

To : Members of Graduate Council

From : Christina Bryce
Assistant Graduate Secretary

The next meeting of Graduate Council will be held on **Tuesday April 15th at 9:00 am in GH-111**

Listed below are the agenda items for discussion.

Please email cbryce@mcmaster.ca if you are unable to attend the meeting.

A G E N D A

- I. Opening Remarks
- II. Minutes of the meeting of March 11th, 2025
Approval
- III. Business arising
- IV. Report from the Associate Deans, Graduate Studies
- V. Report from the Senior Associate Registrar and Graduate Secretary
- VI. New Program Proposals
 - Master of Management in AI and Analytics
 - Master of Management in Applied AI and Data-Driven Decision-Making*Approval*
- VII. Report from Certificate, Diplomas and Microcredentials Committee
 - Graduate Academic Certificate in Medical Health Physics & Internal Dosimetry
 - Graduate Academic Certificate in Nuclear Detection, Instrumentation & Methods
 - Graduate Academic Certificate in Radioactivity and Radiation Interactions*Approval*
 - Science Leadership Certificate of Completion*Information*
- VIII. Faculty of Engineering Graduate Curriculum and Policy Committee Report
Approval
- IX. Faculty of Health Sciences Graduate Curriculum and Policy Committee Report
Approval

X. Faculty of Humanities Graduate Curriculum and Policy Committee Report

Approval

XI. Faculty of Science Graduate Curriculum and Policy Committee Report

Approval

XII. Faculty of Social Sciences Graduate Curriculum and Policy Committee Report

Information

XIII. Spring 2025 Faculty of Health Sciences Graduands (to be circulated)

Approval

XIV. New Scholarship

Approval

Tuesday March 11th at 9:00 am in GH-111

Present: S. Hranilovic (Chair), B. Newbold, A. Prasad, A. Shakib, F. Homid, D. Trigatti, M. Gough, K. Mattison, M. Heath, I. Jahan, T. Ruebottom, M. Verma, N. Carter, E. Grodek, N. Wagner, L. Parker, K. Grandfield, F. Ma, B. Milliken, K. McCallum, D. Emslie, T. Davidson, Y. Kim, A. Gadsden, A. Cole, C. Bryce (Assistant Graduate Secretary), S. Baschiera (Senior Associate Registrar and Graduate Secretary)

Regrets: C. Chakraborty, S. Hanna, M. Cino, C. Biruk, P. Miu

I. Opening Remarks

Dr. Hranilovic reported on the following items:

- The PAL process, noting a number had been allocated already;
- Supports for international applicants in the Student Affairs office;
- A meeting with the administrators in the Faculty of Engineering, noting an upcoming visit to the Faculty of Health Sciences.

Members discussed the PAL allocation process and conversion rates.

II. Minutes of the meeting of February 11th, 2025

Regarding the portion of the minutes concerned with the Graduate Calendar Administrative Section Updates, a member noted that there was a reference to 4 year 'masters' where 'bachelors' should have been written.

It was duly moved and seconded, **'that the Graduate Council approve the minutes of the February 11th, 2025 meeting, as circulated with the amendment noted.'**

The motion was **carried**.

III. Business arising

There was no business arising.

IV. Report from the Associate Deans, Graduate Studies

Dr. Heath (Faculty of Social Science) reported on the following item:

- A Generative AI workshop that was well-attended, noting the Faculty is working on more professionalization activities.

Dr. Newbold (Faculty of Science) reported on the following items:

- The Science GSA alumni social night;
- The annual Women in Science and Engineering event.

Dr. Verma (Faculty of Business) reported on the following item:

- Work on the recruitment team to make offers to incoming students.

Dr. Grandfield (Faculty of Engineering) reported on the following items:

- A Graduate Program Open House in the JHE lobby;
- The semi-annual Engineering Graduate Student Society meeting, noting record turnout.

V. Report from the Senior Associate Registrar and Graduate Secretary

Ms. Baschiera reported on the following items:

- The turnaround time for offers of admission;
- The establishment of a process for PALs for in-course students;
- Review of the deferral process as it relates to PALS, noting that they're trying to figure out where the allocation sits;
- Work with the strategic enrollment management group, noting that the purpose of the group is to focus on conversion of applicants to students and then retention;
- Work with research security to refine process for how applications are being reviewed;
- Work on a technical solution for Indigenous applicant verification.

Members discussed the PAL process for students changing levels.

VI. Faculty of Business Graduate Curriculum and Policy Committee Report

Dr. Verma presented the following items for approval:

- The Business Ph.D. program proposed a change to the admission requirements to indicate focus edition of GMAT;
- The Master of Finance program proposed three changes:
 - To admission requirements, creating alternatives to GMAT and GRE to determine quantitative preparedness;
 - An update to the list of elective options;
 - The creation of a specialization in financial analytics.
- The formalization of the GMAT/GRE waivers process for the MBA co-op and full-time streams, where each applicant is reviewed to determine whether the GMAT/GRE requirement can be waived, noting they've been monitoring the performance of applicants since the pilot waiver review process has been in place;
- The accounting specialization is not currently being offered so it is being removed from the calendar;
- Increasing the minimum work experience requirement for admission in the full-time stream of the MBA program from 12 months to 2 years to better segment the applicants;
- The addition of a new co-op course where students are going to acquire the skills necessary for success;
- A change to course requirements to include a new required course for the EMBA program, in response to a recommendation from their IQAP review.

Members discussed the staffing requirement for the GMAT/GRE waivers.

It was duly moved and seconded, **‘that the Graduate Council approve, for recommendation to Senate as appropriate, the change proposed by the Faculty of Business, as described in the documents.’**

The motion was **carried**.

