will prepare learners to complete the prerequisites to enter the CPA Prep program. Offering the courses within a certificate will benefit adult CE students by providing a relevant credential, as well as access to university resources and OSAP.

Recommendation

Having satisfied itself of the merit of this proposal, the Academic Standards Committee recommends: ***that Senate approve this review, discontinuation, and new proposal for certificates in Accounting/Finance – The Chang School.***

D. CHANG SCHOOL - Proposal for a new Full Stack Developer certificate

Chang School Certificate in Full Stack Developer – Proposal (New)

The focus of the new Certificate is to upskill job seekers and existing workers across public and private sectors, who do not necessarily have a degree in Computer Science. In terms of gainful employment and earnings well beyond a living wage, one of the fastest growing labour markets with a shortage of workers in Canada is for Full Stack Developers. Full Stack Developers are, and over the next 10 years will continue to be, in-demand across all segments and at all levels of job positions. The Certificate's proposed curriculum is comprised of four required courses, all of which emphasize workplace scenario projects to hone professional communication, project management and digital Full Stack developer skills. The academic home for this Certificate is the Department of Computer Science. That said, the trans-disciplinary courses included in the curriculum are existing courses that are taught at The Chang School, in collaboration with the Faculty of Science, the Faculty of Engineering and Architectural Science, and Professional Communication at The Creative School.

History of Certificate offerings with the Department of Computer Science

The Department of Computer Science has a long history of collaboration with The Chang School. Successful programs include the Certificate in Cybersecurity and Digital Forensics (updated in 2020), Certificate in Computer Coding (updated in 2022), and the Certificate in Emergency Management, Threat and Response Planning (updated in 2021). That said, the trans-disciplinary courses included in the curriculum are existing courses taught at The Chang School, in collaboration with the Faculty of Science, the Faculty of Engineering and Architectural Science, and Professional Communication at The Chang School.

The proposed, new certificate has a number of strengths. The skills developed through the four, certificate-credit courses in this certificate fulfil an important societal need. Increasingly, organizations of varying sizes, and across sectors, seek to employ individuals who are able to demonstrate their possession of the triad of "skill clusters" that employers emphasize they need in every Full Stack Developer they employ; that is, comprehensive technical skills to build a responsive website from end-to-end, proficiency in professional communication and agile project management skills. Through employer consultations and extensive market research, it is clear that a market need for a compact, hands-on, university-level certificate credential exists. The proposed 4-course, certificate-credit, fully online Certificate in Full Stack Developer is positioned to address current, and projected, labour market-driven shortages and existing employer needs.

The four-course Certificate is flexible in that no courses have prerequisites; continuous learners may take the courses in any order and combination, or they may “fast track” their learning by taking all four courses concurrently or within a calendar year if they wish.

Certificate Goals

The Department of Computer Science, in collaboration with The Chang School, is proposing a four-course Certificate curriculum that is designed to meet the need for a new generation of professionals who are equipped with the advanced technical and analytical skills that are in demand in Canada’s and the world’s Full Stack Developers and allied roles. The proposed certificate provides students with the most critically important and current best practices, as well as the applied knowledge and skills in the field. To integrate learnings across the Certificate’s three curricular knowledge foci, Certificate candidates in CKCS149 Programming Python and CKCS145 Full Stack Developer technical courses and in CTEC210 Fundamentals of Project Management course will share their real-work completed projects by presenting them to guest panelists who are communication and project management practitioners and instructors together with employers in each term to receive insights that will help them be well-rounded Full Stack Developers. The Certificate in Full Stack Developer over-arching goals equip certificate candidates with a range of knowledge and skills including:

- Acquisition of the practical Python and JavaScript programming language skills, the technical SQL skills and the applied database skills to execute, from inception to successful completion, websites at the highest level of sophistication of multi-device connectivity and compatibility with dynamic embedded database pipelines.
- Attainment of the professional communication (including visual communication), project management and interaction skills as they apply to stakeholder communications within new and existing web products’ and services, associated public-facing communications and virtual user experiences.
- Upskilling in hybrid and agile project management for web and mobile deployments.

Program Learning Outcomes

The following learning outcomes make linkages across inter-professional, transversal competencies (digital skills, professional communication and project management) and across employment sectors (private and public) and multiple levels of job positions. Upon successful completion of the program, graduates will have acquired the technical, management and communication skills:

- Construct fully functional websites and mobile applications, from end-to-end, by using various languages and tools. (CKCS145, CKCS149):
 - Front-End development and production (CKCS145, CKCS149): create and customize responsive web pages using a variety of languages (SQL, JavaScript) and Full Stack developers' tools (Git, GitHub, Unix Shell). (CKCS145, CKCS149):
 - Back-End development and deployment (CKCS145, CKCS149): design a dynamic database/datastore for retrieval of data using SQL and embed SQL statements in Python code that is supporting the middleware. (CKCS145, CKCS149):
 - Effectively leverage Middleware to achieve web-development project goals: Architect the middleware in Python with support libraries such as Flask from Pallets Project. (CKCS145, CKCS149)
 - Perform Beta Testing for Full Stack website related product improvement (CKCS145, CKCS149): Leverage tools, libraries, apps and various software to perform a number of tiered, technical activities required to deliver a polished end-to-end website or mobile application.

- Perform and deploy both agile and hybrid project management processes and functions. (CTEC210)
- Effectively leverage verbal, written and visual presentation skills to communicate ideas and recommendations to internal and external stakeholders. (CCMN279)
- Work collaboratively and virtually with colleagues on complex projects. (CTEC210, CCMN279)

Overall, the certificate courses will build the applied, demonstrable acquisition of the triad “skill cluster” that employers emphasize they need in every Full Stack Developer they employ.

Target Audience

The certificate program targets adults working across sectors who have mature student status, or an OSSD (or equivalent) or post-secondary coursework.

The rich mix of students that the admissions criterion of the certificate provides an opportunity for instructors to take advantage of the wide range of expertise and experience of the certificate candidates by providing informal mentorship opportunities through course shell discussion board and networking exchanges.

Curriculum Structure

This 4-course Certificate is flexible in that no courses have prerequisites; continuous learners may take the courses in any order and in any combination or “fast track” their learning by taking all four courses concurrently in the same semester.

Required Courses:

CKCS149 – Programming Python

CKCS145 – Full Stack Developer

CCMN279 – Introduction to Professional Communication

CTEC210 – Fundamentals of Project Management

Equity, Diversity and Inclusion

The proposed Certificate meets the objectives of Ryerson University’s Office in Equity, Diversity and Inclusion (EDI) by fostering the importance of web- and mobile-facing communications that engender celebration of inclusion, and the respect for cultural diversity necessary for an enlightened, educated citizenry and a socially progressive innovation economy.

EDI principles will be integrated through **Delivery Mode, Student Support and Curriculum Updates.**

Equity:

To promote the creation of digital job opportunities and removal of barriers that may inhibit an adult's continuing education, the proposed Certificate consists of only four online courses, allowing flexibility for continuous learners who wish to pursue their studies while continuing to work.

As a fully online offering, students from anywhere in the world who have a stable internet connection - including remote regions - may benefit from this program.

An equitable learning environment is woven into the fabric of this program; in the technical courses, students will access expert practitioner educators and an online tutor via email, pre-scheduled Zoom weekly class sessions, and one-on-one tutor sessions upon request. This ensures learners from all backgrounds will receive support customised at the level of the individual learner to bias for success in skills attainment. As a result, employers and community engagement partners who are supporting workers’ upskilling will find it appealing to engage with The Chang School for the benefit of their workers.

Diversity:

To demonstrate respect for diversity in knowledge, worldviews and experiences, the Certificate appeals to a diverse audience across life/career stages and disciplines, and private and public sectors. Furthermore, through the final project-based courses, continuous learners have the opportunity to contribute their personal and professional experiences within their course projects.

Inclusion:

Given the University's commitment to valuing equitable, intentional and ongoing engagement of diversity, the Certificate's Program Advisory Council and Subject Matter Experts demonstrate diversity across professional experiences in the practical application of digital and technical proficiencies, agile project management and professional - including intercultural - communications.

Societal Need

This proposed four-course curriculum, with no prerequisite structure, helps job-seekers close targeted skills gaps and increase their marketability to employers in a short period of time; it also ensures The Chang School's program is highly competitive with programs offered by other continuing education providers in terms of value-per-dollar.

Admission Criteria

Recommended:

- Ontario Secondary School Diploma (OSSD) or equivalent

OR

- Mature student status

Comparator Certificate Programs

Comparative market research indicates that our nearest continuing education university (eg. University of Toronto) and college competitors offer certificates of three or fewer courses in length. This proposed four-course curriculum, with no prerequisite structure, helps job seekers close targeted skills gaps and increase their marketability to employers in a short period of time; it also ensures The Chang School's program is highly competitive with programs offered by other continuing education providers in terms of value-per-dollar.

Recommendation

Having satisfied itself of the merit of this proposal, the Academic Standards Committee recommends: ***that Senate approve this proposal for a new Full Stack Developer certificate – The Chang School.***

E. PERIODIC PROGRAM REVIEW - RTA New Media – The Creative School

In accordance with the Institutional Quality Assurance Process (IQAP), this final assessment report provides a synthesis of the external evaluation and the internal response and assessments of the undergraduate **New Media** program. The report identifies the significant strengths of the program, together with opportunities for program improvement and enhancement, and it sets out and prioritizes the recommendations that have been selected for implementation.

The Implementation Plan identifies who will be responsible for leading the implementation of the recommendations; who will be responsible for providing any resources entailed by those recommendations; and timelines for acting on and monitoring the implementation of the recommendations

SUMMARY OF THE PERIODIC PROGRAM REVIEW OF THE NEW MEDIA PROGRAM

The New Media program submitted a self-study report to the Vice-Provost Academic on September 17, 2019. The self-study presented the program description and learning outcomes, an analytical assessment of the program, and program data including the data collected from student, alumni and employer surveys, along with the standard University Planning data tables. Appended were the course outlines for all core required and elective courses in the program and the CVs for all faculty members in the Department of New Media and other faculty who have recently taught core courses (required and/or elective).

Two arm's-length external reviewers, Simone Jones, Professor, Faculty of Art, OCAD University, and Michael Longford, Associate Professor, School of the Arts, Media, Performance & Design, York University, were appointed by the Dean of the Creative School from a set of proposed reviewers. They reviewed the self-study documentation and then conducted a virtual site visit via video conferencing (Zoom) on December 7, 8 and 10, 2021.

The visit included meetings with the Provost and Vice-President Academic, Vice-Provost Academic; Dean of the Creative School; the Associate Dean Undergraduate Education and Student Affairs, the program Chair, representatives from the New Media faculty, staff, and students, as well as the Chief Librarian, and the subject librarian. The Peer Review Team (PRT) also had a virtual tour of the Makerspace, the Fabrication Workshop, the Equipment Distribution Centre, the Digital Technology Lab (DTL), program specific classrooms and project spaces.

In their report, dated January 31, 2022, the PRT provided feedback that describes how the New Media program meets the IQAP evaluation criteria and is consistent with the University's mission and academic priorities. The PRT acknowledged the rich curriculum conversations that took place with the program faculty which were fully engaged throughout the process of the review. The main areas of strength identified by the PRT include:

- **Program Learning Outcomes.** The learning outcomes for New Media are supported and consistent with the with the University's mission and priorities in the academic plan in a number of significant ways. The New Media program provides students with flexibility and multiple pathways in years one through four to achieve PLOs. The PLOs leading to a Bachelor of Fine Arts in New Media are clearly articulated, and appropriate to the interdisciplinary and hybrid outcomes of the program, and are aligned to institutional UDLEs.
- **Societal Need.** The hybrid skills development, knowledge production and cultural concerns at the center of the New Media program are critical to society as we continue to embrace digital technologies in every aspect of our lives. Experimenting with new modes of interaction for non-screen-based interfaces, treating computer programming as creative expression, and engaging with the poetics of data are at the leading edge of digital technology development today. The New Media program, with its emphasis on creative thinking, DIY experimentation and innovation coupled with critical and social awareness ensures students will carry these attributes into the workplace contributing to the growth of digital media in the culture industries, as well as, the information and communications, user experience design, health and education sectors in Canada.
- **Currency and faculty SRC.** The program is structured to be responsive to the evolving field of new media practice. It does this through design. The first three semesters are composed of core, required courses followed by four semesters that provide students with numerous elective choices (both core and open elective offerings). The final two semesters of study are devoted to the development of a "New Media Thesis" project and "New Media Master Class". This ensures that students are provided with the opportunity to produce a self-directed project at an advanced level.

Finally, curriculum is actively informed by faculty research and is developed in a collegial and mutually supportive environment.

- **Innovation.** The interdisciplinary nature of the New Media Program is supported by access to non-curricular spaces that encourage the integration of making with thinking in the pursuit of self-directed work. This enables experiential learning that exemplifies X University's motto: "With mind and skill".
- **Resources.** The PRT acknowledged a strong interdisciplinary core of faculty members, full-time support staff, and several dynamic physical learning and innovation spaces within the program.
- **Quality Enhancement.** Overall, it is clear the New Media program has acted on and benefited from the recommendations of the Previous Program Review. The success of many of these initiatives were reiterated in our interviews with faculty, staff, students and alumni. They also highlighted areas for continued improvement, many of which informed the proposed recommendations in the SSR. It was noted that work on some of those recommendations is already underway. The willingness of the New Media faculty, staff, and students to work collegially in annual curriculum and resource development, as well extra-curricular activities and community building is to be commended and will continue to serve the program well.

The self-study also identified areas of improvement, such as:

- **Student Engagement.** A sizable subset of each cohort wants more design and industry focused training. This group of students tend to not engage with many of the creative extracurricular and makerspace-related opportunities we offer. This creates a pedagogical challenge. How to foster creative excellence in engaged students while needing to teach to the least engaged students. These divergent needs create a structural dichotomy within the program, one that currently restricts our ability to push the boundaries of Fine Art education.
- **Space Resources.** At the time of the program's move from IMA to RTA, we had a small gallery and a large studio. The makerspace has allowed us to expand the production aspects of our capabilities. However, we lost our dedicated exhibition space. The lack of exhibition space has meant that core courses could not put emphasis on exhibition. As a consequence, for many students, META (our fourth year show) is the only opportunity to share work publicly.
- **Student Course Selection.** As a side effect of the openness of the curriculum, students are often unsure of how to strategically pick their electives. Students have also identified confusion regarding the way course selection is determined and the frequency of course offerings, making it difficult for them to plan their pathways.

The Chair of New Media submitted a response to the PRT Report on March 14, 2022. The response to both the PRT Report and the Program's Response was submitted to the Vice-Provost Academic by the Dean of the Creative School on April 6, 2022.

The Academic Standards Committee completed its assessment of the New Media Program Review on May 5, 2022. The Committee indicated that a thorough, analytical and self-critical program review was conducted. The School integrated into the implementation plan feedback from students, alumni, employers and peer reviewers, and outlined a comprehensive plan for program enhancements moving forward.

The Academic Standards Committee recommends that the program continue, as well as provide a one-year follow-up report, as follows:

1. The mandated One-Year Follow-up Report be submitted by June 30, 2023 to include:
 - a. An update on the status of the recommendations in the Implementation Plan
 - b. A review of course outlines to ensure policy alignment

Presented to Senate for Approval: **June 7, 2022**

Start date of next Periodic Program Review: **2026-27**

SUMMARY OF THE REVIEWERS' RECOMMENDATIONS WITH THE PROGRAM'S AND DEAN'S RESPONSES

RECOMMENDATION 1. *New Hire.* There is a strong opportunity to implement a targeted hiring approach to increase faculty diversity within the program while addressing program growth and curricular need.

Department's Response: Advocate for a new hire with a strong EDI targeted approach. Request a position for the NM program that will support its expansion and actively recruit candidates from equity-deserving groups. A new hire with a strong EDI targeted approach. Request a position for the NM program that will support its expansion and actively recruit candidates from equity-deserving groups.

Dean's Response: The Dean's office supports the School's plan to propose a new faculty hire and will work with the program to maintain a manageable faculty to student ratio within the New Media program.

RECOMMENDATION 2. *Increase staff support hours of the Makerspace.* Adding another staff position and increasing staff support hours would help to ensure student access to necessary technical expertise, and strengthen opportunities for mentorship, peer support, and structured learning in the space.

Department's Response: Advocate to increase in staff support for facilities and activities. New skillsets are required to support the new curricular initiatives in gaming and interaction design. At least one of the tech staff job descriptions will need to be developed to ensure adequate support from the program's new areas of expertise.

Dean's Response: The Dean will work with the School and Human Resources to conduct a review of staff in 2022/23. A new staff hire will be considered as part of this process.

RECOMMENDATION 3. *Balance of introductory courses to advanced courses.* We recognize that a program that values interdisciplinarity is sometimes challenged to offer advanced courses to a cohort that has divergent interests. One option may lie in the creation of an advanced "container" course that could respond to student and faculty research interests. Another option could be the creation of a summer "intensive" that is offered as an elective where students can take a "deeper dive" into a particular topic.

Department's Response: Consider changes to the curriculum to allow greater specialization that will provide opportunities for students to delve deeper into their areas of interest and proceed to a more advanced level.