VII. Faculty of Science Graduate Curriculum and Policy Committee Report

Dr. Newbold presented the following items for approval:

- A dual degree stream with an international partner for the Mathematics and Statistics M.Sc., designed to allow students to spend their second year at the international partner institution and for students from that school to come to McMaster;
- A new required colloquium course for the Chemistry graduate programs;
- An updated to a stream name for the Radiation Sciences graduate programs;
- A change to course requirements for PhD physics to add an additional core course option for students.

With respect to the dual degree stream, Dr. Hranilovic noted another existing dual degree option at McMaster and highlighted that in these options they’re ensuring McMaster degree requirements are met and that the streams are a curricular mechanism for internationalization.

It was duly moved and seconded, **‘that the Graduate Council approve, for recommendation to Senate as appropriate, the change proposed by the Faculty of Science, as described in the documents.’**

The motion was **carried**.

VIII. Faculty of Social Sciences Graduate Curriculum and Policy Committee Report

Dr. Heath presented the item for approval, noting that Religious Studies proposed the addition of a new area of study in Theory, Religion and Politics and deleting two others. This provides a better complement with current Faculty and provides a better options for students to take their major and minor area courses.

It was duly moved and seconded, **that the Graduate Council approve, for recommendation to Senate as appropriate, the change proposed by the Faculty of Social Sciences, as described in the documents.**

The motion was **carried**.

IX. New Scholarships

Dr. Hranilovic highlighted Dr. Brash as pioneer of biomedical engineering.

It was duly moved and seconded, **‘that Graduate Council approve the new award as set out in the document.’**

The motion was **carried**.

X. Revision to the Graduate Course Management Policy

Dr. Hranilovic noted a minor revision was required to the policy, highlighting that in subsection c (referring to the requirements for a graduate course outline) a line was added about including cost of course materials. The requirement to include this language is a new Ministry directive. He noted that this also impacts undergraduate courses and that there would be a parallel change at that level.

It was duly moved and seconded, **‘that Graduate Council approve the revision to the Graduate Course Management Policy as set out in the document.’**

The motion was **carried**.

XI. GEMS Project

Dr. Hranilovic noted that the GEMS Project was an initiative launched in SGS with support of other units and is intended to arm supervisors with skills they need to ensure graduate students and post docs have a path to success. He highlighted Andrea Cole as the project manager in SGS and Dr. Bruce Newbold who will be bringing the academic and supervisor perspective.

Ms. Cole presented more information on the project, noting it was years in the making and that the topic of supervision is a perennial one, highlighting the work of a previous working group of graduate Council. She noted that they had done a lot of connecting with the student community to formulate the project and presented members with an overview of the goals, project timeline and sample module topics.

Members discussed the proposed assessment and course modality, the scope of the courses (noting the different hats graduate students wear), and different ways to recognize a supervisor who has completed the modules.

Master of Management in AI and Analytics

October 10, 2024

**(Updated:
February-March, 2025)**

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COMPLETING THE NEW PROGRAM PROPOSAL DOCUMENT

This New Program Proposal template is structured to correspond with the evaluation criteria outlined in McMaster's Policies, Procedures and Guidelines: <https://www.mcmaster.ca/policy/AdminAcad/AcadAdmin/AcademicProgramReview.pdf>. For additional information, contacts or guidebooks, departments can visit the IQAP website <https://mi.mcmaster.ca/iqap/> or email iqap@mcmaster.ca.

Please ensure that your department refers to the New Program Proposal Guidebook for clarification and further information on the types of evidence required and, where applicable, what resources are available to assist in retrieval or interpretation of the information required for this proposal.

CHECKLIST FOR NEW PROGRAM PROPOSALS

The following section indicates all the items that are required as part of a **complete** new program proposal package which includes all the necessary documents. Part I, II and III should be submitted as separate files to iqap@mcmaster.ca.

PART I: COMPLETE NEW PROGRAM PROPOSAL DOCUMENT

- ☐ Complete New Program Proposal Template
- ☐ Faculty CVs (can be submitted on CD or USB)
- ☐ Memorandum(s) of Understanding (Letters of Support) (if applicable)

PART II: RESOURCE IMPLICATIONS AND FINANCIAL VIABILITY


- ☐ Completed
- ☐ Approved

PART III: FEES MEMO

- ☐ Completed
- ☐ Approved

Chair's Declaration of New Program Proposal Completeness:

I, MANISH VERMA, have reviewed the New Program Proposal for *Master of Management in AI and Analytics* (MM, AI&A) and agree that it is complete and satisfies all the requirements McMaster University's Policy on Academic Program Development and Review.

Signature: 

Dean's Declaration of New Program Proposal Completeness:

I, KHALED HASSANEIN, have reviewed the New Program Proposal for *Master of Management in AI and Analytics* (MM, AI&A) and agree that it is complete and satisfies all the requirements McMaster University's Policy on Academic Program Development and Review.

Signature:



1. PROGRAM

1.1 PROGRAM DESCRIPTION

In 2020, humans produced, copied, and consumed 64.2 zettabytes (ZB) of data, and by 2025 global data creation is expected to exceed 180 ZB.¹ Big Data, Data Science, Artificial Intelligence, and the Internet of Things (IoT) are rapidly transformed how businesses, organizations, and governments operate, giving rise to new opportunities and challenges. The global market for Big Data hardware, software, and services is estimated to surpass \$123B by 2025.² In our increasingly data-driven societies, skills related to gathering, analysing, and interpreting data to inform effective business and organizational decision-making are in high demand. At the same time, a 2024 report by the Information and Communications Technology Council (ICTC) found that amid these rapid technological changes, Canada faces extensive labour shortages of digital technology knowledge and skills, and these shortages pose a serious threat to the health of the Canadian economy.³ To address this, DeGroote School of Business is developing two graduate programs in AI and Analytics, i.e., a full-time version that is being discussed in this proposal, and a blended-learning part-time version that is being proposed concurrently **named Master of Applied AI and Data-Driven Decision Making (MAIDM)**. These programs are targeted at different audiences, and the differentiating details and specifics are provided on Page 28 of this document.

The full-time version of the program Master of Management in AI and Analytics (MM, AI&A) proposed here will be offering an experientially focused core curriculum centred on the gathering, processing, and interpretation of data and coupled with a wide selection of elective courses that will allow students to tailor their program towards specific fields and career paths.

This 16-month professional master's program at McMaster's DeGroote School of Business (DSB) will provide participants experiential training on how state-of-the art quantitative models and analytics methods together with leading software packages and programming languages can be used to organize, process, analyze, and interpret data in order to make informed business decisions. The program will consist of twelve courses (nine required and three electives), a two-term Industry Practicum and a one-term

¹ Taylor, Petroc. Nov. 16, 2023. "Amount of data created, consumed, and stored 2010-2020, with forecasts to 2025". *Statistica.com* <https://www.statista.com/statistics/871513/worldwide-data-created/>

² "Big Data Market Size, Share & Trends Analysis Report [...] 2018-2025" n.d. *grandviewresearch.com* <https://www.grandviewresearch.com/industry-analysis/big-data-industry>

³ "Charting the Course: the Future of Higher Education in Canada." July 3, 2024. *ictc-ctic.ca* <https://ictc-ctic.ca/reports/charting-course> pgs. 8-9.

Internship. All the courses will be delivered by faculty members and industry professionals with expertise in different aspects of applied AI and analytics and will incorporate the cutting-edge resources available through two new Learning Hubs: Data Analytics and AI; and Sales & Marketing Analytics, which will become operational in DSB's McLean Centre for Collaborative Discovery (MCCD) at McMaster University in early 2026. The curriculum is designed to deliver a set of core skills in analytics and applied AI while allowing students flexibility to choose functional area(a) to apply these skills. Both the Industry Practicum and the internship components will allow students to gain a deeper understanding of specific industries or functional areas of business from the perspective of analytics and applied AI. The three elective courses will also allow students to focus on specific functional areas in their application of analytics, such marketing, finance, health care, operations management, human resources, and information systems. This focused yet flexible curriculum will provide students with both a breadth and depth of knowledge in analytics and applied AI. Through their course of study, students will cultivate valuable skills and experience, enabling them to make important contributions to their chosen fields, as well as provide them with the contextual understandings they need to remain abreast of new developments in the rapidly changing realms of data, applied AI, and analytics.

1.2 PROPOSAL PREPARATION AND CONSULTATION PROCESS

In November of 2023 DeGroote School of Business' Associate Dean of Graduate Studies, Manish Verma initiated conversations with DSB leadership and with Khaled Hassanein, Dean of the Faculty of Business at McMaster regarding the proposed new program. Consultations were then held with Steve Hranilovic, Vice-Provost and Dean of Graduate Studies. In February 2024, DSB's Marketing and Communications Engagement team conducted an initial market scan for the new program that produced positive results. That same month, Dr. Verma and Mr. Gregory Rombough (Manager, Specialized Graduate Programs) with the School of Graduate Studies to discuss the new program. In May 2024, Dr. Verma consulted with Stephanie Baschiera, Senior Associate Registrar and Graduate Secretary, and Christina Bryce, Assistant Graduate Secretary, as well as with Educational Developer Amy Gullage of the MacPherson Institute for Leadership, Innovation and Excellence in Teaching. In April of 2024's Dean's Advisory Council meeting, Dr. Verma shared the idea about the new program, which was received favorably by the membership comprised of Area chairs and Program Directors. Subsequently, he shared the new program idea at the May 2024 meeting of Faculty of Business. At the DSB's Spring Reception held in late May 2024, Dr. Verma shared news of the new program to a large group that included faculty, students, and staff.

In June of 2024, an Analytics Program Development Committee (APDC) was formed to spearhead the development of the new program. The APDC was composed of:

Behrouz Bakhtiari, Director, Blended Learning Part-Time MBA Program, DeGroote School of Business

Yoon Tae Jeon, Assistant Professor, Finance & Business Economics, DeGroote School of Business

Christopher Longtin, Manager, Strategic Initiatives, DeGroote School of Business

Ala Mokhtar, Assistant Professor, Accounting & Financial Management Services, DeGroote School of Business

Gregory Rombough, Manager, Undergraduate and Specialized Graduate Programs (Academic), DeGroote School of Business

Sash Vaid, Assistant Professor, Marketing, DeGroote School of Business

Manish Verma, Associate Dean (Graduate Studies), DeGroote School of Business

Kiewan Wind, Assistant Professor, Information Systems, DeGroote School of Business

Yun Zhou, Associate Professor, Operations Management, DeGroote School of Business

On July 9th 2024, the APDC began collaborations with educational developers Greg Van Gastel, Aasiya Satia, and Amy Gullage from the MacPherson Institute to develop the PLOs for the proposed new program.