Dean's Response: The Dean's office supports the redesign and reorganization of the curriculum and will work with the Program to present these changes to Academic Standards for assessment and approval by Senate. The Program also submitted curriculum modifications to add a new required studio course in second year, which was the only year of the program that did not have a required studio course. This curriculum modification was approved by Academic Standards. The addition of a second-year studio course will ensure that a curricular pathway focused on studio-based production and experiential learning is embedded in all four years of the program

RECOMMENDATION 4. Increase courses with an emphasis on Indigenous knowledge and learning. The program can align with the values of this University wide initiative by embedding Indigenous knowledge and learning into its curriculum. In addition, the acknowledgement of land and the recommendation to recognize the important role of public space in the community provides an opportunity for program faculty and students to engage with the interactive public art installation space that is being proposed for the campus.

Department's Response: Program will review course outlines to identify areas for integrating content highlighting contributions by Indigenous artists and supporting the development of Indigenous knowledge creation. Offer additional courses that focus on Indigenous creators and knowledge.

Dean's Response: The Dean's office supports the redesign and reorganization of the curriculum and will work with the Program to present these changes to Academic Standards for assessment and approval by Senate. We support the Program's plan to enhance the integration of Indigenous knowledge and learning through the review of existing course outlines and through the addition of courses focusing on this important area.

RECOMMENDATION 5. Expand curriculum to include gaming and/or interaction design. Offering courses in interaction design and/or gaming would enable the program to build critical mass in student numbers and make a case for additional faculty hires and computing resources in these areas.

Department's Response: New Media has developed a set of proposed curricular changes that will allow students to complete modules in gaming, interaction design or new media art and has prepared the curricular paths for each.

Dean's Response: The Dean's office supports the redesign and reorganization of the curriculum and will work with the Program to present these changes to Academic Standards for assessment and approval by Senate. The School indicates in its response to the PRT that it has prepared a set of curriculum modifications that will be submitted to Academic Standards once the PPR process is complete. These curriculum changes will allow students to complete modules in gaming, interaction design or new media art. The Program has also prepared the curricular paths for each of these areas. The Dean's office supports this initiative and applauds the prompt action taken by the Program to prepare the curriculum changes and curricular paths.

RECOMMENDATION 6. Increase advising to point students to curricular pathways within the program. Student course selection is identified as a "weakness" in the SWOT Analysis. This is supported by students who indicated that they had difficulty planning their elective choices and were unclear about the curricular pathways that could be explored in the program. Students also identified frustration in wanting to take courses that were listed in the program guide yet were not offered over multiple years.

In addition to increasing formal advising touchpoints for students, we recommend strategic and targeted messaging about program pathways and elective offerings via the core required courses in first and second year.

Department's Response: Support academic advisors by providing updated information and instruction on how to guide students through the new curriculum. Revise and redesign the information offered online.

Dean's Response: The Dean's office supports the Program's plan to enhance the way curricular pathways are communicated to students through academic advising and through revisions of the Program's website.

RECOMMENDATION 7. *Strengthen opportunities for communicating program narrative for New Media and possible outcomes.* Finding ways to highlight a range of program outcomes could contribute to strengthening program identity, recruitment, and post-graduation pathways for students.

Department's Response: Program will work in collaboration with marketing team of Dean's office to create targeted communications for recruitment.

Dean's Response: We support the Program's plan to strengthen the communication of the program's narrative and look forward to working with the Program on the development of new recruitment materials.

RECOMMENDATION 8. *Dedicated Exhibition/Presentation Space.* Providing students with an opportunity to professionally present their work, ups the ante for their project outcomes and raises the standards for the program as a whole. Concurrently, an archive of student work could be created from the documentation of projects that are exhibited in the space. This would benefit the program from a curatorial and historical perspective.

Department's Response: We will prepare a study of needs and potential collaborations with programs such as Interior Design and Fashion to identify opportunities within Creative School facilities.

Dean's Response: The Dean's office supports the Program's plan to work towards a presentation space in The Creative School's facilities for the display of student work in a way that is sustainable and financially viable.

RECOMMENDATION 9. *Strengthen engagement with Library and the Zone Learning network.* Work with the library to increase holdings (print and other media) connected to New Media topic areas supporting resources for student research. In addition, explore opportunities for increased engagement with specialized services such as The Collaboratory providing additional access to space and technology resources supporting team and project-based research.

Department's Response: We will review curriculum to ensure these important university resources are referenced and utilized. Similarly, encourage faculty to utilize their support and resources.

Dean's Response: The program agrees with this recommendation and plans to review its curriculum to ensure these important university resources are referenced and utilized. As part of this effort, the Program will encourage faculty to utilize the support and resources of the Library and Zone Learning.

RECOMMENDATION 10. *Increase connections to industry (co-ops, field placement, internships) and the larger Toronto community.* Many students indicated that the program could do more for job preparedness. We have noted that “Community and Urban Partnerships” is one of X University’s Five Priorities. (AP, 24) As a downtown campus, there are numerous opportunities for the program to strengthen its connections to industry. Individual faculty do not need to take this on – this could be part of a university initiative. Students could engage with opportunities such as summer placements as elective offerings.

Department’s Response: Suggest that the program establish a program-specific PAC that creates valuable conversations amongst our professional partners.

Dean’s Response: The Dean’s office supports the creation of a program-specific PAC. We also support an in-depth appraisal of co-op, placement and internship options through an examination of exemplars from other programs in The Creative School as well as consultation with the university’s Career and Co-op Centre.

IMPLEMENTATION PLAN

Priority Recommendation #1: <i>Expand curriculum to include Gaming and Interaction Design</i>	
Rationale: (short description of information from the self-study that supports the recommendation)	
The new media technologies that were once niche and experimental now permeate many aspects of culture and society. The expanded field of new media includes areas of specialisation such as interactive design and gaming that are interwoven with the core practices that have evolved from within fine art. Our current students are the first generation to have grown up in this iteration of interactive new media spaces. As a result, they understand society from within these mediated spaces and live within the overlapping art, design, and gaming spaces.	
Implementation Actions:	
<ul style="list-style-type: none"> • Develop a proposal for an expanded New Media curriculum that allows students to focus on interactive design and gaming while building on the existing New Media Fine Art curriculum. • Request a new hire to support the expansion into Gaming 	
Timeline: (What are the estimated timelines for acting on implementation of the recommendation?)	
2021-22 academic year with submission of proposal to VPA by end of Spring 2022, and a planned start with the Fall 2023 cohort.	
Responsibility for	
a) leading initiative: <i>Program Director</i>	
b) approving recommendation, providing resources, and overall monitoring: <i>Curriculum Committee, School Council, Faculty Dean, UPO, VPA</i>	

Priority Recommendation #2 : Better balance between introductory and advanced courses.	
Rationale: (short description of information from the self-study that supports the recommendation)	
This is tied to Recommendation #1. Currently, students primarily develop depth in the area of New Media Fine Art. The proposed curricular expansion will address the need for more advanced courses by providing alternative pathways in the 3rd year of the program.	
Implementation Actions:	
<ul style="list-style-type: none"> • Develop a proposal for an expanded New Media curriculum that allows students to focus on interactive design and gaming while building on the existing New Media Fine Art curriculum required and elective courses. 	
Timeline: (What are the estimated timelines for acting on implementation of the recommendation?) e.g.	
2021-22 academic year with submission of proposal to VPA by end of Spring 2022, and a planned start with the Fall 2023 cohort.	
Responsibility for	
<p>a) leading initiative: <i>Program Director</i></p> <p>b) approving recommendation, providing resources, and overall monitoring: <i>Curriculum Committee, School Council, Faculty Dean, VPA</i></p>	

Priority Recommendation #3 : Increase emphasis in the curriculum on Indigenous knowledge and learning.	
Rationale: (short description of information from the self-study that supports the recommendation)	
To align with the values of this University wide initiative by embedding Indigenous knowledge and learning into its curriculum.	
Implementation Actions:	
<ul style="list-style-type: none"> • <i>Review course outlines to identify areas for integrating content highlighting contributions by Indigenous artists and supporting the development of Indigenous knowledge creation</i> • <i>Offer additional courses that focus on Indigenous creators and knowledge.</i> 	
Timeline: (What are the estimated timelines for acting on implementation of the recommendation?)	
Begin curriculum review in Fall 2022 by examining current offerings, with an eye towards developing future offerings.	
Responsibility for	
<p>a) leading initiative: <i>Program Faculty</i></p>	

b) approving recommendation, providing resources, and overall monitoring: *Curriculum Committee, School Council*

Priority Recommendation #4 : Implement a strong EDI targeted approach for new hires actively recruit candidates from equity-deserving groups.

Rationale: (short description of information from the self-study that supports the recommendation)
 In alignment with the current values and initiatives of the School, the New Media program continues to work on improving representation from equity-deserving groups within the Faculty.

Implementation Actions:

- *Request a replacement hire to provide continuity when current Indigenous faculty retires*

Timeline: (What are the estimated timelines for acting on implementation of the recommendation?)
 New hires to support Indigenous curriculum and the program’s expansion into gaming will be requested for the 2022/23 hiring cycle.

Responsibility for

a) leading initiative: Program Director, DHC

b) approving recommendation, providing resources, and overall monitoring: *Department Chair, Faculty Dean*

Priority Recommendation #5 : Increase in staff support for facilities and activities.

Rationale: (short description of information from the self-study that supports the recommendation)
 New skillsets are required to support the new curricular initiatives in gaming and interaction design. At least one of the tech staff job descriptions will need to be developed to ensure adequate support from the program’s new areas of expertise.

Implementation Actions:

- *Work with departmental staff to review tech staff positions and future needs*

Timeline: (What are the estimated timelines for acting on implementation of the recommendation?)
 Begin technical needs review starting Fall 2022, with the goal of having additional support in place by Fall

2023.
Responsibility for a) leading initiative: Program Director, Operations Manager b) approving recommendation, providing resources, and overall monitoring: Department Chair, Faculty Dean

Priority Recommendation #6 : Increased student advising
Rationale: (short description of information from the self-study that supports the recommendation) <p>Students have identified confusion regarding course selection and frustration over the frequency of some course offerings. Students need help understanding how to use their electives to create a personalized educational pathway and consider prerequisites and other constraints such as alternate year elective offerings. This support becomes even more critical with the implementation of the new Open Elective Policy.</p>
Implementation Actions: <ul style="list-style-type: none"> • Support academic advisors by providing updated information and instruction on how to guide students through the new curriculum. • Revise and redesign the information offered online. • Launch a Winter orientation focused on curriculum
Timeline: (What are the estimated timelines for acting on implementation of the recommendation?) <p>2022/2023 academic year</p>
Responsibility for a) leading initiative: Program Director, department staff b) approving recommendation, providing resources, and overall monitoring: <i>Department Chair</i>

Priority Recommendation #7 : Strengthen engagement with the Library and the Zone Learning network.
Rationale: (short description of information from the self-study that supports the recommendation)
Implementation Actions: <ul style="list-style-type: none"> • Review curriculum to ensure these important university resources are referenced and utilized. • Encourage faculty to utilize their support and resources.
Timeline: (What are the estimated timelines for acting on implementation of the recommendation?)

2022/2023 Academic year
Responsibility for a) leading initiative: Program Director, Program Faculty b) approving recommendation, providing resources, and overall monitoring: Department Chair

Priority Recommendation #8 : Creation of a dedicated public presentation space.
Rationale: (short description of information from the self-study that supports the recommendation) <p>Public presentation is an essential part of the lifecycle of a creative project. It allows a creative project to find its audience and provides the creator with valuable feedback from that audience. Such encounters are also essential for the mobilisation of innovation.</p> <p>Many students in New Media have the opportunity to exhibit their work only in their final year, which limits their creative development. An exhibition space would allow students and faculty to share their work publicly and connect the New Media program community with those of the surrounding sector.</p>
Implementation Actions: <ul style="list-style-type: none"> • <i>Prepare a study of needs and potential collaborations with programs such as Interior Design and Fashion to identify opportunities within Creative School facilities.</i>
Timeline: (What are the estimated timelines for acting on implementation of the recommendation?) <p>Begin development of study starting Fall 2022. Follow up on study in 23/24 academic year.</p>
Responsibility for a) leading initiative: Program Director b) approving recommendation, providing resources, and overall monitoring: Department Chair, Faculty Dean

Priority Recommendation #9 : Strengthened program narrative to better communicate professional opportunities.
Rationale: (short description of information from the self-study that supports the recommendation) <p>Defining New Media can be a challenge given it is a relatively new discipline in part tied to rapidly changing technologies. However, finding more opportunities for communicating and reinforcing a</p>

<p>program narrative, one that is cumulative (years 1 - 4) and that embraces the curricular paths through the program would help to address what some students described as ambiguity in program identity. Moreover, the program acknowledges as a strength the “diversity of student interests” and the ways in which they apply their critical, technical and creative skills through employment in a number of fields. Finding ways to highlight a range of program outcomes could contribute to strengthening program identity, recruitment, and post-graduation pathways for students.</p>
<p>Implementation Actions:</p> <ul style="list-style-type: none"> • <i>Work in collaboration with marketing team of Dean’s office to create targeted communications for recruitment.</i>
<p>Timeline: (What are the estimated timelines for acting on implementation of the recommendation?)</p> <p>Being a review of New Media’s marketing strategy starting Spring 2022</p>
<p>Responsibility for</p> <p>a) leading initiative: Program Director</p> <p>b) approving recommendation, providing resources, and overall monitoring: Department Chair</p>

<p>Priority Recommendation #10 : Increase connections to industry (co-ops, field placement, internships) and the larger Toronto community.</p>
<p>Rationale: (short description of information from the self-study that supports the recommendation)</p> <p>In alignment with the University’s “Community and Urban Partnerships” priority, the program must continue to strengthen its relationships within the sector, particularly at a local level.</p>
<p>Implementation Actions:</p> <ul style="list-style-type: none"> • Re-establish connections with local partners such as artist-run centers and cultural organizations • Establish a program-specific PAC that creates valuable conversations amongst our • professional partners.
<p>Timeline: (What are the estimated timelines for acting on implementation of the recommendation?)</p> <p>We will examine the implementation of a program-specific PAC starting Fall 2022, with the goal of having it in place by the end of the 2022/23 academic year.</p>

Responsibility for

a) leading initiative: Program Director

b) approving recommendation, providing resources, and overall monitoring: Department Chair

Recommendation

Having satisfied itself of the merit of this periodic program review, the Academic Standards Committee recommends: ***That Senate approve the Periodic Program Review for RTA – New Media, Bachelor of Fine Arts - The Creative School.***

F. PERIODIC PROGRAM REVIEW - Philosophy – Faculty of Arts

In accordance with the Institutional Quality Assurance Process (IQAP), this final assessment report provides a synthesis of the external evaluation and the internal response and assessments of the undergraduate **Philosophy** program. The report identifies the significant strengths of the program, together with opportunities for program improvement and enhancement, and it sets out and prioritizes the recommendations that have been selected for implementation.

The Implementation Plan identifies who will be responsible for leading the implementation of the recommendations; who will be responsible for providing any resources entailed by those recommendations; and timelines for acting on and monitoring the implementation of the recommendations.

SUMMARY OF THE PERIODIC PROGRAM REVIEW OF THE PHILOSOPHY PROGRAM

The Philosophy program submitted a self-study report to the Vice-Provost Academic on September 28, 2019. The self-study presented the program description and learning outcomes, an analytical assessment of the program, and program data including the data collected from student, alumni and employer surveys, along with the standard University Planning data tables. Appended were the course outlines for all core required and elective courses in the program and the CVs for all faculty members in the Department of Philosophy and other faculty who have recently taught core courses (required and/or elective).

Two arm’s-length external reviewers, Dr. Alice MacLachlan, Associate Professor, Department of Philosophy, York University, and Dr. John Hacker-Wright, Associate Professor, Department of Philosophy, University of Guelph, were appointed by the Dean of Arts from a set of proposed reviewers. They reviewed the self-study documentation and then conducted a virtual site visit via video conferencing (Zoom) on October 27 and 28, 2021.

The visit included meetings with the Provost and Vice-President Academic, Vice-Provost Academic; Dean of Arts; the Associate Dean of Arts, Undergraduate Studies, the program Chair, the Undergraduate Program Director, representatives from the Philosophy faculty, staff, and students, as well as the Chief Librarian, and the subject librarian. The Peer Review Team (PRT) also met with recent graduates.

In their report, dated November 25, 2021, the PRT provided feedback that describes how the Philosophy

program meets the IQAP evaluation criteria and is consistent with the University's mission and academic priorities. The PRT acknowledged the rich curriculum conversations that took place with the program faculty which were fully engaged throughout the process of the review. The main areas of strength identified by the PRT include:

- **Outstanding Program.** Its most notable strength lies first and foremost, in the superb level of instruction happening throughout the program. We heard uniform praise from current students and alumni for passionate instructors who offer engaging courses and make themselves available to their students.
- **Innovative Experiential Learning.** A second noteworthy strength is the innovative experiential learning curriculum, the flagship of which is PHL 803, "Philosophy Engaging Communities." Not to rest content with this significant achievement, the department is pioneering a co-op program in philosophy that shows promise to be an exemplary experiential learning experience, unique among philosophy BA programs.
- **Pluralism.** The program has one of the strongest representations of Continental philosophy of any program in Canada, and this is important as it is a vibrant tradition that engages undergraduates with exciting philosophical reflection in areas such as existentialism and phenomenology, which many programs treat only begrudgingly. But the pluralism of this program does not stop there; recent hires have expanded the pluralism along other dimensions, including non-Western philosophy and soon, Indigenous philosophy. This is crucial for any philosophy program, but especially for one with such a diverse student body.