In July of 2024, Dr. Verma approached industry leaders to seek constructive feedback regarding the proposed program and to begin the process of assembling an External Advisory Board (EAB). Consultations were held with several teams within DeGroote and the larger university: DeGroote's Marketing and Communications team (M&C) conducted an extensive scan of the market and competitors to identify the new program's positioning; DeGroote's Career and Professional Development Team (CPD) liaised with employer partners and potential employers to solicit feedback about the proposed program; DeGroote's MBA Recruitment Team was invited to provide feedback given their engagement with student participants at events across the globe; DeGroote's Advancement and Alumni Office facilitated feedback about the proposed program from alumni, and to solicit level of engagement including securing letters of support from employers in fields related to analytics; McMaster's Advancement Team was mobilized to gauge the willingness of industry professionals to participate in programming as potential instructors, co-instructors, and/or curricular collaborators; undergraduate students in the faculties of Business, Engineering and Sciences were surveyed; *and* finally, Associate Deans of Graduate Studies of the six faculties were consulted and invited to provide input.

Throughout August 2024, Dr. Verma was in discussion with Dean Hassanein, the School of Graduate Studies (SGS), the APDC, and support units within the DSB to fine-tune curricular and budgetary aspects of the program. Dr. Verma and Greg Rombough, with input from the APDC, developed a survey to discern student interest in, and feedback about, the new program. The survey was released to undergraduate students in the Faculties of Business, Engineering, and Science at McMaster. Ms. Zeinab Vosooghi, a PhD Student in Management Science, was hired to extract and process the data. The outputs were analysed by the program leadership and appropriate insights were incorporated into **Section 1.6-II** of this study.

1.3 CONSISTENCY WITH MCMASTER'S MISSION AND ACADEMIC PLAN

McMaster University's Mission Statement is as follows:

At McMaster, our purpose is the discovery, communication, and preservation of knowledge. In our teaching, research, and scholarship, we are committed to creativity, innovation, and excellence. We value integrity, quality, inclusiveness, and teamwork in everything we do. We inspire critical thinking, personal growth, and a passion for lifelong learning. We serve the social, cultural, and economic needs of our community and our society.⁴

Due to the proliferation of digital platforms, the Internet of Things, smart technologies, sensors, and online interactions, modern societies are producing more and more data, only a small fraction of which is being interpreted and productively used. Because of this, the analytic skills to gather, organize, model, and interpret data in order to make informed business and organizational decisions are in growing demand. Diverse sectors such as e-commerce, marketing, health care, government, supply chain management, and finance are all increasingly using algorithmic analysis, modeling, and prediction to make crucial decisions. Students of the MM, AI&A program will learn how to apply analytics processes, models, algorithms, and related technical skills in response to complex business and management problems while cultivating important teamwork, project management, and communication abilities that are highly valued across diverse sectors, organizations, and industries. Ongoing developments in artificial intelligence and machine learning are further changing the way organizations relate to data, and the proposed program's curriculum will prepare graduates to evaluate and respond to these shifts. The program's experiential emphasis on practical application of analytics in business and managerial contexts will provide a good match with labour market needs across a variety

⁴ "Office of the President." n.d. mcmaster.ca. <https://president.mcmaster.ca/mission-vision/>

of sectors. A curricular emphasis on the cultural and ethical contexts in which analytics are applied will foster critical understanding of the strengths and limitations of methods, tools, and technologies, enabling students to contribute to their chosen fields in progressive, inclusive, and ethical ways. They will also cultivate the skills and experience to evaluate emerging developments in analytics, positioning them as lifelong learners who can make ongoing, meaningful contributions to their professions and communities.

DeGroote School of Business is recognized as a leader in innovative approaches to teaching, learning, and service to the business community. Through its dedication to fostering knowledge and interdisciplinary thinking to transform business and society, it has achieved a considerable degree of international stature. DeGroote is accredited by the Association to Advance Collegiate Schools of Business (AACSB), a distinction that has been achieved by only six percent of business schools worldwide. The MM, AI&A program will adhere to AACSB's design and delivery guidelines for graduate programs.

1.3.1 McMaster's Strategic Mandate Agreement

The proposed new program is in accord with McMaster's Strategic Mandate Agreement (2020-2025)⁵ in several key areas:

- A. **Skills and Job Outcomes:** McMaster is dedicated to supporting student and graduate outcomes aligned with Ontario's economic needs. To this end, the DeGroote School of Business is committed to providing programs that will enable graduates to become positive contributors to society. MM, AI&A graduates will be well-positioned to address the growing need for data analysts in a diverse range of professions ranging across business, government, and the third sector. Relevant professions include finance and investment analysts, data scientists, business systems specialists, information systems specialists, economic policy researchers and analysts, market researchers, and business management and consulting. In addition to skills in applied AI and analytics, graduates will have a set of transferrable skills such as communication, project management, critical thinking, collaboration, problem-solving, and relationship-building that are widely sought after in the contemporary labour landscape. A four-month internship will provide valuable workplace experience, helping ensure that students are career-ready upon graduation.
- B. **Graduate Employment:** In September 2019, the *QS World University Rankings: Graduate Employability Rankings* placed McMaster 98th in the world and 4th in Canada. In November 2019, the *Times Higher Education Global University Employability Ranking* placed McMaster 78th in the world and 5th in Canada. In

⁵ For McMaster's SMA (2020-2025), please see: <https://ira.mcmaster.ca/app/uploads/2020/11/McMaster-SMA3-Agreement-August-31-2020-SIGNED-FINAL.pdf>

the 2018 Ontario University Survey of McMaster graduates, 90.93% of those in full-time employment indicated that they had secured work closely related or somewhat related to the skills they learned at university (the Ontario average is 88%). DSB is committed to providing programs that contribute to McMaster's strong record regarding graduate employment. **Table 1** shows employment outcomes for DSB's MBA graduates from 2020 to 2023. The MM, AI&A program will contribute to this strong record on the part of DSB and McMaster by responding to the growing need for analysts with training in applied AI and analytics, and the ability to translate cutting-edge analyses into meaningful outcomes that can be used in organizational and business decision-making.