The PRT also identified areas of improvement, such as:

- **Cohesion.** Perhaps the foremost challenge is finding ways of offering opportunities for majors to form cohesion early in the program and have more educational experiences that are focused on them. We heard from students and alumni who noted that they went through an entire year without meeting a fellow philosophy major. The students find themselves early on in large classes serving students across the university and hence have a fairly anonymous place as majors within the larger student body.
- **Lack of Specialist in Logic.** The department lacks a specialist in logic and therefore has sparse offerings in that area, which is certainly noticed by some students. This is a core area that the department recognizes as an area of weakness.
- **Lack of Physical Space.** There is a noted lack of physical space, which is especially important given that the department is continuing to expand. Incoming faculty and increasing enrollment will call for more offices and space for majors to congregate, not to mention classrooms.

The Chair of Philosophy submitted a response to the PRT Report on December 10, 2021. The response to both the PRT Report and the Program's Response was submitted to the Vice-Provost Academic by the Dean of Arts on April 20, 2022.

The Academic Standards Committee completed its assessment of the Philosophy Program Review on May 26, 2022. The Committee indicated that a thorough, analytical and self-critical program review was conducted. The School integrated into the implementation plan feedback from students, alumni, employers and peer reviewers, and outlined a comprehensive plan for program enhancements moving forward.

The Academic Standards Committee recommends that the program continue, as well as provide a one-year follow-up report, as follows:

2. The mandated One-Year Follow-up Report be submitted by June 30, 2023 to include:
 - a. An update on the status of the recommendations in the Implementation Plan

Presented to Senate for Approval: **June 7, 2022**

Start date of next Periodic Program Review: **2026-27**

SUMMARY OF THE REVIEWERS' RECOMMENDATIONS WITH THE PROGRAM'S AND DEAN'S RESPONSES

RECOMMENDATION 1. *Co-op Study Program.* Launch a co-op study program option for Philosophy students starting in the academic year 2023-2024 as part of the overall Faculty of Arts co-op development in partnership with the Ryerson Career and Co-op Centre. The program will include an alternative curriculum stream with 3 work terms.

Department's Response: We agree that a co-op program may help with retention, and with the perception that philosophy does not adequately prepare students for a career, and appreciate the initiative and dedication of the Ryerson Career and Co-op Centre as well as its institutional supporters. The Philosophy Department will reinforce this initiative by way of our regular career nights series with guest speakers, the evolution of our experiential courses, the advice and leads from our PAC, as well as our new alumni network. While the co-op process for students will be coordinated principally by the Career & Co-op Centre, we expect that there might be additional support work needed from our Department such as helping to identify new placement sites.

Dean's Response: The Office of the Dean of Arts unequivocally supports this career-integrated learning initiative. Increasingly, the Faculty of Arts has promoted career-integrated learning through such initiatives as job-shadowing (e.g. SSH 500), placements and the new co-op program. The recommendation is also overwhelmingly supported by program students, the PRT members and Program Advisory Council members.

RECOMMENDATION 2. *Investigate options for dedicated tutorials, sections, or courses for Philosophy students in years 1 and 2.* This recommendation, to establish dedicated tutorials or sections for philosophy students, seems especially crucial to us. Current students and alumni both expressed strong desire to see dedicated tutorials or sections. This will help address the sense of lack of cohesion with fellow philosophy majors felt among many first and second year students which no doubt contributes to the problems with retention.

Department's Response: With no cost except for organization, the program could foster a greater sense of community by way of dedicated tutorials for SSH 105 and PHL 201, as well as a dedicated fundamentals course as discussed in Recommendation #3. It would also be possible to run dedicated sections of PHL 503 and PHL 708 (or equivalent courses) in the third semester since both courses are run in each term. These are low-cost ways to build community. As well, the Department will consider establishing a dedicated course in ancient philosophy (Recommendation #5). There is more consideration given to community building under Recommendations #5 and #9.

Dean's Response: The Office of the Dean is certainly willing to discuss these options with members of the Philosophy Department, although there are some concerns as to how such initiatives would align with the

First Year Common Platform. Along with 11 other programs in the Faculty of Arts, the Philosophy program is part of the First Year Common Platform, a structure that recognizes that first-year university students often arrive at university without a clear understanding of their options for a major and that they may wish to explore their options in the Social Sciences and Humanities with the possibility of transferring seamlessly from one program to another at the end of first year without having to make up any additional credits. For this reason, in their first year, Arts students typically find themselves in classes with other members of their program cohort along with students from a number of other programs in the Social Sciences and Humanities. We consider this to be an important strength of our curriculum. It provides the basis for a rich and flexible transitional year for our first year students. One of the core courses for the common platform is SSH 105 Critical Thinking I, taught by instructors in the Philosophy Department. This course is taken not exclusively by Philosophy students but also all other students from the Faculty of Arts. Other lower level Core courses such as PHL 101, 201, 333 and 366 are also Liberal Studies courses that are offered to students from all Ryerson Faculties. This use of Liberal Studies courses as Core courses reflects a decision made at the inception of the program to offset the cost of the original, relatively low, enrolment target of approximately 30 students (now grown to 45-50 students per year). To create community and increase retention, the Department would like to create a greater sense of cohort in first and second year by having sections of SSH 105 and the Liberal Studies Philosophy courses dedicated to its own program students.

RECOMMENDATION 3. *Fundamentals course for incoming philosophy students. This would be a mandatory pass/fail course that meets throughout one semester (number of hours to be determined) for writing workshops, an introduction to discipline-specific research and methods, and to discuss career options with guest speakers from various professions.*

Department's Response: We appreciate the PRT's recognition of the possible benefits of a fundamentals course for first year students. This will be planned in consultation with students, who first suggested this idea after a number of discussions with the Philosophy UPD and PA about the challenging leap from high school to university. It will also address the need for more cohesion in the Philosophy undergraduate program.

Dean's Response: This recommendation is based on similar mandatory pass/fail courses such as SCI 180 Orientation, in the Faculty of Science and BUS 100 Strategies for Success, formerly in Ted Rogers School of Management (TRSM). The Department will need to review the benefits of such a credit course carefully. Its goal would be to increase the cohort effect and to ensure that students truly understand the Philosophy program and the potential for careers early on in their studies. A mandatory pass/fail course would necessarily be a degree credit Core course that would have to fit into the existing 40-credit program. The Department must also decide on the semester in which they would position such a course, given the recommended flexibility of the first year in the Common platform. I note that the current double majors in Philosophy are already beyond the maximum percentage of Core courses so that this new Core course should replace another Core course rather than add to the overall number of Core courses. The Department should also ensure that there is no substantial overlap between the Fundamentals course and SSH 104 Co-op Preparation. There may be other more effective ways to ensure that Philosophy students have the cohort experience and build community, such as peer mentors, workshops and speaker series, many of which appear in the PPR and the PRT report. The Department should also note that the Office of the Dean of Arts

is developing new Faculty-wide supports for student success within the next year, which should reduce the need for Departments to provide such support.

RECOMMENDATION 4. *Increase the diversity of the curriculum and the program.* This program has made considerable strides in this direction already, and we are strongly supportive of its continuing efforts in this direction. Even though this program is surely ahead of its comparison programs in diversity, it clearly needs to be, having a very diverse student body that would be understandably dismayed by the continuance of a white male centred canon. This was mentioned by some of the students we spoke to. The proposals enumerated under this recommendation are well-conceived and should be enacted, in our view.

Department's Response: The Philosophy faculty are keen to review the curriculum with the values of EDI in mind. A new course on a female philosopher has been added for 2022. For the next round of calendar changes, our descriptions will be altered to be more inclusive, and courses will be added in social and political philosophy that are diverse in content (with the expertise of the newest faculty member, Dr. Mulaj, in mind). The 2022 job search for an Indigenous scholar will also further the goals of Recommendation #4. Furthermore, the newly established Committee for Diversity and Inclusion (formerly the Equity committee), as well as the TRC Committee, are hosting events with Indigenous speakers, women philosophers, and thinkers from diverse philosophical traditions. One faculty member has launched a new scholarly society on women thinkers (Society for Women of Ideas), with events open to the Ryerson community. As well, the Canadian Philosophical Association and the Diversity Institute in conjunction with the Philosophy departments in the GTA are planning to co-host a week of professional, academic, and social events for 12-18 Indigenous students in the final years of their undergraduate degrees from across Canada in June of 2021. This will hopefully be the first of such events in the GTA.

Dean's Response: From the point of view of the Office of the Dean, the initiative to increase the diversity of the curriculum and the program is an essential element of the PPR and should be one of its highest priorities. There is support available from the Dean's office, particularly in the form of consultation with the Dean's Advisor on Indigenous Education, Dr. Hayden King and the Dean's Advisor on Blackness and Black Diasporic Education, Dr. Mélanie Knight, to open up the curriculum to a greater diversity of perspectives, in particular, decolonization, anti-racist thought and action. The Dean's Office also offers curriculum development grants in the areas of Indigenous Studies, Black Studies and Experiential education. Faculty members in the Philosophy Department are encouraged to take advantage of such resources. It is crucial that the whole Department be involved in broadening perspectives in curriculum and research and that equity commitments are not imposed as a burden on racialized faculty only. It is not clear what role a new administrative position would play in achieving this objective, one that should be embraced by all faculty members who are involved in teaching and research. As the PRT members have noted it is important to avoid reinforcing the traditional approach of a curricular canon focused on "dead white men."

RECOMMENDATION 5. *Review program requirements and address curriculum gaps.* This recommendation calls for a curriculum review, but more substantively the suggestion seems to be that there could be additional requirements in history and possibly social and political philosophy. It also recognizes the need for more offerings in logic.

Department's Response: The lack of logic courses has been partially remedied with PHL 650: Beyond Classical Logic, which is a more advanced logic course than PHL 597: Formal Logic. Starting in winter 2022, PHL 650 will be available to Philosophy, Mathematics and Computer Science students on the open elective table with prerequisites: PHL 597, MTH 110 or MTH 714. Political philosophy is coming together as a supported objective of the Department and will surely grow. As for a shortage of history requirements, a required course in ancient philosophy would provide the roots our program students need for their studies, and we now have the expertise to deliver it. If a course in ancient philosophy is to be required, we could make it a dedicated section for program students in the lower years of the program to help build a sense of community. The cost seems reasonable given the usual intake of roughly fifty students per year. As well, a suite of required courses in history would provide some assurance of a shared background in the student body coming into the seminars in their third and fourth years. These could include a required course in non-Western philosophy, or women in the history of philosophy.

Dean's Response: The Office of the Dean applauds the Department's commitment to review and revise its curriculum in a manner that respects and highlights the focus on diversity and inclusion in Recommendation #4, consistent with the advice of the PRT members. Department members have already added a new course on logic and plan to add courses on Ancient Philosophy and on Social and Political Philosophy. In emphasizing new requirements in the history of philosophy, logic, and social and political philosophy, the Department must take care to integrate the goals of diversity, equity and inclusion into the entire curriculum rather than relegating these issues to specific courses highlighting neglected, marginalized voices.

RECOMMENDATION 6. *Establish an alumni network.* The recommendation is to build an alumni network, and this is a great idea. It will help to measure the effectiveness of efforts to bridge philosophy majors into work roles, and, assuming that those efforts are successful, the alumni can help to recruit majors and possibly mentor them in the proposed new orientation course and the metaphilosophy course. We recommend the hiring of an additional staff person to facilitate this effort (among other tasks).

Department's Response: Efforts are underway to utilize LinkedIn to create a student alumni networking group.

Dean's Response: The Dean's Office, the Department and the PRT members are all in agreement regarding the importance of an alumni network. The Department has taken the step of consulting Laura MacKinnon, the Career Engagement specialist assigned to the Faculty of Arts, as this is an area where she has considerable expertise. The Dean's Office provides expertise in social media through the Arts Communications Strategist, Riannon John.

RECOMMENDATION 7. *Investigate and monitor retention data from 2021 until next PPR and strengthen recruitment efforts.* This recommendation is to measure the extent of the program's retention problem, to determine whether there is a distinctive problem for philosophy or whether it is part of a general university-wide problem. If there is a distinctive problem for philosophy, the goal is to gather data about its causes and to track whether measures taken arising from this program review have an impact.

Department's Response: The Department will investigate a more speculative proposition as well: we might have more students getting out of phase because a disproportionate number of our students do not come

into the program by way of direct entry. They have been out of high school for awhile and some did not finish. Their reading and writing skills might be rusty and some students must support themselves. The foundation course will help address some of the skills-based issues that might be affecting retention or delaying graduation. We do have some survey data to consider concerning how much time students spend working outside their studies, and we will follow up in the next PPR. Our new bursary offerings might reveal that financial trouble is part of the problem.

Dean's Response: The Department highlights retention issues, especially in regard to students in second and third year. They propose to do research to add data regarding the fifth year. One proposed solution to these retention issues is to improve recruitment and ensure that students truly understand what is entailed in the study of philosophy as well as a deeper awareness of its benefits.. The PPR offers a number of solutions elsewhere, partly focusing on increasing the sense of cohort and community within the program and emphasizing career-integrated learning, notably through the introduction of co-op education. This recommendation recognizes that the problem needs greater analysis in order to determine the most effective solutions. The Department situates the responsibility for this work largely with the Undergraduate Program Administrator and a potential part-time staff member. Given the importance of this academic issue, the involvement of faculty members, including the UPD and the Curriculum Committee members, is vital.

RECOMMENDATION 8. Hire a part-time staff person. Recommendation seems essential to the fulfilment of other recommendations, which make additional administrative demands. The current Philosophy Administrator is universally admired by students and faculty. He knows the program thoroughly and even helps to guide the students to relevant resources. He surely already has a full plate and the additional demands made by, for example, the co-op program seem to pose the threat of over-burdening him.

Department's Response: We agree with the PRT's assessment. Ryan Walters is essential to the smooth operation of the Philosophy undergraduate program and given the growth of the BA Honours program, along with the other responsibilities of the Department, including overseeing courses in Religion and Music, RUIC, and the upcoming co-op program and alumni networking, as well as the implementation of the PPR recommendations, another staff member is essential.

Dean's Response: The Office of the Dean of Arts is open to a review of staffing requirements and roles in the Department of Philosophy. As part of this review, we must be aware of the need to maintain consistency and equity across all Departments in the Faculty. We commend the program for its growth from the initial intake of around 30 students to 45-50 students. At the same time, we must note that this intake still situates the Department in the lower percentile of program enrolments in Arts programs. It is not clear that additional staffing is needed based on the current size of the undergraduate program. Other departments with an intake of 40-60 students generally have only a single Undergraduate Program Administrator and a Departmental Administrator. Having said this, we note that the Department does have a Masters of Arts program and plays a significant role in service teaching at the undergraduate level. Furthermore, the staffing structure in the Philosophy Department is not aligned with that of other Faculty of Arts departments. While Philosophy has two staff positions, that is, a Department Administrator and Undergraduate Program Administrator, and a Department Administrator and Graduate Program Administrator, most programs with both an undergraduate and a graduate program have an Undergraduate Program Administrator, a

Departmental Administrator and a Graduate Program Administrator, the latter of which is in some cases shared with another Department. As mentioned, we support a review of the structure of staffing in the Philosophy Department more closely aligned with Faculty of Arts norms.

RECOMMENDATION 9. *Create more tutorial sections in more courses.* Currently tutorials are only offered in SSH 105 (Critical Thinking) and PHL 201 (Problems of Philosophy). This recommendation is to expand tutorials (beyond Recommendation #2) in courses including (but not limited to) PHL 101, PHL 333, PHL 366, PHL 503 and PHL 597. Dedicated tutorials for philosophy majors should be created where appropriate. The additional discussion time with TAs and fellow students will benefit all students in the program. Since staffing these tutorials is a challenge without a PhD program to draw from, SSH 105 could employ non-philosophy grads from other programs. Additionally, senior undergrads could be given TAs.

Department's Response: This is an expansion of Recommendation #2. We agree that dedicated tutorials in more of the large courses in years one and two will go a long way to addressing the students' concerns about the lack of cohesion or community in the Philosophy BA Honours program. We will look into the possibilities of hiring TAs from other departments for SSH 105 in order to save the Philosophy MA students for tutorials in other courses.

Dean's Response: The Office of the Dean and the Philosophy Department both see this recommendation as an expansion of the Department's second recommendation, which calls for dedicated tutorials specifically for first and second year students. The Faculty of Arts allows for tutorial sections in courses where a pedagogical argument can be made to justify their use. While we applaud any efforts to hire and to engage our own graduate and undergraduate students as TAs and GAs, we note that resource constraints make it infeasible to offer tutorial sections in all courses. Nonetheless, where a case can be made that a given course requires tutorials based on pedagogical requirements, the request will be considered. Another possibility is the creation of an upper level course that includes mentoring of junior students by advanced students, a model that has been successfully used in the Department of Sociology, for example.