Table 1. DSB's MBA Employment Outcomes 2020-2023

Year	Average Salary	Salary Range	Employment rate
2023	81,929	44,500 – 128,800	94% secured within 10 months
2022	82,464	40,000 - 175,000	95% secured within 3 months
2021	77,080	50,000 – 130,000	94% secured within 3 months
2020	74,594	50,00 – 162,954	92% secured within 12 months

- C. **Experiential Learning:** McMaster strives to provide experiential learning opportunities that teach knowledge and skills through practical application and engagement with diverse communities. The MM, AI&A program will integrate experiential learning in its curriculum through such practices as informed case-study exercises and simulations, a four-month internship placement, and an Industry Practicum that asks students to apply the skills and knowledge they have learned to a real-world problem or situation. The program will also hire industry leaders to teach or co-teach specific courses and sections of courses, allowing students to benefit from the experience and insights of practitioners in the field. The integration of diverse forms of experiential learning in the MM, AI&A program will reinforce McMaster's longstanding commitment to providing engaging and innovative pedagogy directed towards real-world needs, problems, and outcomes.

D. Skills and Competencies: It is McMaster's mission is to provide students with the skills, experience, and confidence they require for success in their professional and civic lives. This emphasis is reinforced by DSB's mission statement, which underscores a commitment to fostering transformative impacts in community, business, and the larger world.⁶ The MM, AI&A program will advance these institutional commitments by providing the training and experience needed for students to achieve their professional, personal, and civic goals as leaders, lifelong learners, and engaged global citizens. Students will gain specific hard skills in applied AI and analytics, such as mathematical and computer modeling of managerial/business problems, implementing algorithms using programming languages SQL, R, and Python, and through software packages like SPSS, SAS, Sage, Mathematica, and Excel. But they will also learn highly sought-after transferrable skills such as agile communication, inquisitiveness, complex problem-solving, leadership, collaboration, critical thinking, attention to detail, and holistic thinking. This combination of skills and knowledge will provide students the expertise and confidence needed to tackle large, complex problems, working both individually and in concert with others. The MM, AI&A program's strong focus on experiential learning will highlight these skills' relevance to the contemporary business and managerial landscape, with students benefitting from the expertise of industry leaders who will serve as advisors, mentors, and co-instructors for the program. An awareness of the cultural, ethical, and social dimensions of applied AI and analytics will inform all aspects of the MM, AI&A program's curriculum, enabling graduates to contextualize and critically engage with relevant analytics methodologies in ways that foster positive change in business and society. With this curricular emphasis, we believe that MM, AI&A graduates will be highly valued by contemporary employers who require not only practical programming and platform skills, but also the ability to critically, effectively deploy these technologies towards collaborative, innovative, and beneficial ends. Perhaps most importantly in this regard, the program will enable students to cultivate the expertise they need to remain abreast of new developments in the rapidly changing landscape of applied AI and analytics in business, and to both respond and contribute to these shifts in ways that further the DSB's core values of collaboration, community, inclusivity, innovation, and integrity.

1.3.2 McMaster's Current Priorities

McMaster's vision statement, refreshed in 2021, calls for:

⁶ Please see the DSB's Mission Statement at: <https://strategy.degroote.mcmaster.ca/>

Impact, Ambition and Transformation through Excellence, Inclusion and Community: Advancing Human and Societal Health and Well-being⁷

By equipping graduates with the knowledge, skills, and leadership abilities they need to effectively apply analytics in business and organizational contexts, the MM, AI&A program seeks to further social and economic flourishing locally, nationally, and internationally. Key aspects of the program, such as applied AI, a focus on the cultural, social, and ethical dimensions of analytics, and a robust emphasis on experiential learning will position graduates to make skillful and informed contributions to diverse professional fields. In addition to the core curriculum, students will choose three elective courses that will tailor their program towards specific professional goals, as well as engaging in an applied Industry Practicum and a four-month internship in a relevant field. These components of the program will contribute to key priorities McMaster has identified in its Institutional Priorities and Strategic Framework (2021-2024):

- A. **Inclusive Excellence.** McMaster aspires to “embed an inclusive approach that intentionally engages and respects a diversity of peoples, perspectives, and ways of knowing” in its pedagogic and institutional culture.⁸ Working in collaboration with McMaster’s Equity and Inclusion Office, the DeGroote School of Business has developed resources and practices that prioritize diversity, equity, and inclusion. These include multiple, ongoing implementations, such as: a newly established Equity, Diversity, and Inclusion Advisory Committee; creating an online space where DeGroote students, staff and faculty members have access to resources, contacts, and supports related to EDI; implementing annual Refresher Employment Equity Facilitator Training; providing bias-free recruitment training for faculty, staff, and other stakeholders who review applications for prospective students, and much more.⁹

Students in the MM, AI&A program will benefit from a pedagogical space in which diverse backgrounds, perspectives, and experiences are welcomed and affirmed, and where faculty and staff are sensitive to the challenges faced by equity-

⁷ “Office of the President” n.d. mcmaster.ca <https://president.mcmaster.ca/mission-vision/>

⁸ “Office of the President” n.d. mcmaster.ca.
https://president.mcmaster.ca/app/uploads/2022/02/Institutional-Priorities-and-Strategic-Framework_FINAL_5May21.pdf pg. 6.