RECOMMENDATION 10. *Work to resolve the issue of limited physical space for Philosophy faculty and students.* The PRT comments on the "noted lack of physical space" for the Department, mentioned by students who believe that a dedicated philosophy student lounge would help with community-building. There is also a faculty office shortage. New faculty must be accommodated, preferably on the same floor and building as their colleagues.

Department's Response: The space crunch is an ongoing issue for the Department, and we appreciate the PRT's recommendation for a student lounge and the guarantee of office spaces in proximity to current offices. With one new faculty member joining us this academic year (arriving on campus in January), and three more in July 2022 if the current searches are successful (one of the three is from our 2021 search), it is essential to procure four more offices. We will discuss this recommendation with the Dean's office.

Dean's Response: Space is an ongoing issue for the Faculty of Arts and for Ryerson University in general. The Office of the Dean recognizes the value of dedicated physical spaces for students yet it is a challenge to find space in light of our downtown location. We should note, however, that the Faculty of Arts benefits from a

general student lounge in POD 349 (currently under renovation) as well as two Faculty of Arts computing labs. The Office of the Dean also recognizes the importance of contiguous space for faculty offices to create and foster community and we are working to meet this need, even where it requires recourse to leased space. Some new campus buildings have been developed in recent years and we hope to benefit from the current backfill.

IMPLEMENTATION PLAN

RECOMMENDATION AND IMPLEMENTATION PLAN
Recommendation #1: Launch a co-op study program option for Philosophy students
Rationale: There is a strong need to help Philosophy students transition from the Philosophy program to the workforce. This has been identified in student surveys. Most Philosophy students enjoy the program but feel anxious and unprepared for the labour market.
<p>Implementation and Timeline:</p> <ol style="list-style-type: none"> 1. Approve at a Department Council meeting in Winter 2022 a modified curriculum stream that includes 3 co-op work terms as part of a proposal to go to the Academic Standards Committee. 2. Work with the Ryerson Career Centre to finalize a co-op proposal to the Academic Standards Committee for submission in Spring 2022. 3. Submit calendar changes by Fall 2022 for 2023-2024 implementation. 4. Open applications for the co-op stream in Spring 2023 for 2023-2024 year (first work term ideally in Winter 2024).
<p>Responsibility for:</p> <ol style="list-style-type: none"> a) Leading initiative: Department of Philosophy in partnership with the Ryerson Career and Co-op Centre. b) Responsibility for approving recommendation, providing resources, monitoring: Department of Philosophy, Dean, Academic Standards.

RECOMMENDATION AND IMPLEMENTATION PLAN
Recommendation #2: Investigate options for dedicated tutorials, sections, or courses for Philosophy students in years 1 and 2.
<p>Rationale: Students have voiced a need to foster a stronger community among the student body. Philosophy students do not have a dedicated course until third year and many believe a dedicated course earlier in the program would go a long way towards community building.</p> <p>The aim of a dedicated philosophy course in second year, and dedicated tutorials or sections in first year, is to foster community for philosophy majors, and to more freely focus on the methods and approaches of the discipline (for e.g. philosophy essay-writing). This should help improve retention rates.</p>

Implementation and Timeline:

1. The new plan calls for a dedicated section of PHL 201 in Fall 2022, switching in 2023-2024 to a new philosophy course listed only on Table 1 as the Dean suggested.
2. Strike an expanded curriculum committee for summer 2022 to review second year required courses and propose a dedicated course for Philosophy students in year two. (Options to be explored include: a new dedicated Ancient course; a philosophy specialist version of PHL 503 or PHL 708). The committee presents their recommendation for approval at a Department Council meeting in Fall 2022.
3. Submit calendar changes by Fall 2022 for implementation for the 2023-2024 academic year.

Responsibility for leading initiative: Department of Philosophy

Responsibility for approving recommendation, providing any resources made necessary by the recommendation, and overall monitoring of the implementation of the recommendation: Curriculum committee, Department of Philosophy, Faculty of Arts Dean’s Office

RECOMMENDATION AND IMPLEMENTATION PLAN

Recommendation #3: Increase the diversity of the faculty and the curriculum.

Rationale: The discipline of philosophy is still predominantly focused on male, European, canonical thinkers, and needs to include more under-represented minorities including women, people of colour, and scholars working in non-Western philosophical traditions, including Indigenous philosophy. The objective is to foster greater inclusivity and expose students to a broader sense of what philosophy is and can be.

Specific Actions:

1. Establish a Committee for Diversity and Inclusion to propose and implement measures intended to diversify the program.
2. Revise the calendar descriptions to include female authors.
3. Propose a \$1000 bursary for Indigenous students entering the program with the possibility of renewal after the first year, funded by the Department.
4. Propose a \$1000 bursary for students entering the program with financial need, possibly renewable, funded by the Department.
5. Revise current course offerings with a view to incorporating more authors from under-represented minorities in philosophy.
6. Offer a course exclusively focused on a major female philosopher.
7. Organize a speaker series and reading group on Indigenous philosophy.
8. Organize a speaker series on women philosophers (through the Society for Women of Ideas).

Implementation and Timeline:

1. Committee for Diversity and Inclusion established May 2021.
2. Curriculum changes will be submitted in fall, 2022 for 2023 implementation.
3. The speaker series on women philosophers (through the Society for Women of Ideas) began 2021-2022.
4. The speaker series and reading group on Indigenous philosophy began in 2021-2022.
5. Diversification of curriculum is ongoing.
6. Set up Indigenous bursary and financial need bursary by 2022-23.

Responsibility for leading initiative: Philosophy Program Chair, Director and Administrator, Curriculum Committee, Committee for Diversity and Inclusion, Speaker Series Committees.

Responsibility for approving recommendation, providing any resources made necessary by the recommendation, and overall monitoring of the implementation of the recommendation:

Department of Philosophy

RECOMMENDATION AND IMPLEMENTATION PLAN

Recommendation #4: Review program requirements and address curriculum gaps

Rationale: The Comparator Report reveals that Ryerson's Philosophy program has fewer history requirements than all the other comparison programs but one. This means students lack foundational knowledge important for more advanced philosophy courses. Other program requirements need revision, and curriculum gaps need to be filled. In a series of focus group discussions with faculty, those teaching the "Classic Readings" seminars have complained that students do not have the relevant background for these seminars, including logic (important for PHL 600). Faculty discussions have furthermore revealed an interest in exploring the possibility of a social and political requirement, as well as offering more choices in experiential learning (e.g. a course on public philosophy, philosophy through media, or practical research).

Specific actions:

1. Review core requirements and address curriculum gaps with a view to strengthening the foundational knowledge of philosophy majors
2. Consult with faculty on whether to propose new requirements in history, logic, and social and political philosophy
3. Review all the program requirements in consultation with faculty members
4. Add dedicated required philosophy course in second year to strengthen foundational knowledge
5. Expand offerings in logic by adding an advanced course for students interested in further study
6. Explore more options in experiential learning

Implementation and Timeline:

1. Curriculum committee to consult with faculty members over summer 2022.
2. Make calendar changes in fall 2022 for 2023 implementation.

Responsibility for leading initiative: Philosophy Program Chair, Director and Administrator, Curriculum Committee

Responsibility for approving recommendation, providing any resources made necessary by the recommendation, and overall monitoring of the implementation of the recommendation:

Department of Philosophy

RECOMMENDATION AND IMPLEMENTATION PLAN

Recommendation #5: Establish an alumni network

Rationale: It has been difficult to stay in touch with alumni of the program as alumni relations are managed centrally by a different administrative area of the University. However, alumni can and should form an important part of the broader program community and assist with enriching the experience of current students, for example by providing career mentorship. A better system for connecting with alumni could also help the department to get employer feedback.

Actions:

1. Investigate how to improve connections with program alumni and build a robust alumni network.
2. Consult with the Alumni Relations department to discuss objectives of this recommendation.
3. Investigate possible platforms or services that can assist with maintaining an alumni network (for example, Discord, Facebook, LinkedIn, etc.)
4. Consult current alumni.
5. As suggested by the Dean, consult Laura MacKinnon of the Career Engagement Office and Riannon John as the Arts Communications Strategist.

Implementation and Timeline: As soon as the PPR is approved with this recommendation (estimated by end of Summer 2022), the above actions can be started.

Responsibility for leading initiative: Philosophy Program Chair, Director and Administrator

Responsibility for approving recommendation, providing any resources made necessary by the recommendation, and overall monitoring of the implementation of the recommendation:
Department of Philosophy

RECOMMENDATION AND IMPLEMENTATION PLAN

Recommendation #6: Investigate and monitor retention data from 2021 until the next PPR and strengthen recruitment efforts.

Rationale: Investigate whether retention data is truly pointing to a trend of students prematurely leaving the program or if this is a matter of students getting out of phase. If so, investigate reasons why and whether these are particular to the Philosophy program. Assess whether recommendations implemented after the PPR have an effect on retention.

Implementation and timeline:

1. Study the effects of students being out of phase when it comes to our actual retention numbers for the sake of a better analysis in order to determine the nature of the problem for the sake of solving the problem. This work will take place during winter 2023.
2. As suggested by the Dean, this should be a collective effort shared by the UPD, PA, the curriculum committee and the Department as a whole.

Responsibility for leading initiative: Philosophy Program Chair, Director and Administrator

Responsibility for approving recommendation, providing any resources made necessary by the recommendation, and overall monitoring of the implementation of the recommendation:
Department of Philosophy

RECOMMENDATION AND IMPLEMENTATION PLAN

Recommendation #7: Formalize additional administrative support

Rationale: We believe that we are in line with departments who have the equivalent of 2.5 positions. It should be noted that the Department has already been hiring part-time support for the last 3 years. The Dean's office initially covered this expense for the first year in recognizing a need for additional support, but the Department has paid for it since then out of its own budget.

Implementation and timeline:

1. Consult with the Dean’s Office on making a request to the University over the summer of 2022.
2. Write up the job responsibilities and work with HR to formalize and grade the position.
3. Post and hire for the position for Fall of 2022.

Responsibility for leading initiative: Philosophy Program Chair and Administrator

Responsibility for approving recommendation, providing any resources made necessary by the recommendation, and overall monitoring of the implementation of the recommendation: Dean

RECOMMENDATION AND IMPLEMENTATION PLAN

(PRT) Recommendation #8: Create tutorial sections in more courses.

Rationale: Currently the program has limited tutorials (SSH 105 and PHL 201). Expanding tutorial sections in other first and second year courses would help build community in the program, assist students with discipline-specific skills, and help with retention.

Implementation and Timeline: Given the current lack of resources needed to expand the number of tutorial sections offered in the undergraduate program, there are no immediate plans to implement this recommendation; it will be explored in the coming years.

Responsibility for leading initiative: Philosophy Program Chair, Director and Administrator as well as curriculum committee

Responsibility for approving recommendation, providing any resources made necessary by the recommendation, and overall monitoring of the implementation of the recommendation: Dean

RECOMMENDATION AND IMPLEMENTATION PLAN

(PRT) Recommendation #9: Work to resolve the issue of limited physical space for Philosophy faculty. (The PRT also noted students’ request for a dedicated Philosophy student lounge).

Rationale: There is an urgent need for more office space for 4 incoming faculty who are new or who have been teaching online.

Actions: Consult with the Dean.

Timeline: Offices need to be located by July 1, 2022.

Responsibility for leading initiative: the Dean and the Chair.

Recommendation

Having satisfied itself of the merit of this periodic program review, the Academic Standards Committee recommends: ***That Senate approve the Periodic Program Review for Philosophy, Bachelor of Arts (Honours) - Faculty of Arts.***

G. TRSM - Business Technology Management Co-op Option - Amended Work Term Number and Sequencing Proposal

Executive Summary

The purpose of this proposal is to provide the rationale behind dropping the 1st work term in the BTM Co-op program and aligning the number of work terms with all other Co-op programs at TRSM.

1.0 Introduction

This document proposes a framework for an amendment to the sequence of academic study and Co-operative education (Co-op) work terms in the BTM – Co-operative Education Program at TRSM, commencing in the 2023-2024 academic year.

The TRSM has as its mission the delivery of a relevant, applied, and up-to-date business curriculum that produces graduates who are ready to contribute to the business community.

The purpose of the Co-op option is to train students in all programs, including BTM, for applied work in the private and public sectors by offering students a combination of rigorous training in academic theory, and in an off-campus, work-based setting. Through past Co-op offerings, we know that students desire a degree that can provide a stronger background in an applied setting that is not ordinarily offered by a purely academic degree.

2.0 Rationale for Modification to Existing Co-op Education Sequence

Currently, students in the Co-op option of the BTM program, are required to complete five work terms before they graduate.

The proposed change of the Co-op work term sequence for BTM brings it in line with other Co-op program requirements, in that the number of work terms will be reduced to four. This will be accomplished by eliminating the 1st work term that takes place in the Summer following 2nd year. As a result, the first work term in the new proposed sequence will start in Fall of their third year.

In addition to aligning with other programs, another advantage of the new sequence resulting from the removal of the first work term is that students will now be starting their Co-op work terms in the Fall, and hence will be more likely to secure employment since in Fall terms, there are fewer students overall competing for roles.

The sequence of courses in the program will not be impacted by the proposed Co-op sequence. Course material covered prior to an initial work term is compatible with the demands of a Co-op option and needs of the employer community.

The proposed new sequence will continue to meet the program accreditation standards of Co-operative Education and Work-Integrated Learning Canada (CEWIL). As well, both the Director of Co-operative Education and Careers, TRSM, and the Manager of Co-operative Education fully support the proposed sequence of work and study.

3.0 Program Description Summary

Co-operative Education combines traditional, in-class education with hands-on experience. Co-op students in the BTM program alternate study terms with four-month work terms.

- BTM Co-op program is optional
- admission to the Co-op option is competitive
- the number of students admitted each year is determined by eligibility and job availability
- the student will request acceptance into the Co-op option by way of the application by June 1 following the completion of year one studies
- academic credits for the Co-op work terms will not be awarded; work term(s) will be additional to the basic requirements of the degree program
- the Co-op placement will be evaluated by the staff of the Co-op Programs unit at TRSM and a Faculty Advisor
- the Co-op work term is graded on a Pass or Fail basis

4.0 Enrolment and Enrolment Projections

As of April 13, 2022, there are currently 541 undergraduate students enrolled in the BTM Co-op program representing 22.02% of the total BTM enrolment and 24% of the Co-op enrolment at TRSM. Students register directly into the BTM co-op stream at the end of their 1st year by June 1st.

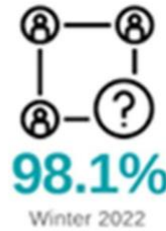
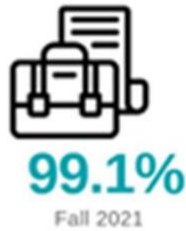
Table 1: BTM– Past Intake: 2017 – 2021

2017 2018 2019 2020 2021

Intake	79	120	149	239	148
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Current BTM Employment Rates by Semester

Average Employment Rate



Business Technology Management Employment Rate



5.0 Existing Co-op Sequence and Amended Co-op Sequence

Current BTM Co-op students will remain on the existing academic and work term sequence under which they entered the program, as outlined below.

Current BTM Work Term Sequence Schedule

	Fall	Winter	Spring/Summer
Year 1	1st semester	2nd semester	
Year 2	3rd semester	4th semester	WKT 1
Year 3	WKT 2	5th semester	WKT 3

Year 4	6 TH semester	WKT 4	WKT 5
Year 5	7 th semester	8 th semester	

Proposed BTM Work Term Sequence

The new sequence will be applied to all students accepted into the Co-op option as of June 2024.

	Fall	Winter	Spring/Summer
Year 1	1st semester	2nd semester	
Year 2	3rd semester	4th semester	
Year 3	WKT 1	5th semester	WKT 2
Year 4	6 TH semester	WKT 3	WKT 4
Year 5	7 th semester	8 th semester	

Specific Curriculum Changes

No changes to course sequencing or curriculum are required. WKT100 is moved to Fall semester in Year 3, and subsequent work terms are renumbered but remain in the current semesters..

6.0 Student Feedback

The Business Career Hub and TRSM Co-op Office encourage students to provide feedback about the job search process, work term experience, and quality of services provided.

A topic that routinely comes to the attention of our Co-op Office staff is that students find it more challenging to secure a 1st work term in the Summer, because they are competing with many more Co-op and non-Co-op students seeking work during the Summer semester.

Changing the first work term for BTM students from Summer to Fall, alleviates pressure on students and improves their ability to secure a work term earlier.

A survey of BTM Co-op students that was conducted prior to the COVID-19 pandemic revealed that at least 50% of the BTM Co-op students at the time were in favor of the proposed change. Informal feedback collected from students during the pandemic semesters indicates a similar, if not higher, level of support. In the past year, approximately 50% of the BTM Co-op students were given approvals to graduate with at least one missed Co-op work term. More often than not, the missed work term(s) includes the first work term (which is currently completed in the Summer term following the second year).

7.0 Additional Resources Required

The BTM program does not anticipate requiring additional faculty resources to accommodate the proposed change.

We also rely on the Business Career Hub (BCH), and its complement of staff, to help our students find jobs and hone their professional skills. The BCH team currently have seven dedicated Co-op Coordinators on staff to support students in their job search and placement, in addition to three Co-op Administrators, and five Managers of Corporate Partnership (focused on employer development).

8.0 Comparator Program Sequences

When evaluating the Co-op sequencing of comparator schools in Ontario, Laurier offers a BTM program and offers three work terms, starting in the Fall of their 3rd year.

Laurier- Bachelor of Business Technology Management

Year	Fall (September to December)	Winter (January to April)	Spring (May to August)
1	Study Term	Study Term	Break
2	Study Term	Study Term	Study Term
3	Work Term 1	Work Term 2	Study Term
4	Work Term 3	Study Term	Study Term

Source: <https://www.wlu.ca/programs/assets/resources/btm-co-op.html>

9.0 Calendar Description

Please refer to Appendix A.

10.0 Consultations – Completed

Consultation Contact	Comments
School of ITM	April 19, 2022
Undergraduate Curriculum Committee (UCC)	April 26, 2022
Dr. Cynthia Holmes, Associate Dean, Faculty and Academic	April, 2022
Business Career Hub	Ongoing from 2020

11.0 How Will Changes to the Co-op Education Sequence be Communicated

We are requesting the proposed resequencing of Co-op work terms be reflected in the 2023-2024 University Calendar and effective for students admitted into Co-op in June 2024- their 1st work term will take place in Fall 2025.

We have several communication modes through which we will communicate these changes to employers and students:

- 1) Student and Employer Emails: contact data from our Salesforce and Orbis databases
- 2) Career Consultants and Co-op Coordinators will work closely with students and employers
- 3) Co-op Web-site
- 4) Co-op E-Newsletter

12.0 Implications for External Recognition and Professional Accreditation

The proposed resequencing of work term sequences for BTM continues to align with the requirements for CEWIL accreditation.

13.0 Approvals

ITM School Council: April 19, 2022

Undergraduate Curriculum Committee (UCC): April 26, 2022

TRSM School Council: May 11, 2022

Appendix A- Current Detailed Calendar Description

Source: https://www.ryerson.ca/calendar/2022-2023/programs/trsm/business_tech/

Full-Time, Five-Year Co-Op Program

The School also offers an optional co-op program which provides graduates with up to 20 months of work experience integrated into their academic program.

Students wishing to be considered for this program must apply for admission into the co-op option after the second semester of the program. Admission into the co-op program is based on the following three items:

1. A recommended CGPA of 2.8 (or higher), subject to competition
2. Evidence of superior oral and written communication skills
3. A Resume/Cover Letter and interview

Students begin work terms upon completion of second year of the program and the co-op program extends the BTM program to five years from four. The School cannot guarantee work term jobs, but the [Business Career Hub](#) (BCH) will prospect for employers and make every effort to locate suitable positions, as well as be available to advise students on their search for program-related jobs. The co-op program enables students to earn prevailing wages for the level of responsibility and contribution of the jobs they perform and thus finance at least part of their university education.

1st & 2nd Semester

1st Semester

REQUIRED:

- [CMN 279](#) Introduction to Professional Communication
- [GMS 200](#) Introduction to Global Management
- [ITM 100](#) Foundations of Information Systems
- [ITM 107](#) Managerial Decision Making
- [SSH 105](#) Critical Thinking I

2nd Semester

REQUIRED:

- [ECN 104](#) Introductory Microeconomics
- [ITM 207](#) Computer-Enabled Problem Solving
- [MHR 405](#) Organizational Behaviour
- [QMS 210](#) Applied Mathematics for Business

LIBERAL STUDIES:

One course from [Table A - Lower Level Liberal Studies](#).

3rd & 4th Semester

3rd Semester

REQUIRED:

- [ACC 100](#) Introductory Financial Accounting
- [ITM 200](#) Fundamentals of Programming
- [ITM 301](#) IT Infrastructure
- [MKT 100](#) Principles of Marketing

LIBERAL STUDIES:

One course from [Table A - Lower Level Liberal Studies](#).

4th Semester

REQUIRED:

- [ACC 406](#) Introductory Management Accounting
- [ITM 305](#) Systems Analysis and Design
- [ITM 500](#) Data and Information Management
- [LAW 122](#) Business Law

LIBERAL STUDIES:

One course from [Table A - Lower Level Liberal Studies](#).

5th & 6th Semester

For students admitted Fall 2019. Students admitted Fall 2020 and after, see revised curriculum below.

5th Semester (Offered in Winter Only)

REQUIRED:

ECN 204 Introductory Macroeconomics
ITM 706 Enterprise Architecture
ITM 820 Information Systems Security and Privacy

LIBERAL STUDIES:

One course from Table B: Upper Level Liberal Studies

CORE ELECTIVE: One course from Table I.

6th Semester (Offered in Fall Only)

Begins and is last offered Fall 2022

REQUIRED:

FIN 300 Managerial Finance I
ITM 618 Business Intelligence and Analytics
ITM 750 IS Project Management

LIBERAL STUDIES:

One course from Table B: Upper Level Liberal Studies

CORE ELECTIVE: One course from Table I.

5th & 6th Semester

Revised curriculum begins 2022-2023 for students admitted Fall 2020 and after.

5th Semester (Offered in Winter Only)

Begins Winter 2023

REQUIRED:

ECN 204 Introductory Macroeconomics
ITM 706 Enterprise Architecture
ITM 820 Information Systems Security and Privacy

LIBERAL STUDIES:

One course from **Table B**: Upper Level Liberal Studies

CORE ELECTIVE: One course from Table I.

6th Semester (Offered in Fall Only)

Begins Fall/ 2023

REQUIRED:

FIN 300 Managerial Finance I
ITM 618 Business Intelligence and Analytics
ITM 415* Business Process Management

CORE ELECTIVE: One course from Table I.

LIBERAL STUDIES:

One course from **Table B**: Upper Level Liberal Studies

**ITM 415 and ITM 706 will be timetabled in either 5th or 6th semester.*

7th & 8th Semester

For students admitted Fall 2018 and Fall 2019. Students admitted Fall 2020 and after, see revised curriculum below.

7th Semester

REQUIRED:

- ITM 415 Business Process Management
- ITM 707 Strategy, Management and Acquisition

CORE ELECTIVE: One course from Table I.

OPEN ELECTIVES: Two Open Electives

8th Semester

REQUIRED:

- ITM 900 Capstone Project

LIBERAL STUDIES:

One course from Table B - Upper Level Liberal Studies.

CORE ELECTIVE: One course from Table I

OPEN ELECTIVES: Two Open Electives

7th & 8th Semester

Revised curriculum begins 2023-2024 for students admitted Fall 2020 and after.

7th Semester

REQUIRED:

- ITM 707 Strategy, Management and Acquisition
- ITM 750 IS Project Management

CORE ELECTIVE: One course from Table I.

OPEN ELECTIVES: Two Open Electives

8th Semester

REQUIRED:

- ITM 900 Capstone Project

LIBERAL STUDIES:

One course from Table B - Upper Level Liberal Studies.

CORE ELECTIVE: One course from Table I

OPEN ELECTIVES: Two Open Electives

Sequence of Academic and Work Terms

The sequencing of academic and work terms is shown below:

	Fall	Winter	Spring/Summer
Year 1	1st Semester	2nd Semester	
Year 2	3rd Semester	4th Semester	WKT 100 - Work Term I
Year 3	WKT 200 – Work Term II	5th Semester	WKT 300 - Work Term III
Year 4	6th Semester	WKT 400 - Work Term IV	WKT 502 - Work Term V
Year 5	7th Semester	8th Semester	

Work terms are graded on a pass/fail basis. Each work term is assessed by the Co-op Faculty Advisor on the basis of the student's comprehensive written report and the employer's evaluation of the student's performance on the job.

Students are expected to follow the sequence prescribed for their program. Deviation from the sequence requires the submission of a formal request to the School. With permission from the School, students may be allowed to graduate with the co-op designation with fewer than the prescribed work terms.

Recommendation

Having satisfied itself of the merit of this proposal, the Academic Standards Committee recommends: ***That Senate approve Business Technology Management Co-op Option - Amended Work Term Number and Sequencing Proposal - Ted Rogers School of Management.***

H. For Information: CHANG SCHOOL CERTIFICATES – Revisions (April/May 2022)

- i) Certificate in Certificate in Digital Art Production: Course Deletions/Addition (Elective)
- ii) Certificate in Publishing: Course Addition (Elective)
- iii) Certificate in Project Management: Course Deletions (Elective)
- iv) Certificate in Project Management for Technical Professionals: Course Deletions (Elective)
- v) Certificate in Ethics: Course Deletion (Elective)
- vi) Certificate in Health Informatics: Course Deletion (Elective)
- vii) Certificate in Health Studies: Course Deletion (Elective)


I. For Information: 1-year follow-up report for Periodic Program Review: School of Business Management

Introduction

The School of Business Management is pleased to present its one-year follow-up report to the periodic program review that was completed and approved by the Senate in June 2021. Structured similarly to the self-study report, this report will begin with updates on the program-level recommendations, followed by updates from each of the Departments representing the seven Business Management majors. An appendix has been included for additional information and supporting documentation.

Progress Updates

Program Recommendations

RECOMMENDATION AND IMPLEMENTATION PLAN	
Recommendation # 1	
Recommendation: Reduce total number of courses in program to 40.	
Rationale: Reducing the number of courses from 42 to 40 will bring the program in line with the standard requirements for an undergraduate degree program. The change will also reduce students' workload, which will in turn provide students with a better work-study-life balance.	
Objective: Reduce total number of courses in program to 40.	
Actions: Starting fall 2019, the program no longer required students to complete BUS 100, which reduced the overall number of program courses by one. Looking ahead, departments will review their professional required, professional elective, and professionally-related courses in order to determine the appropriate category to make a further reduction. In co-ordination with the Dean's Office, a plan will be developed and implemented to re-balance the curriculum across the four years of the program, ensuring that each semester has no more than five courses.	
Timeline: Recommendation was first proposed December 2019 and will go through the required approvals process for implementation in Fall 2021.	
Responsibility for leading initiative: Cynthia Holmes, Associate Dean, Faculty and Academic	
Responsibly for approving recommendation, providing any resources made necessary by the recommendation, and overall monitoring of the implementation of the recommendation: Department Councils, SBM Curriculum Sub-Committee, Undergraduate Curriculum Committee, Faculty Council, Curriculum Management, Vice-Provost Academic	
	Progress Update: The 40-course curriculum was approved by the TRSM Faculty Council and the Senate and successfully implemented in Fall 2021. The new curriculum is not retro-active, so it will take a minimum of four years for students to graduate from the program under the new requirements.
Recommendation # 2	
Recommendation: Hire more RFA faculty members to address high student-faculty ratios.	
Rationale: High student-faculty ratios reduce the pedagogical options for faculty members, increase the classroom management effort, and decrease the level of personal attention available to students. More RFA faculty members would improve the educational experience for students.	
Objective: Reduce the average student-to-faculty ratio across SBM departments to be equal to the average level for Toronto Metropolitan University. (Currently, the SBM average is 37.9 and the Toronto Metropolitan University average is 27.9).	
Actions: Prepare hiring plan proposals for submission to the offices of the TRSM Dean and Provost.	

	<p>Timeline: Take consistent steps in making progress towards the objective every year, achieving the Toronto Metropolitan University average student-to-faculty level by 2026-2027.</p>
	<p>Responsibility for leading initiative: Cynthia Holmes, Associate Dean, Faculty and Academic</p>
	<p>Responsibly for approving recommendation, providing any resources made necessary by the recommendation, and overall monitoring of the implementation of the recommendation: Office of the Dean, TRSM and Toronto Metropolitan University Provost</p>
→	<p>Progress Update: The School of Business Management is in the process of hiring 6 new faculty, with a start date of July 1st, 2022. Future hiring will depend on direction given by the Provost's Office.</p>
	<p>Recommendation # 3</p>
	<p>Recommendation: Create new integrative learning opportunities at the reinforcement level for the program.</p>
	<p>Rationale: In the analysis of the core curriculum mapping for the program, it was revealed that there is no reinforcement of Learning Outcome 1C (i.e. Integrate and apply the functional areas of business into the strategic management process to support principal organizational objectives). In order to strengthen the development of this learning outcome from its introduction, to the point at which the student is expected to reach proficiency, it is recommended that new integrative learning opportunities are created to bridge this gap.</p>
	<p>Objective: The SBM Curriculum Sub-committee will set a priority to explore options related to new integrative learning experiences (e.g. modules, new courses, co-teaching, etc.), and select a feasible course of action that will enhance students' learning with respect to LO 1C.</p>
	<p>Actions: The Curriculum Sub-Committee will begin exploring options for new integrative learning opportunities in the 2021-2022 academic year, with the intent of developing an implementation plan. Depending on outcomes of the implementation plan (e.g., a new course), timeline may extend to 2023-2024 in order for the changes to come into effect.</p>
	<p>Timeline: 2021 - 2024</p>
	<p>Responsibility for leading initiative: Cynthia Holmes, Associate Dean, Faculty and Academic</p>
	<p>Responsibly for approving recommendation, providing any resources made necessary by the recommendation, and overall monitoring of the implementation of the recommendation: Department Councils, SBM Curriculum Sub-committee, UCC, Faculty Council</p>
→	<p>Progress Update: Related to Entrepreneurship Recommendation #5, a mid-level integrative strategy course (BUS 600) has been created and approved. The course will be offered as an open elective in 2022-2023 or the following year. The School will continue to investigate ways to reinforce business integration in the program curriculum.</p>
	<p>Recommendation # 4</p>
	<p>Recommendation: Ensure that the program includes active and experiential learning for every student.</p>
	<p>Rationale: While the program identified several experiential learning opportunities for students, many of these learning opportunities are only available through extra-curricular and elective courses. Beyond GMS 401, which is one required core courses where experiential learning takes place, the program desires to enhance the current array of programming available to students. This would include embedding more active and experiential learning opportunities in required courses across the core and major-specific curricula.</p>
	<p>Objective: Identify appropriate core and major-specific courses to embed active and experiential learning. Work with faculty to develop new learning opportunities for students, while ensuring that there are sufficient physical resources to support these initiatives.</p>

Actions: Consult with the TRSM Learning and Innovative Teaching Committee, as well as the Centre for Excellence in Learning and Teaching, in order to identify best practices across the faculty. Present ideas to SBM Curriculum Sub-Committee, discuss findings, and reach consensus on viable options for expanding experiential learning in the Business Management program.

Timeline: Following consultations in the fall of 2021, the SBM Sub-committee will reconvene in winter 2021 to develop an implementation plan for the fall of 2022.

Responsibility for leading initiative: Cynthia Holmes, Associate Dean, Faculty and Academic

Responsibly for approving recommendation, providing any resources made necessary by the recommendation, and overall monitoring of the implementation of the recommendation: SBM Curriculum Sub-Committee, Dean's Office, Learning and Innovative Teaching Committee, Centre for Excellence in Learning and Teaching

➔ **Progress Update:** The School has addressed this recommendation through the creation of several new exciting courses. These courses include: GMS 630: Case Experiences (case analysis and presentations), REM 770: Global Real Estate (international travel experiences), BUS 777: Business Research Methods (development of practical research skills), and ENT 101 (student engagement and involvement with Toronto Metropolitan University's entrepreneurial ecosystem). Innovative course development represents an ongoing commitment to expanding experiential learning at the Ted Rogers School.

Recommendation # 5

Recommendation: In light of the curriculum mapping analysis, review and optimize program learning outcomes.

Rationale: While the curriculum mapping exercise required for periodic program review illuminated several areas of the curriculum that require attention, it also revealed deficiencies in the design and articulation of the learning outcomes. In particular, it became apparent that several outcomes were too specific and consequently only mapped to one or two courses. This observation applied mostly to the 'Business Functions' learning outcomes, raising concerns about whether these were appropriate outcomes for the program, or whether they were actually course objectives. It is recommended that the SBM Curriculum-Subcommittee carefully review the program learning outcomes and make revisions, where necessary.

Objective: Review and optimize program learning outcomes.

Actions: The SBM Curriculum Sub-Committee will meet to review and make changes to the program learning outcomes.

Timeline: Fall 2021

Responsibility for leading initiative: Cynthia Holmes, Associate Dean, Faculty and Academic

Responsibly for approving recommendation, providing any resources made necessary by the recommendation, and overall monitoring of the implementation of the recommendation: SBM Curriculum Sub-Committee

➔ **Progress Update:** The SBM Curriculum Sub-Committee met several times over the Fall semester (2021) to discuss the program learning outcomes. After extensive discussions, the committee elected to remove the subset of outcomes related to business functions and make several revisions to the remaining outcomes. The revised list of learning outcomes provides a more concise articulation of the skills, knowledge and values expected of our graduates. See Appendix A for the list of revised outcomes.

Recommendation # 6

Recommendation: Examine how to address Learning Outcome 8b (sustainability) at the reinforcement level in the curriculum.

Rationale: The curriculum mapping exercise revealed that Learning Outcome 8b is not currently addressed at the reinforcement level of the curriculum. In an effort to ensure consistency and progression across the curriculum, an examination should be conducted of the current lesson plans relating to this topic and a plan developed to reinforce this learning outcome in (an) appropriate mid-level course(s).