⁹ Please see the DeGroote School of Business’ Strategic Priorities regarding inclusivity at: <https://strategy.degroote.mcmaster.ca/strategic-priorities/inclusivity/>

deserving groups. DeGroote's faculty members represent a wide variety of cultural backgrounds, providing students from diverse backgrounds and circumstances with support, understanding, and mentorship that will foster their professional and leadership potential. Inclusivity and equity will also be a key component of the program's curriculum, which threads a focus on the ethical, socio-economic, and cultural dimensions of data analytics and management through its core courses (please see Program Learning Outcome #6 in **Section 1.4**, below). This curricular thread will include a focus on how cultural biases and blind spots can shape the way data is gathered, analysed, and used, with the aim of building students' capacities for critical thinking and self-reflexivity in relation to analytics and applied AI.

The proposed MM, AI&A program would be attractive to students from a variety of backgrounds including Business, Economics, Engineering, Science and others. More importantly, to capture the holistic perspective, the application process for the MM, AI&A program will include a short, personal essay and video interview component. These allow reviewers to take account of factors such as a student's cultural background, specific circumstances, academic background in other disciplines, reasons for applying to the program, and inclusion in equity-deserving groups. These components will help ensure that entrance to the program is not based solely on GPA, letters of reference, and traditional backgrounds and will foster inclusivity and diversity by considering a wider range of factors in the application process. The MM, AI&A program will also offer one scholarship of full tuition and living expenses to an Indigenous applicant, with the award selection process overseen by McMaster's Indigenous Student Services team.

- B. **Teaching and Learning.** It is McMaster's mission to foster human and societal health and well-being through skilled and innovative approaches to teaching and learning. The MM, AI&A program will address this priority with integrated experiential learning strategies aimed at providing students with the skills, knowledge, and experience they need to develop their leadership potentials and reach their professional goals. Students will benefit from the skilled instruction of DeGroote's faculty members, informed and reinforced by industry practitioners who will provide co-teaching, curricular materials, and mentorship. The program will incorporate a two-term Industry Practicum for which students will use both the technical and soft skills they have developed to address a practical business or organizational problem within a specific functional field related to students' interests. A one term (four month) internship placement will provide valuable work-integrated learning experience supported by DSB's Career and Professional Development team. This combination of skilled instruction with innovative,

experiential components will provide MM, AI&A students a holistic, career-oriented education in applied AI and analytics.

- C. Engaging Local, National, and Indigenous Communities:** The MM, AI&A program will engage business and industry leaders as branded business partners. Senior executive representatives of key industries and organizations will serve as members of an External Advisory Board (EAB) to help champion the program, offer feedback on curricular content, and share access to their networks and resources, including supporting the development of applied business cases. Industry leaders may also teach or co-teach specific courses in the program, providing students with valuable mentorship grounded in practical experience. These components of the program will help further the strong tradition of community and industry partnerships fostered by DSB and McMaster. As noted above, the MM, AI&A program will provide one scholarship of full tuition and living expenses to an Indigenous applicant, with the award selection process overseen by McMaster's Indigenous Student Services team.

1.4 PROGRAM LEARNING OUTCOMES

The learning outcomes for the MM, AI&A program have been designed based on extensive collaborations with members of the APDC, curriculum development specialists from McMaster's MacPherson Institute, and industry leaders who have declared an interest in the program. The overall objective is to produce graduates with the knowledge, skills, and experience to develop careers in a growing variety of fields that incorporate data management and analyses, within the context of significant changes taking place in the broader economy due to rapid shifts in technology and methodologies. To this end, students will develop strong analytical and problem-solving capabilities within a four-term (sixteen month) program that emphasizes professional teamwork, leadership, communication, and critical thinking skills.

Upon completion of the program, each graduate will be able to:

1. Undertake logical approaches for building conceptual models of managerial problems.
2. Design analytics models for organizational, customer, and business decision-making.
3. **Demonstrate communication, critical thinking, and presentation skills.**
4. **Employ applied AI and analytics tools to projects across different functional areas and industries.**
5. Evaluate ethical, social, and cultural dimensions of applied AI and analytics in business decision-making.

6. Exhibit understanding of applied AI and analytics tools, and programming languages and be able to assess new developments in these domains.
7. Display knowledge of applied AI in business settings.

1.5 CONSISTENCY WITH DEGREE LEVEL EXPECTATIONS

PLO	DLE
1,2,3,5,6,7	1. Depth and Breadth of Knowledge
2,5,6	2. Research and Scholarship
1,2,3,4,5,6,7	3. Application of Knowledge
2,3,4,5	4. Communication Skills
1,2,3,4,5,6,7	5. Awareness of Limits of Knowledge
1,2,3,5,6,7	6. Autonomy and Professional Capacity

1.6 DEMAND FOR PROGRAM

I. Evidence of Societal/Labour Market Need

The MM, AI&A program will help address the growing need for analysts, data scientists, and data-savvy managers and decision-makers in Canada and abroad. The gathering, processing, and interpretation of data is increasingly central to strategy, policy, and decision-making in a variety of fields such as health care, government, finance, service industries, supply chain, and marketing. However, despite the expanding amounts of digital information being produced, many businesses and organizations utilize only a small fraction of the available data. The MM, AI&A program is designed to give graduates the skills, tools, and experience they need to effectively collect, process, interpret, and communicate data in the context of business and organizational decision-making. The nine core courses and three electives, coupled with the Industry Practicum and internship components, will provide graduates with a strong grounding in analytics skills, practices, and tools tailored to their specific career paths, interests, and goals. A focus on the cultural, socio-economic, and ethical dimension of analytics will give graduates an understanding of the power structures and hidden biases that can inform, and be reinforced by, data-driven decision-making. This contextual and critical grounding will make MM, AI&A graduates attractive to businesses and institutions that desire to make transformative contributions to industry and society. A focus on applied AI (machine

learning), data analytics, and platform versatility will enable graduates to respond to ongoing shifts in technology and practice, giving them the grounding needed to be lifelong learners and informed effective leaders in their chosen fields.