Objective: Establish a working group to examine current best practices relating to sustainability pedagogy and curriculum at TRSM. Information will be presented to the SBM Curriculum Sub-Committee, which will guide curricular decision-making.

Actions: Establish a working group to conduct analysis and present findings to SBM Curriculum Sub-Committee. Develop plan to implement curricular revisions relating to LO 8b.

Timeline: 2021-2022

Responsibility for leading initiative: Cynthia Holmes, Associate Dean, Faculty and Academic

Responsibly for approving recommendation, providing any resources made necessary by the recommendation, and overall monitoring of the implementation of the recommendation: Office of the Dean; SBM Curriculum Sub-Committee

➔ **Progress Update: [Delayed]** As a result of prioritizing several other recommendations (e.g. reviewing program learning outcomes; vetting a new entrepreneurship course), the Curriculum Sub-committee has not yet had an opportunity to address this recommendation. With that in mind, TRSM has recently scored #1 in undergraduate and #3 in MBA in sustainability strength, in an arms-length rating by Corporate Knights. Drawing on our resources and professorial expertise will be key to identifying next steps for addressing LO 8b (e.g., adding more optional courses and/or boosting sustainability content in existing core courses).

Recommendation # 7

Recommendation: Investigate and implement strategies to integrate entrepreneurship into the program curriculum.

Rationale: The mapping exercise revealed that very little of the program curriculum addresses the two learning outcomes related to entrepreneurship (LO 2g; LO 9a). This finding is particularly concerning given the overarching mission statement, which asserts that the Ted Rogers School of Management is "Canada's preeminent entrepreneurial-focused business school." While the School offers students opportunities to engage in entrepreneurial extra-curricular activities, greater effort should be made to ensure that all students in the program are exposed to entrepreneurial ideas through the curriculum.

Objective: The SBM Curriculum Sub-Committee will collaborate with the Entrepreneurship & Strategy Department to identify curricular opportunities that address Learning Outcomes 2g and 9a, and develop an appropriate and timely implementation plan.

Actions: Consult with the Entrepreneurship & Strategy Department and explore viable options for integrating more entrepreneurial content into the program curriculum.

Timeline: 2021-2022

Responsibility for leading initiative: Cynthia Holmes, Associate Dean, Faculty and Academic; Chair of the Entrepreneurship & Strategy Department

Responsibly for approving recommendation, providing any resources made necessary by the recommendation, and overall monitoring of the implementation of the recommendation: Office of the Dean; SBM Curriculum Sub-Committee; Entrepreneurship & Strategy Department

➔ **Progress Update:** The Entrepreneurship & Strategy Department has proposed a first-year course, ENT 101 Building an Entrepreneurial Mindset, that will be required for all Business Management students. The new course will be primarily focused on developing students' entrepreneurial and communication skills by using a flipped classroom format and utilizing the Tedpack communities already built into the first-year experience of the program. The course will replace CMN 279, which is currently taught by the School of Professional Communication.

The course has been approved by the TRSM Faculty Council (May 11th, 2022) and will be submitted to Undergraduate Publications later this year. A draft of the course outline can be found in Appendix B.

Recommendation # 8

Recommendation: Evaluate the effectiveness of QMS 110 in developing students' quantitative skills.

Rationale: QMS 110 is a new course that was recently added to the core curriculum of the program. The course was designed to address deficiencies with respect to the mathematical proficiency of incoming students and therefore provide a foundational set of knowledge and skills for the program. It is recommended that an analysis be conducted of whether or not the course has been successful in strengthening students' math competencies, in order to make improvements or adjustments to the course curriculum.

Objective: Initiate plan to monitor student success in QMS 110 and implement curricular changes, if necessary.

Actions: Monitoring student success in QMS 110 will include several strategies. Possible metrics could include: drop and failure rates, course grades, course feedback, monitoring student activity at the Academic Success Centre, and tracking student success in other quantitatively demanding courses.

Timeline: 2021-2022

Responsibility for leading initiative: Cynthia Holmes, Associate Dean, Faculty and Academic; administrative staff

Responsibly for approving recommendation, providing any resources made necessary by the recommendation, and overall monitoring of the implementation of the recommendation: Office of the Dean

➔ **Progress Update:** Several updates have been made to QMS 110 in order to enhance student learning and better prepare students for course assessments. These updates included moving to a more stable homework platform and adopting a new textbook, both of which are supplied by Pearson Canada. In addition, the instructor has indicated that assignment difficulty will be re-calibrated to ensure that students are sufficiently prepared for examinations.

Student learning support is offered through the Academic Success Centre via peer learning as well as the Toronto Metropolitan University Math Centre. Math Kickstarters are also offered prior to the start of the fall semester, although uptake is typically low.

The School is satisfied with the development of students' quantitative skills through the completion of the QMS 110. The teaching department (Global Management Studies) will continue to monitor student performance and make adjustments as part of their standard course review process.

Major-specific Recommendations

Economics and Management Science

RECOMMENDATION AND IMPLEMENTATION PLAN

Recommendation 1: Replace QMS 703: Business Forecasting Techniques with ECN 702: Econometrics II.

Recommendation: Students in the Economics & Management Science major are currently required to take QMS 703 in 5th/6th semester. We propose replacing this requirement with ECN 702 (which is currently a Professional elective in 7th/8th semester). More specifically, we propose requiring ECN 702 in 7th semester, and therefore adding one Professional elective in 5th/6th semester (in place of QMS 702) and removing one Professional elective in 7th/8th semester (to accommodate the addition of ECN 702).

Rationale: In preparing the self-study, several issues with the major became apparent:

- There is currently no “capstone” course in the major.
- There is a heavy reliance on tests/exams in required courses (as opposed to other forms of evaluation).
- There are not any required courses in the major that focus on “non-technical” skills.

We propose slightly re-designing ECN 702: Econometrics II and adding it as a required course in the major to address these concerns. Specifically, ECN 702 would be added as a required course in 7th semester. Currently, there are no required courses specific to the major in 7th/8th semester, so ECN 702 would be clearly situated as the “capstone” course in the major. This change also has the advantage of offering more choice to students in 5th/6th semester. Currently, there are 6 required courses, 2 Professionally-Related electives, and 2 Liberal Studies in 5th/6th semester. The proposed change would thus reduce the number of required courses in 5th/6th semester from 6 to 5, while increasing the number of Professional electives in 5th/6th semester from 0 to 1, which would allow students the opportunity to start exploring various sub-fields in the discipline (e.g., Labour Economics or Environmental Economics) at an earlier point.

The content of ECN 702 would also be slightly adjusted to make the objective of the course focused more on developing general “applied” skills rather than more narrow topics in econometric theory. The course would also be re-designed with a greater emphasis on assignments/projects rather than tests/exams, which would create the opportunity for students to become more proficient in their communication skills.

There are several reasons for proposing that QMS 702 be the required course that is eliminated in order to make room for the addition of ECN 702. Most importantly, the level of QMS 703 is simply too low for students in the major. QMS 703 (currently required in 5th/6th semester) requires only QMS 210 as a pre-requisite (QMS 210 is required for all Business Management students in 2nd semester). In this sense, QMS 703 does not take advantage of the more advanced quantitative training that students receive in 3rd/4th semesters (specifically, QMS 702, QMS 442, and ECN 230). QMS 703 can be contrasted with ECN 627: Econometrics I, which is also required in 5th/6th semester. ECN 627 requires both QMS 442 and ECN 230 as a pre-requisites (and ECN 230 requires QMS 702 as a pre-requisite). In fact, students in the major usually take ECN 627 in the 6th semester (fall) and QMS 702 in the 7th semester (winter), since QMS 703 is normally offered only in the winter semester (in fact, QMS 703 is the only required course in the major that is not offered in both fall and winter, which is problematic). Accordingly, QMS 703 can be viewed as a “step down” from ECN 627 (i.e., QMS 703 is “easier” than ECN 627 even though ECN 627 is normally taken first). On the other hand, ECN 702 (which we propose replacing QMS 703 with) is clearly a “step up” from ECN 627 since ECN 627 is a pre-requisite for ECN 702.

Another issue with QMS 703 is that it is normally taught by a sessional instructor rather than an RFA member. In fact, QMS 703 is the only required course in the major that is not normally taught by an RFA member.

Objective: The proposed change would accomplish several objectives. First, a proper “capstone” course would be established for the major. Second, there would be at least one required course specific to the major that relies less on tests/exams as a form of assessment and more on assignments/projects. Third, there would be at least one required course specific to the major that is focused more on developing general “applied” skills rather than more narrow theoretical topics. Finally, the rigour of the program would be increased as a result of replacing a course which has been identified as being “too easy” with one that is substantially more advanced.

Actions:

- Communicate proposed change to the Global Management Department (which manages QMS courses).
- Formally vote on the proposed change at the Undergraduate Curriculum Committee (UCC) level.
- Pending approval at the UCC level, formally vote on the proposed change at the Faculty Council (FC) level.

Timeline: We anticipate putting the proposed change to a formal vote at the UCC level no later than mid-September of 2020. This allows time for the proposal to go to FC level so that it can be approved before the deadline to make changes calendar changes. Assuming the proposed change is adopted at the point, it would be first reflected in the 2021-2022 calendar. This means that it would only be applicable to students entering the Business Management program in the 2021-2022 academic year, and would thus not actually take effect until 2023-2024 academic year (when such students are in their 5th/6th semester). With that said, the Department of Economics would be willing to approve substitutions of QMS 703 with ECN 702 for any students requesting one as early as the 2021-2022 academic year.

Responsibility for leading initiative:

The responsibility will be shared by Dr. Brennan Thompson, Coordinator of the Economics & Management Science major (and member of the UCC) and Dr. Claustre Bajona, Chair of the Economics department.

Responsibility for approving recommendation, providing any resources made

necessary by the recommendation, and overall monitoring of the implementation of the

recommendation: Ultimate responsibility lies with both the Dean of TRS (since the major is part of the BComm in Business Management) and Dean of Arts (since the new required course, ECN 702 is offered by the Economics department, which is located in the Faculty of Arts).

➔ **Progress Update:** Replacing QMS 703: Business Forecasting Techniques with ECN 702: Econometrics II will be implemented in 2023-2024 for students admitted Fall 2021 and after. This change was noted in the 2021-2022 Undergraduate Calendar.

Entrepreneurship

RECOMMENDATION AND IMPLEMENTATION PLAN

Recommendation #1

Recommendation: Introduce a required Entrepreneurship and Innovation course to all Majors.

Rationale: As the self-study report clearly identifies, Learning Objectives 2g (explain key concepts and theories of innovation and unfinished and the stages in launching and growing a business) and 9a (demonstrate entrepreneurial orientation by working proactively and independently to promote innovation within an organization and or across sectors) are not addressed anywhere in the core

curriculum. Given that Toronto Metropolitan University identifies itself as Canada’s Innovation and Entrepreneurship University, this is a glaring inadequacy.

Objective: To equip SBM students with the innovation and entrepreneurial knowledge, skills and attitudes they need to succeed in today’s disruptive markets including alertness, proactivity, internal locus of control, adaptability, resiliency, growth mindset and self-management.

Actions:

1. Identify possible alternative ways to add such a course within the new 40-course maximum now being established for TRSM. (Several initial options for consideration are attached to this Recommendation.)
2. Discuss these choices with the UCC to determine the most appropriate approach
3. Develop a detailed description for the new course and how it will fit into the curriculum design for each Major.
4. Progress the curriculum changes through UCC, Faculty Council, Standards Committee and the Registrar.

Timeline: This is a major change and needs proper discussion, we would anticipate an immediate start to the dialogue with the objective of making a decision in Fall 2020, for implementation for the 2022-23 academic year.

Responsibility for leading initiative: Department Curriculum Committee

Responsibly for approving recommendation, providing any resources made necessary by the recommendation, and overall monitoring of the implementation of the recommendation: Department Curriculum Committee, UCC, Dean, Standards Committee, Registrar

Progress Update: Action steps #1-3 have been completed and resulted in the creation of a new core required course (ENT 101) for the Business Management program. ENT 101 has been supported by the Undergraduate Curriculum Committee and approved by the TRS Faculty Council in May 2022.

Over the next year, Steve Gedeon (course lead/instructor) will be developing resources including new content creation, videos, instructional materials, quizzes, teaching notes and grading rubrics. The course will be first offered in Fall 2023 and delivered to approximately 2,000 students.

Recommendation #2

Recommendation: Investigate a change in the name of the Major from “Entrepreneurship” to “Entrepreneurship & Innovation”

Rationale: Toronto Metropolitan University is seen as Canada’s Innovation and Entrepreneurship University. While the Major has always treated its subject in a broad manner, including innovation as a key element, the label “Entrepreneurship” is sometimes seen as a barrier to some potential students, who mistakenly believe that the Major is only for those students planning to start their own businesses.

Objective: To provide a better “label” for the Major indicating the broad nature of the offering that will be visible to both students and potential employers.

Actions: Curriculum committee to investigate practices at other universities and any issues within Toronto Metropolitan University regarding a name change.

Timeline: Complete by early September 2020, in time to request calendar change for the following year.

Responsibility for leading initiative: Department chair, with Curriculum Committee

Responsibly for approving recommendation, providing any resources made necessary by the recommendation, and overall monitoring of the implementation of the recommendation: UCC, Dean, Standards Committee, Registrar

➔ **Progress Update:** The Department has approved this change and initiated consultations with the Vice-Provost Academic's Office to identify next steps in the process of re-naming the degree designation.

RECOMMENDATION AND IMPLEMENTATION PLAN

Recommendation #3

Recommendation: Change the ratio of required professional. courses to professional electives from the current 11:2 to 9:4.

Rationale: The Entrepreneurship Major has the largest number of required professional courses within SBM -- no other school has more than nine. This change will allow students greater choice and flexibility in how they configure their major. Additional professional electives will be offered (see recommendation ENT#4). While some of the specifics still need to be finalized, we also anticipate that we will replace the current year-long study course ENT 56 AB with two separate courses, increasing scheduling flexibility and resolving an issue around course scheduling.

Objective: Increase student choice and degree flexibility.

Actions:

1. April/May. Curriculum Committee to investigate choices and bring recommendations to Departmental Faculty Council meeting
2. June: Faculty Council discussion and approval
3. July/August: Final documentation of proposed changes
4. September: Bring changes to UCC
5. Implement for 2021/2022 academic year

Timeline: Complete by early September 2020, in time to request calendar change for the following year.

Responsibility for leading initiative: Department Curriculum Committee

Responsibly for approving recommendation, providing any resources made necessary by the recommendation, and overall monitoring of the implementation of the recommendation: Department Curriculum Committee, UCC, Dean

➔ **Progress Update:** The Entrepreneurship & Strategy Department presented a proposal in September 2020 to address the ratio of required core courses to core electives. The proposal was supported by the Undergraduate Curriculum Committee and approved by the TRS Faculty Council.

While the original objective of the department was to change the ratio of required to elective courses from 11:2 to 9:4, at this time the ratio has been modified to 10:3 (effective Fall 2021). As outlined in the original proposal, further dialogue with the School of Business Management would be required in order to make room in the curriculum for an additional core elective in the Entrepreneurship Major.

Recommendation #4

Recommendation: Modify the professional electives table for the Entrepreneurship Major to increase the number of Entrepreneurship courses and reduce the number of marketing courses.

Rationale: In recommendation ENT#3, we propose an increase in the number of professional electives within the major from 2 to 4 courses. In addition, we will increase the number of potential ENT electives

from the current 2 to 5 or 6 courses and reduce the number of marketing courses in the ENT Professional Electives list.

Objective: Increase student choice and degree flexibility.

Actions:

1. April/May: As part of recommendation ENT#3, the Curriculum Committee will recommend which professional required courses will change to be professional electives
2. May: Departmental faculty will be asked to propose new electives
3. June: Curriculum Committee will bring proposed new elective table to Department Council in conjunction with approval of the new Required Course Structure
4. July/August: Final documentation of proposed calendar changes
5. September: Bring changes to UCC
6. Implement for 2021/2022 academic year

Timeline: Complete by early September 2020, in time to request calendar change for the following year. However actual rollout of additional elective courses may take up to 2 years.

Responsibility for leading initiative: Department Curriculum Committee

Responsibly for approving recommendation, providing any resources made necessary by the recommendation, and overall monitoring of the implementation of the recommendation: UCC, Dean, Standards Committee, Registrar

➔ **Progress Update:** The Entrepreneurship & Strategy Department presented a proposal in September 2020 to modify the core elective table. The proposal was supported by the Undergraduate Curriculum Committee and approved by the TRS Faculty Council.

The Department successfully removed MKT 504, 723 and 730, and added RMG 922, ENT 620, 630, and 710. These changes were implemented Fall 2021.

Recommendation #5

Recommendation: Introduce two strategy-related electives to be available to all students within TRSM.

Rationale: Understanding strategy is a key element of every undergraduate degree. In many other business programs, in addition to a required (typically Capstone) strategy course students also have access to other courses within the discipline. At present, we do not offer any elective courses in the area.

Objective: Increase student access to important strategy topics.