As the labour scan charted in **Table 2** demonstrates, a broad range of fields and professions require skilled data analysts. The Province of Ontario's Ministry of Labour, Immigration, Training and Skills Development predicts that there will be a total of 58,800 jobs available in ten related sectors between 2024 and 2028, a figure that includes all new and replacement jobs. The same source identifies the employment outlook in these fields as good to very good for all but two of the occupational codes. Even in the category of "Business development officers and market researchers and analysts" (NOC 41402), where the growth outlook is moderate, the prospective number of openings remains significant (3,300 jobs). Only for the category of "Statistical officers and related research support occupations" does the outlook appear as "limited" with a projected growth rate of 200 positions in the next four years (2024-2028).

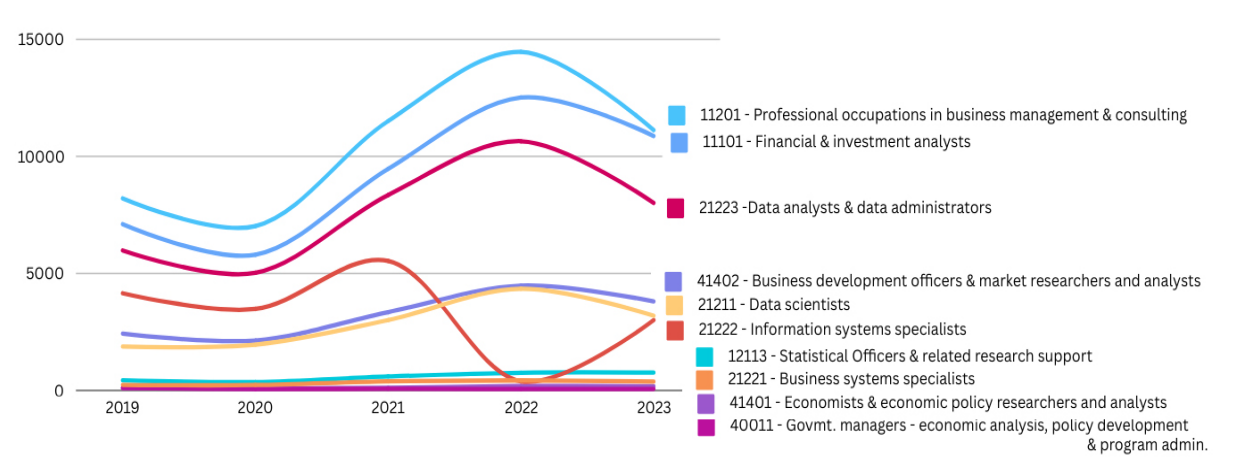
Table 2. Growth rate and total openings in Ontario¹⁰

NOC	Title	Total Projected Openings, 2024-2028 (Ontario)	Outlook
11101	Financial and investment analysts	5,300	Good
11201	Professional occupations in business management consulting	10,300	Very good
12113	Statistical officers and related research support occupations	200	Limited
21211	Data scientists	1,100	Good
21221	Business systems specialists	16,500	Good
21222	Information systems specialists	16,500	Good
21223	Data analysts and data administrators	2,300	Very Good
40011	Government managers – economic analysis, policy development and program administration	1,200	Very Good
41401	Economists and economic policy researcher and analysts	2,100	Good
41402	Business development officers and market researchers and analysts	3,300	Moderate

¹⁰ This information is from the Ontario Ministry of Labour's analysis, available at: <https://www.services.labour.gov.on.ca/labourmarket-ui/search?lang=en>

Table 3 shows Canadian job posting for ten NOC codes identified in the labour scan between the years of 2019 and 2024. 2022 saw a marked rise in job postings across five major fields (NOCs 11201, 11101, 21223, 41402, 21222) and a significant dip in job postings for Information System Specialists. However, the overall tendency is an increase in almost all fields between 2020 and 2023; despite the slight downturn in 2023 across several of the fields, postings in most fields remained on par or above the listings from 2021, indicating a steadily increasing demand in Canada for data analyst skills over the past several years. In the longer term, the Canadian government predicts a total of 29,300 job openings for “Data Analysts – Informatics and Systems in Canada”, and identifies a labor shortage in this field that “is expected to persist in the 2022-2031 period”¹¹.

Table 3. Job Postings by NOC Code 2019 - 2024¹²



The MM, AI&A program is designed to deliver the core skills, methodologies, and practices (business) analytics professionals require. These include proficiency in mathematical and computer modeling of business problems; computer implementation of AI and analytics algorithms using programming languages such as SQL, Python, and R; desktop analyses using software packages such as Tableau, MS Analytics, SAP Hana, Mathematica, and Excel; and leveraging the robustness of cloud platforms such as Amazon Web Services (AWS) and Google Cloud. Coupled with these skills are important transferrable capacities, such as communication, problem-solving, critical-thinking,

¹¹ Government of Canada. “Data Analyst –Informatics And Systems in Canada.” Updated Nov. 29, 2023 <https://www.jobbank.gc.ca/marketreport/outlook-occupation/17882/ca>

¹² This information is from the Ontario Ministry of Labour’s analysis, available at: <https://www.services.labour.gov.on.ca/labourmarket-ui/search?lang=en>

collaboration, and inquisitiveness. Furthermore, developments in AI (and machine learning) are rapidly transforming how data is collected, processed, interpreted, and acted upon in organizational decision-making. Since 2017, the Government of Canada's Pan-Canadian Artificial Intelligence Strategy has been promoting research, innovation, and regulation to make Canada a global leader in AI development and implementation. Within Canada, Toronto has emerged as an AI hub, with generative AI jobs accounting for 0.3% of job postings for May of 2024. This contrasts with Vancouver and Calgary which, as the second and third highest AI centres in the country, had a 0.2% share of Generative AI postings for the same month. The MM, AI&A program's focus on applied AI and analytics will provide graduates with the skills and expertise they need to make meaningful professional contributions, and McMaster's proximity to many of Canada's leading AI employers will put graduates in a good position to contribute to this expanding field.