Actions:

1. April/May 2020: Departmental faculty will be asked to propose possible strategy electives that might be included in the curriculum
2. June 2020: Initial discussion at the Department Faculty meeting about possible choices and agreement on direction and most likely courses that could be offered
3. September 2020: Final decision by Department Faculty on new courses to be offered
4. December: Faculty submit detailed course outlines for review by the Curriculum Committee
5. January 2021: Approval of the new courses by Department Council
6. March 2021: Final documentation of proposed calendar changes

7. April 2021: Bring changes to UCC 8. Implement for 2022/2023 academic year
Timeline: Complete by Spring, 2021 in time to request calendar change for the 2022/2023 academic year.
Responsibility for leading initiative: Department Curriculum Committee
Responsibly for approving recommendation, providing any resources made necessary by the recommendation, and overall monitoring of the implementation of the recommendation: Department Council, UCC, Dean, Standards Committee, Registrar
➔ Progress Update: The Entrepreneurship & Strategy Department has developed a new mid-level strategy course, BUS 600, which has been approved and is currently listed in the undergraduate calendar. This course supports Program Recommendation #3, which aims to add more integrative learning into the curriculum.
The course will be offered in 2022-2023 or the following year.

Global Management Studies

The Department of Global Management Studies did not make any recommendations in last year's periodic program review.

Human Resources Management

The Department of Human Resources Management did not make any recommendations in last year's periodic program review.

Law and Business

RECOMMENDATION AND IMPLEMENTATION PLAN
Recommendation #1
Recommendation: Move LAW534 into 3 rd year (and BUS223 into 2 nd) and make LAW204 a prerequisite for LAW534.
Rationale: Identified as desirable in PPR in order to build skills successively.
Objective: To ensure that all Law & Business majors acquire the preliminary legal methodological skills <i>before</i> engaging in substantive upper year law courses.
Actions: <ul style="list-style-type: none"> • <i>Discussed by Curriculum Committee during F2019</i> • <i>Ratified by Department Council during F2019</i> • <i>To be approved by UCC and Faculty Council</i>
Timeline: This is aimed to be in effect for the 2021-2022 academic year
Responsibility for leading initiative: <i>Chair</i>
Responsibly for approving recommendation, providing any resources made necessary by the recommendation, and overall monitoring of the implementation of the recommendation: Law and Business Department; TRSM's Undergraduate Curriculum Committee; TRSM Faculty Council; Senate.

<p>➔ Progress Update: The proposed changes relating to LAW534 and BUS223 were supported by the Undergraduate Curriculum Committee and approved by the TRS Faculty Council in 2021. Starting in 2022-2023, BUS223 will be required in the 2nd year of the program. In 2023-2024, LAW534 will be required in the 3rd year of the program. The change to the prerequisite for LAW534 is forthcoming.</p>
<p>Recommendation #2</p>
<p>Recommendation: Create a new, required course – LAW5XX – integrating legal and ethical frameworks & reasoning.</p>
<p>Rationale: Identified as desirable in PPR in order to further LO3 and LO4, which involve integration of ethical/social and legal thinking.</p>
<p>Objective: To ensure that all Law & Business majors acquire a sophisticated understanding of the differences and overlap between ethical and legal obligations of business.</p>
<p>Actions:</p> <ul style="list-style-type: none"> • <i>Discussed by Curriculum Committee during F2019</i> • <i>Ratified by Department Council during F2019</i> • <i>To be approved by UCC and Faculty Council</i>
<p>Timeline: This is aimed to be in effect for the 2021-2022 academic year</p>
<p>Responsibility for leading initiative: <i>Chair</i></p>
<p>Responsibly for approving recommendation, providing any resources made necessary by the recommendation, and overall monitoring of the implementation of the recommendation: Law and Business Department; TRSM’s Undergraduate Curriculum Committee; TRSM Faculty Council; Senate.</p>
<p>➔ Progress Update: The creation of a new course, LAW573: “Understanding the Ethical-Legal Nexus”, was supported by the Undergraduate Curriculum Committee and approved by the TRS Faculty Council in 2021. It will be first offered in 2023-2024.</p>
<p>Recommendation #3</p>
<p>Recommendation: Renumber LAW533 as LAW733, and changed from required to elective.</p>
<p>Rationale: Supports LO3 and LO4 (integrating ethics and law) by making room for LAW5XX.</p>
<p>Objective: Making it an elective compensates for the introduction of a new, required course (LAW5XX) combining ethics and law. Also to give this course a number that reflects the status of this course as an advanced course.</p>
<p>Actions:</p> <ul style="list-style-type: none"> • <i>Discussed by Curriculum Committee during F2019</i> • <i>Ratified by Department Council during F2019</i> • <i>To be approved by UCC and Faculty Council</i>
<p>Timeline: This is aimed to be in effect for the 2021-2022 academic year</p>
<p>Responsibility for leading initiative: <i>Chair</i></p>
<p>Responsibly for approving recommendation, providing any resources made necessary by the recommendation, and overall monitoring of the implementation of the recommendation: Law and Business Department; TRSM’s Undergraduate Curriculum Committee; TRSM Faculty Council; Senate.</p>

<p>➔ Progress Update: It was advised by Curriculum Management that course renumbering would not be possible. This aspect of the recommendation has been cancelled.</p> <p>LAW533 has been approved to move from a Required course to an Elective course, beginning 2024-2025. Pre-requisite change will be submitted in May 2023.</p>
<p>Recommendation #4</p> <p>Recommendation: LAW 603, LAW 5XX, and LAW 534 would all be prerequisites for LAW 722</p> <p>Rationale: To enhance sequencing in support of achieving mastery of concepts in capstone course, LAW722.</p> <p>Objective: To help ensure that LAW 722, our capstone course, is taken after other required courses.</p> <p>Actions:</p> <ul style="list-style-type: none"> • <i>Discussed by Curriculum Committee during F2019</i> • <i>Ratified by Department Council during F2019</i> • <i>To be approved by UCC and Faculty Council</i> <p>Timeline: This is aimed to be in effect for the 2021-2022 academic year</p> <p>Responsibility for leading initiative: <i>Chair</i></p> <p>Responsibly for approving recommendation, providing any resources made necessary by the recommendation, and overall monitoring of the implementation of the recommendation: Law and Business Department; TRSM’s Undergraduate Curriculum Committee; TRSM Faculty Council; Senate.</p>
<p>➔ Progress Update: These changes to the prerequisites for LAW 722 will be submitted in May 2023 and take effect in 2024-2025.</p>
<p>Recommendation #5</p> <p>Recommendation: Reduce the number of professional electives courses by eliminating one required professional elective course.</p> <p>Rationale: To implement the transition to a 40 courses program.</p> <p>Objective: To implement the transition to a 40 courses program in line with change in SBM norms.</p> <p>Actions:</p> <ul style="list-style-type: none"> • <i>Discussed by Curriculum Committee during F2019</i> • <i>Ratified by Department Council during F2019</i> • <i>To be approved by UCC and Faculty Council</i> <p>Timeline: This is aimed to be in effect for the 2021-2022 academic year</p> <p>Responsibility for leading initiative: <i>Chair</i></p> <p>Responsibly for approving recommendation, providing any resources made necessary by the recommendation, and overall monitoring of the implementation of the recommendation: Law and Business Department; TRSM’s Undergraduate Curriculum Committee; TRSM Faculty Council; Senate.</p>

<p>➔ Progress Update: In alignment with Program Recommendation #1, the Law and Business Department has removed one core elective course from the 3rd year of the program. This change will come into effect in 2023-2024.</p>
<p>Recommendation #6</p>
<p>Recommendation: ECN 321 to become a Group 2 Professional Elective course</p>
<p>Rationale: To enable Law and Business students access to this important course as a Professionally Related course.</p>
<p>Objective: ECN321 is currently included in the Law minor but <u>not</u> in the list of Professionally Related courses.</p>
<p>Actions:</p> <ul style="list-style-type: none"> • <i>Discussed by Curriculum Committee during F2019</i> • <i>Ratified by Department Council during F2019</i> • <i>To be approved by UCC and Faculty Council</i>
<p>Timeline: This is aimed to be in effect for the 2021-2022 academic year</p>
<p>Responsibility for leading initiative: <i>Chair</i></p>
<p>Responsibly for approving recommendation, providing any resources made necessary by the recommendation, and overall monitoring of the implementation of the recommendation: Law and Business Department; TRSM’s Undergraduate Curriculum Committee; TRSM Faculty Council; Senate.</p>
<p>➔ Progress Update: ECN321 has been successfully added to the Group 2 Core Elective Table. The change was implemented in 2021-2022.</p>

Marketing Management

<p>RECOMMENDATION AND IMPLEMENTATION PLAN</p>
<p>Recommendation #1 Redesign Marketing 100</p>
<p>Recommendation: Given the importance of MKT 100 to the department, faculty and university, we recommend that we redesign MKT 100 including the consideration of a second MKT100 course for non-TRSM students</p>
<p>Rationale: Students in the comments in the Dean’s survey for improvement to the program are looking for the teaching of contemporary practice to make them more employable. By creating a second marketing for non-marketing managements we will be able to improve the quality and quantity of marketing education provided. In the survey, students commented on the variety of background they encounter in class and feel that at times this impedes their progress.</p>
<p>Objective: To improve the quality of foundational marketing education for both TRSM and non-TRSM students</p>
<p>Actions:</p> <ul style="list-style-type: none"> • Meet with the various departments and faculties whose students take Marketing 100 to determine the alternative topics in the course to reflect contemporary practice in a variety of fields.
<p>Timeline: Submission of proposal to VPA by Fall 2020; commences Fall 2021</p>
<p>Responsibility for leading initiative: <i>e.g. Program Chair</i></p>

Responsibly for approving recommendation, providing any resources made necessary by the recommendation, and overall monitoring of the implementation of the recommendation: e.g. Faculty Dean

➔ **Progress Update:** The Department has recently completed a redesign of MKT100 to include a new synchronous blended format as an alternative delivery format which received support from every program/department except for HR. Additionally, a new Open Education Resource textbook has been developed for this course, which includes a copyright free textbook, instructional videos as well as a test bank (the test bank is still in progress). The Department will be completing a pilot of the new synchronous blended format this semester (Winter 2022) and plan to introduce it more widely in Fall 2022 forward. Depending on the success of the revised course, it may be offered in additional sections to meet student demand.

Recommendation #2 Review alternative delivery formats and schedules of all marketing courses.

Recommendation: We predominately use a lecture style format in our courses. Given the number of students we teach, we believe that respecting different learning styles as well as content requirements encourage us to move beyond lecture style to a more balanced approach where lecture accounts for 50% of the delivery formats.

Rationale: There were a number of comments in the Dean's survey from students that indicate that lecture style should only be one method, not 'the' method to convey information.

Objective: To improve the quality of foundational marketing education for both marketing majors and non-marketing majors

Actions:

- Improvement in the technology offered in the classroom to allow for more innovative teaching (greater internet bandwidth)
- Microphones and cameras in the classroom to allow students to chose in-person or virtual participation in classes
- Access to a variety of learning software in the classroom podiums
- Considering offering a year-long program of study rather than focus on two terms.
- As part of this consider a data analytics and creative stream within marketing to allow marketing majors who have a particular career in mind to gain additional momentum toward their career through learning about, and using specific technologies and software


Timeline: Long term as these require reconfiguring the classrooms across campus.

Responsibility for leading initiative: Program Chair

Responsibly for approving recommendation, providing any resources made necessary by the recommendation, and overall monitoring of the implementation of the recommendation: Faculty Dean

➔ **Progress Update:** The Department has begun addressing this recommendation with the changes to MKT100 (see Recommendation #1). Similarly, the Department has approved an alternate delivery format for MKT802 to begin in the Fall of 2022 forward. MKT802 sections will be offered with both in-person for 4 of the 12 classes with the remainder offered in a virtual format. The pedagogical approach lends itself well to this delivery format.

As for other courses, the Department will be initiating a renewal of their curriculum this summer and expect to look at other alternate delivery methods as part of that process.

Recommendation #3 Increase the major required courses to 12 which would put Marketing in line with other majors across campus
Recommendation: Increase the number of required courses for the marketing major from 9 to 12
Rationale: This would build a path for students to take 'double majors' within their 40 course curriculum. This would mean requiring that students take at least 3-4 courses from the list of MKT electives.
Objective: Increase the major required course in order to deepen students' marketing knowledge and expertise. Currently we are rushed in the existing courses to offer a greater exploration of key marketing topics.
Actions: <ul style="list-style-type: none"> • Begin to explore the ramifications of 12 required courses on the PR and Electives offered. • Conduct an industry survey to understand the 5-10 year needs of the marketing and advertising community
Timeline: Long term
Responsibility for leading initiative: Program Chair
Responsibly for approving recommendation, providing any resources made necessary by the recommendation, and overall monitoring of the implementation of the recommendation: Faculty Dean
 Progress Update: The Department plans on reviewing the required courses for the Marketing Management Major when it begins the curriculum renewal planning process this summer. The process will determine whether or not it is necessary to increase the number of required courses for the Major.

Real Estate Management

RECOMMENDATION AND IMPLEMENTATION PLAN
Recommendation #1
Recommendation: The REM Department is to build a number of new area-specific learning outcomes.
Rationale: The REM Department was founded in 2014 and have been focusing on delivering successfully the SBM's learning outcomes. Currently, the Department has only a single area-specific learning outcome. Now that the Department has achieved smoothly a degree of maturing, it is time to produce focused and concrete area-specific learning objectives.
Objective: See the rationale.
Actions: The REM Department curriculum committee takes a continuous improvement approach. It will build new learning objectives and, over time, will review the existing ones either to update their contents or to introduce new ones so that the Department's curriculum reflects the changes in the knowledge base and business practices. The development of new learning objectives moves forward along with the development of new courses, some of which is proposed and elaborated below.
Timeline: While development of learning objectives is dynamic, evolving and an ongoing long-run process, the curriculum committee of the REM Department will begin its work on this recommendation upon hearing the University's feedback on this Periodic Program Review report.
Responsibility for leading initiative: Department Chair and/or Chair of the Curriculum committee.

Responsibly for approving recommendation, providing any resources made necessary by the recommendation, and overall monitoring of the implementation of the recommendation: Undergraduate Curriculum Committee (both Department and Faculty levels), the Faculty Senate and the Dean's Office.

➔ **Progress Update:** The REM Department has been working on this for some time and has discussed and constructed a number of new and area-specific learning outcomes. Further, the Department is in the process of embracing changes in the course content and/or delivery of some of the existing courses or new courses proposed to be introduced soon or in the near future.

We are expecting to complete a great proportion of our work on this recommendation in the Fall 2022.

Recommendation #2

Recommendation: The REM Department is to cover and emphasize in more depth and breadth real estate topics from international markets and perspectives.

Rationale: By definition, real estate is an international topic. The wealth attached to real estate assets (homes, commercial properties and financial securities such as mortgages and secondary mortgage markets) is the largest by a substantial margin over the second largest asset category all over the world. Further, financial crises tend to correlate internationally with the dynamics of the real estate assets and markets. Thus, the REM Department will provide more depth and breadth on international topics.

Objective: See the rationale. Provide the REM students with a worldview and offer some degree of readiness to them for careers and opportunities all over the world.

Actions: The REM Department will update course contents to cover more depth and breadth in international topics and introduce an elective course with a focus on international real estate markets and topics. In the long run, there may be a few highly specialized elective or required courses on international real estate topics.

Timeline: 2021

Responsibility for leading initiative: Department Chair and/or Chair of the Curriculum committee and the instructors teaching the courses with a need for content update and the instructor who will develop the elective course.

Responsibly for approving recommendation, providing any resources made necessary by the recommendation, and overall monitoring of the implementation of the recommendation: Undergraduate Curriculum Committee (both Department and Faculty levels), the Faculty Senate and the Dean's Office.

➔ **Progress Update:** The Department has introduced an elective course, REM 770, and been building more international content into its courses. For example, REM 800 has several cases that cover several countries around the globe; REM 400 covers REITs, mortgage contracts and mortgage-backed securities by providing international comparisons; REM 620 also offer international discussions, among others. Lastly, the Department has approved a new Special Topics course that will allow students to undertake a major research/independent project related to industry trends.

Recommendation #3

Recommendation: The REM Department is to design and introduce opportunities for students to learn in some depth about indigenous cultures and to appreciate their special relationships with land and environment.

Rationale: This recommendation relates to the University's objective to embrace indigenous communities as well as its sharp focus on equity and diversity issues. This recommendation endorses the REM Department's recognition that embracing indigenous cultures is an important matter for TRSM and Toronto Metropolitan University and the community at large.

Objective: To embrace indigenous cultures and be a leading academic platform to address educationally the indigenous communities' real estate management practices, concerns and approaches in their fullest and broadest scope.

Actions: The REM Department has already begun to engage in this topic and will extend its efforts and initiatives to be able to implement a comprehensive approach to this matter.

The REM Department has been represented on the committee, tasked with building initiatives on indigenous communities and their visible and equitable representation within TRSM. The Chair of the REM Department is also meeting individually with some leading members of the indigenous communities.

Further, one of the REM students is currently travelling to the Arctic communities, registered in REM805, the special topics course, and tasked, among others, with a report on the land use and real estate management issues in these communities. The department will benefit from this report in identifying topics of interest to the department.

The Department aims to introduce a brand new course into its curriculum and recruit a colleague, who has indigenous heritage.

Timeline: Upon recruitment of a new colleague with indigenous heritage, the development of a new course and its integration into the curriculum should take approximately two years.

Responsibility for leading initiative: Department Chair and/or Chair of the Curriculum committee and the newly recruited instructor(s) who will design and teach this unique course.

Responsibly for approving recommendation, providing any resources made necessary by the recommendation, and overall monitoring of the implementation of the recommendation: Department Hiring Committee, Department Chair, Undergraduate Curriculum Committee (both Department and Faculty levels), the Faculty senate and the Dean's Office.

➔ **Progress Update:** The Department has been in touch with a colleague, with indigenous heritage in the Entrepreneurship & Strategy Department, Michael Mihalicz, and has asked for his guidance and assistance. Further, the Department invited an indigenous colleague, Cara Sanders, to a meeting so that she could provide a brief on various real estate related matters before the indigenous communities. It is the Department's hope that Ms. Sanders may join the PhD Program in Real Estate Studies in the near future. Finally, the Department is currently seeking an introduction to a University of Toronto professor, who has developed a course on the History of Indigenous Economies. It is the Department's hope that this introduction and ensuing conversations may be the seed of developing and integrating a similar course into the curriculum.

The Department is open-minded for all opportunities now and later to introduce, boost and/or bolster its offerings on real estate topics with indigenous content.

Recommendation #4

Recommendation: The REM Department is to prepare and submit an increasing number of Tri-council research grant proposals over time.

Rationale: This recommendation addresses the current PPR report's point on the research grants. The REM Department is young and maturing, has begun to submit Tri-council research grants and needs to make this matter one of its priorities in the years ahead. Success in the Tri-council research grants is one of the objective metrics of academic success for an academic and her/his institution.

Objective: To increase the submission and success rate in REM Department's Tri-council research grant applications and to remain active in producing research grant proposals over time.

Actions: The REM Department has already begun to engage in this topic and will extend its efforts and initiatives to be able to implement a comprehensive approach to this matter. It is expected that especially newly recruited colleagues will be active in producing Tri-council research grant proposals.

Timeline: The REM Department will be following the timelines established by the Tri-council bodies.

Responsibility for leading initiative: Department Chair and/or the academics in the department.

Responsibly for approving recommendation, providing any resources made necessary by the recommendation, and overall monitoring of the implementation of the recommendation: Department Chair and the Dean's Office.

➔ **Progress Update:** The Department is currently working on crafting a number of Tri-Council research grant proposals. The introduction of the PhD Program with a track in Real Estate Studies gives a lot of incentives to the members of the Department to be active in this scholarly domain. We hope and also expect to share success stories in the near future.

Appendix A: Revised Program Learning Outcomes

Business Knowledge & Integration

- 1a. Describe the diverse understandings of markets, organizations, stakeholders and the role of business in society, locally and globally.
- 1b. Integrate and apply the functional areas of business into the strategic management process to support principal organizational objectives.

Quantitative Analysis

2. Analyze quantitative data to assess and solve business problems.

Critical Thinking

3. Critically evaluate multi-dimensional business problems by applying appropriate decision-making techniques.

Communication

- 4a. Demonstrate proficiency in the use of written English and designated citation styles by producing audience-appropriate business documents in a variety of formats.
- 4b. Deliver oral presentations to diverse audiences using relevant support technology.

Teamwork

5. Contribute, collaborate and work effectively with team members to accomplish goals.

Information Technology

6a. Utilize IT knowledge and tools to support business strategies and enable business processes.

Social Consciousness

7a. Make and justify decisions by engaging in ethical reasoning to assess complex business issues.

7b. Identify ideas and solutions to sustainability challenges in a global business and societal context.

Entrepreneurial Mindset

8. Demonstrate an entrepreneurial mindset by working proactively and independently to promote innovation within an organization and/or across sectors.

Appendix B: ENT 101 Course Outline (Draft)

Building an Entrepreneurial Mindset

ENT 101 – Fall 2023 DRAFT Outline

COURSE INFORMATION

Pre-requisites and/or Exclusions: none

CALENDAR COURSE DESCRIPTION

This course will introduce students to the university's student engagement and entrepreneurship eco-system and help them build entrepreneurial skills and attitudes such as professional communication, empathy, persuasion, curiosity, proactivity, self-direction, self-management, resiliency, adaptability and a growth mindset. This course is not primarily concerned with starting a business, it is about learning how to think and act entrepreneurially to identify and co-create new values.

Based on flipped classroom experiential learning techniques, students will be exposed to a range of entrepreneurial ideas, tools, experiences and resources using a modular approach. They will work within their TedPack communities to apply these concepts to explore and get involved in the world class entrepreneurial ecosystem at our university. Students will be expected to gain hands-on experience building their entrepreneurial mindset.

COURSE OVERVIEW

Toronto Metropolitan University is one of the world's leading entrepreneurship programs with over 75 different courses, 15 full-time entrepreneurship faculty, 10 on-campus incubators, significant funding programs, Canada's first Ashoka Changemaker Campus and one of the world's largest student-run social entrepreneurship clubs with over 50 regional and national championships for helping people in need through the positive power of entrepreneurship. The Ted Rogers School of Management at Toronto Metropolitan University is Canada's preeminent entrepreneurial-focused business school that is shaping the country's next generation of global innovators and leaders.

This course is designed to help you learn about and become a part of this entrepreneurial community of global citizens. This is an experiential, hand-on, learn-by-doing course where you gain course credit for getting involved in Toronto Metropolitan University's student engagement and entrepreneurial eco-system and writing about your experiences. Since each of you is unique with your own interests, talents and life goals, the course is designed to help you craft your own customized learning experience while receiving support on your own entrepreneurial journey. You get out what you put into this course!

This is a Flipped Classroom format where students are expected to read, watch and complete assignments each week BEFORE the in-class workshops. Each in-class session will primarily consist of getting feedback on the assignments with your fellow class members, and discussing challenges and opportunities to improve.

Key learning outcomes of this introductory class include written and oral communication skills. Before you can spot opportunities to improve the lives of customers, users and/or stakeholders you must first understand them using skills like curiosity, empathy and active listening. Before you can build a team to join you in your mission, company or community project you must be able to motivate and persuade them through effective networking and communication. This course will help you identify your communication strengths and weaknesses and point you towards various support, resources and/or remedial courses available as appropriate.

The goal of this course is to help you understand and practice entrepreneurial concepts, principles, skills and attitudes to guide your university experience, career and life. The assignments include discovering your interests, strengths and weaknesses; identifying potential career paths; spotting opportunities to get involved in your university; applying time management and goal-setting skills and proactively taking steps to enhance your own human capital, social capital and character.

It is intended that this course will help you learn about and practise an entrepreneurial mindset including professional communication, empathy, persuasion, curiosity, alertness, proactivity, creativity, self-direction, self-management, resiliency, adaptability and a growth mindset.

COURSE OBJECTIVES

Upon completion of this course, students will have achieved the following Learning Outcomes:

- Demonstrate an entrepreneurial mindset by working proactively and independently to promote innovation within an organization and/or across sectors.
- Explain key concepts and theories of innovation and entrepreneurship and the stages in launching and growing a business.
- Demonstrate proficiency in the use of written English and designated citation styles by producing audience-appropriate business documents in a variety of formats.
- Deliver oral presentations to diverse audiences using relevant support technology.
- Familiarity with key entrepreneurial and design thinking methods, tools, principles, skills, attitudes and mindsets.
- Communication skills including interviewing, empathy, active listening and reporting.
- Creativity and innovation skills including curiosity, alertness, opportunity spotting, visualization and brainstorming.
- Self-Management skills including self-awareness, self-direction, self-regulation, self-reflection, self-discipline, time management and goal setting.

EVALUATION

The grade for this course is composed of the mark received for each of the following components:

Method	Percent/Weight
Completion of all Assigned Modules and Quizzes	Required
Class Participation Based on Experiential Learning (TEDPoints)	20%
Short Written Assignments based on Experiential Learning (3% each for 6-10 assignments)	30%
In-Class Oral Presentation	10%
Video Presentation of a Personal Pitch	10%
Final Report	30%
TOTAL	100%
Bonus for up to two Additional Short Written Assignments based on Experiential Learning Activities	3% each

Completion of all Assigned Modules and Quizzes

The course textbook “Building an Entrepreneurial Mindset” and all assigned modules must be completed in a timely manner in order to pass this course. Interactive course reading and interactive video quizzes will be used to embed quizzes into these flipped classroom instructional materials. Students may only progress through this learning sequence by engaging with and correctly answering all quiz questions. This is a mandatory pass/fail course requirement and is not graded.

Class Participation Based on Experiential Learning Activities – 20% of Grade

Your Experiential Learning grade will be based on the accumulation of TedPoints according to a grading rubric to be determined in collaboration with TEDPacks leadership and other stakeholders. More TEDPoints will earn a higher grade up to a maximum of 20%. TEDPoints are tracked by TRSM staff using Salesforce and are acquired through activities such as attending events, joining student clubs and engaging in extra-curricular activities. Any experiential activity outside TRSM that is not already tracked by TEDPoints may be added to your score by making a request when you submit a Short Written Assignment for that activity. Work experiential activities may also potentially be counted toward this score by making a request when you submit a Short Written Assignment for that activity.

Short Written Assignments Based on Module Tools and Experiential Learning Activities – 30% of Grade

Several of the assigned Tools (e.g. self-analysis, self-reflection, goal-setting) require the submission of a short assignment of approximately 1-3 pages for in-class workshop discussion. For each experiential learning activity (e.g. those tracked through TEDPoints), you are also encouraged to write and submit a short, written Assurances of Learning (AoL) document of 1-3 pages (based on Tool 3). Each assignment must use the course communication technology software and be entirely free of any spelling, punctuation or grammar mistakes. Each acceptable assignment (meeting the standards normally associated with a B- or greater) will receive 3 points toward your final grade. Assignments that do not meet this university-level standard for written communication will receive feedback and the student is invited to revise and resubmit the assignment up to 2 additional times with no penalty.

Each acceptable Short Written Assignment is worth 3% of the final grade. Each student must complete a minimum of 6 of these assignments and may complete as many assignments as they desire for bonus points up to a maximum of 12 assignments.

In-Class and Video Oral Presentations – 20% of Grade (10% each)

Students will practice giving live in-class presentations and giving and receiving feedback during the in-class workshops. These will be worth 10% of the final grade. In addition, students will make a short video presentation with their personal pitch that will be peer reviewed as well as graded by the instructor. These will each be worth 10% of the final grade.

Final Report – 30% of Grade

Students will prepare a professionally-formatted final report that will include all written communication assignments along with a summary of their self-analysis and plans to grow their human capital, social capital and character during their university learning journey, in line with their overall career goals.

There is no midterm exam, no final exam and no pop quizzes.

TEACHING METHODS

This course has a 2-hour lecture and a 1-hour communications lab per week. The 2-hour lecture is virtual and asynchronous and is taught by the Lead Instructor. Interactive course reading and interactive video quizzes will be used to embed quizzes into some flipped classroom instructional materials. Students may only progress through this learning sequence by engaging with and correctly answering all quiz questions. The 1-hour

communications lab is focused on the collaborative development of communication skills in the entrepreneurial context.

COURSE MATERIALS

Course readings with embedded learning engagement technology and interactive quizzes, interactive learning videos and other materials will be developed by the Lead Instructor and will be available free of charge to students. Other readings, content and videos produced for the course and/or assigned by the course will be available either online or through the university library.

Students are required to purchase software to assist with grammar and writing style such as ProWritingAid or Grammarly (to be determined in collaboration with UCC Sub-Committee on Communications).

TENTATIVE TOPICS AND COURSE SCHEDULE [FOR DISCUSSION PUPOSES]

	Assignment
In Class Wk 1	Introduction to the Course Introduction to Using the Communications Technology Software Review of Course Outline, Deliverables, and Grading Rubrics Instructor Teaching Philosophy
To Do Prep Wk2	Read: Chapter 1 of Entrepreneurial Mindset Watch: Module 1 – Uncertainty, Risk and the Future of Work Watch: Module 2 – What is Entrepreneurship? Watch: Module 3 – University’s Student Engagement Eco-System Watch and Use Tool 1 – Self-Analysis
In Class Wk 2	Networking with the University’s Entrepreneurship Eco-System Feedback on Tool 1
To Do Prep Wk3	Read: Chapter 2 of Entrepreneurial Mindset Watch: Module 4 – What is an Entrepreneurial Mindset? Entrepreneurial Knowledge, Skills, Attitudes and Behaviours Watch: Module 5 – University’s Entrepreneurship Eco-System Watch: Entrepreneurship is like learning to Play the Guitar Watch and Use Tool 2 – Start Where You Are: The Bird-in-Hand Principle, Human Capital, Social Capital and Character
In Class Wk 3	Networking with the University’s Student Engagement Eco-System Feedback on Tool 2
To Do Prep Wk4	Read: Chapter 3 of Entrepreneurial Mindset Watch: Module 6 – Design Thinking and Human-Centric Methods Watch and Use Tool 3 – Professional Communication
In Class Wk 4	Communication Skills Development Exercise Getting Feedback and Collaboration on Experiential Learning Assignments
To Do Prep Wk5	Read: Chapter 4 of Entrepreneurial Mindset Watch: Module 7 – Radical Collaboration, Teamwork and Co-Creation Watch: Module 8 – The Startup Process and 100Steps2Startup Watch and Use Tool 4 – Self-Reflection
In Class Wk 5	Communication Skills Development Exercise Getting Feedback and Collaboration on Experiential Assignments
Study Week	
To Do	Read: Chapter 5 of Entrepreneurial Mindset

Prep Wk6	<p>Watch: Module 9 – Intrapreneurship and Innovation: Being an Entrepreneurial Employee</p> <p>Watch: Module 9 – NetWORKING and your Personal Pitch</p> <p>Watch and Use Tool 5 – Goal-Setting</p>
In Class Wk 6	Team-based Radical Collaboration and Peer-Review Exercise Feedback on Tool 5
To Do Prep Wk7	<p>Read: Chapter 6 of Entrepreneurial Mindset</p> <p>Watch: Module 10 – Social Entrepreneurship and Changemaking</p> <p>Watch: Social Entrepreneurs and Innovators in Action</p> <p>Watch and Use Tool 6 – Time Management</p>
In Class Wk 7	Team-based Peer-Review of Experiential Assignments
To Do Prep Wk8	<p>Read: Chapter 8 of Entrepreneurial Mindset</p> <p>Watch: Module 11 – Curiosity, Alertness, Proactivity and Opportunity Spotting</p> <p>Watch: Resiliency and Adaptability</p> <p>Watch and Use Tool 7 – Presentations, Pitching and Public Speaking,</p>
In Class Wk 8	12 students will deliver live presentations and receive feedback
To Do Prep Wk9	<p>Read: Chapter 9 of Entrepreneurial Mindset</p> <p>Watch: Module 12 – Self-Direction, Agency and Internal Locus of Control</p> <p>Watch and Use Tool 8 – Re-Framing Failure, Resiliency and Growth Mindset</p>
In Class Wk 9	12 students will deliver live presentations and receive feedback
To Do Prep Wk10	<p>Read: Chapter 10 of Entrepreneurial Mindset</p> <p>Watch: Module 13 – The Individual Video Pitch Assignment</p>
In Class Wk 10	12 students will deliver live presentations and receive feedback
To Do Prep Wk11	<p>Read: Chapter 11 of Entrepreneurial Mindset</p> <p>Watch: Module 14 – Personal Empowerment through Career and Life Design</p> <p>Watch: Module 15 – Giving Feedback, Growth Mindset and Radical Candor</p>
In Class Wk 11	12 students will deliver live presentations and receive feedback
To Do Prep Wk12	Watch and Read anything you missed previously
In Class Wk 12	Review of Draft Final Report Final Q & A
Prep	
End of Term	Final Report and any remaining Short Written Assignments are Due Date on D2L (11:30pm EST)

Respectfully Submitted,

Cynthia Holmes, Chair for the Committee

ASC Members:

Robyn Parr, Registrar

Donna Bell, Secretary of Senate

Cynthia Holmes, Chair and Interim Vice-Provost Academic

Marcia Glasgow, Office of the Vice President Equity and Community Inclusion

Jason Lisi, Director, Curriculum Quality Assurance

Andrea Migone, Faculty of Arts, Politics and Public Administration

Andrew Hunter, Faculty of Arts, Philosophy

Christopher Gibbs, The Creative School, Creative Industries

Abhay Sharma, The Creative School, Graphic Communications Management

Eric Liberda, Faculty of Community Services, Occupational & Public Health

Diane Pirner, Faculty of Community Services, Nursing

Jurij Leshchyshyn, Faculty of Engineering & Architectural Science, Architectural Science

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Hilary Evans Cameron, Lincoln Alexander School of Law, Law

Vadim Bostan, Faculty of Science, Chemistry and Biology

Gagan Gupta, Faculty of Science, Chemistry and Biology

Farid Shirazi, Ted Rogers School of Management, Information Technology Management

Mary Han, Ted Rogers School of Management, Entrepreneurship and Strategy

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Linda Koechli, Chang School of Continuing Education

Kimberly Carter, Chang School of Continuing Education

Zaima Aurony, Student

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