FEEDBACK FROM INDUSTRY LEADERS

In the process of developing the MM, AI&A program, we solicited feedback from several industry leaders who offered valuable insights that helped shape the curriculum and composition of the program. Industry partners were provided with a short overview of the program, a list of the Program Learning Outcomes, and lists of the required core courses and program-specific electives. Companies, individuals, and institutions consulted included the Bank of Montreal, Manulife, the Royal Bank of Canada, Ernst & Young, as well as alumni with experience at Toronto Dominion Bank, PwC, and Ada Support Inc. Respondents were especially enthusiastic about the experiential components, such as the Industry Practicum and internship, with the latter differentiating MM, AI&A from most comparable existing programs. Respondents also highlighted the value of the MM, AI&A program's focus on applied AI, including the ethical, social, and regulatory dimensions of this emerging technology. The curricular components focusing on developing soft skills such as teamwork, communication, and engagement with industry professionals (through industry leader teaching/co-teaching, Industry Practicum, and internship elements) were highlighted by many respondents as particularly important skills for graduates. Similarly, the program's focus on lifelong learning, which will empower graduates to learn new skills and manage unexpected developments, was given positive endorsements by respondents. Respondents underscored the need for cultivating deep relationships with industry, a priority built into both the curriculum (Please see Program Innovation in **Section 4.2**) and operational structure of the program (please see details about the External Advisory Board in **Section 3.1**).

Industry consultation particularly helped shape and reinforce development of the MM, AI&A program's focus on coupling hard skills in analytics with agile communication and teamwork capabilities that are sensitive to the complexities of business and management.

In a personal email to program leaders, Lilo Puma, Vice President, Transportation, for Wal-Mart Canada shared that,

In a few organizations lately, there is a shift from leadership believing that roles that transform significant amounts of data are the most important, towards seeking roles that not only transform that data but derive business insights from the transformation of data.

Mr. Puma's response highlights an important shift in contemporary business analytics whereby companies increasingly need people with skills that go beyond merely organizing, processing, and modelling large amounts of data. Of key importance are the abilities to ask the right kinds of questions of the assembled data, develop the pertinent analytics models that will address these questions, and translate the outputs thus generated into meaningful, communicable insights that can inform organizational strategy and decision-making. This high-level operation goes beyond merely having a working knowledge of a variety of analytics tools and methodologies; crucially, analysts must couple these hard skills with problem-solving expertise grounded in detailed knowledge of business and organizational contexts and best practices. Mr. Puma reinforced this shift in the labour outlook for analysts with a further remark:

We are now coveting individuals who can not only transform the data, but derive some business insights out of the data and have good conversations with leadership [...] Individuals who can transform the data are readily available; those who can transform and *interpret* the data with some business knowledge are too few and far between.

The MM, AI&A program's curriculum is designed to deliver the needed combination of skills and capacities underscored by Mr. Puma's insights into the contemporary labour landscape. Six core courses in hard skills will ensure students are well-versed in the repertoire of tools and methodologies needed for analytical processes. Further core courses in *Communication, Leadership and Change Management*, and *Ethics & Regulatory Frameworks in AI and Analytics* will provide students with a strong grounding in soft skills and management strategies tailored to analytics and applied AI. Three elective courses will enable students to deepen their understanding of one or more functional fields in relation to analytics. In concert, these courses will provide the combination of hard skills and contextual understanding Mr. Puma highlights as crucial to effectively interpreting data in specific business and organizational situations. This skillset will be further developed through experiential elements of the curriculum, such as the Industry Practicum and internship, providing graduates with valuable real-world experiences of applied AI and analytics.

Program leadership also received positive and helpful feedback from Chai Bhatt, Director of Data and AI for Purolator Inc. (Please see **Appendix D** for Mr. Bhatt's full letter of support.) With over 16 years' experience in the technology industry, Mr. Bhatt has deep expertise in leveraging AI and machine learning to solve business problems, to optimize processes, and to enhance customer experiences. Mr. Bhatt shared that,

The planned curriculum for this program demonstrates a comprehensive and forward-thinking approach to equipping students with essential skills that are increasingly in demand across various industries. The focus on experiential training, state-of-the-art quantitative models, and cutting-edge analytics methods will provide participants with the tools needed to excel in data-driven decision-making roles. The inclusion of leading software packages and programming languages such as Python, R, SAS, and cloud platforms like AWS and Google Cloud is particularly commendable, as these are the technologies driving innovation and efficiency in modern businesses.

This endorsement underscores the value of the MM, AI&A program's combination of hard skills and experiential components. Reinforcing Mr. Puma's emphasis, quoted above, on coupling hard skills with contextual expertise and communication, Mr. Bhatt provided further supportive feedback regarding the program's experiential components:

One of the standout features of this program is the two-term Industry Practicum, which offers students the opportunity to apply their learning to real-world business problems. This hands-on experience is invaluable, fostering the ability to not only analyze and interpret big data but also to recommend and implement actionable business solutions. This practical aspect will undoubtedly produce graduates who are not only knowledgeable but also capable of making an immediate impact in their respective fields.

Mr. Bhatt was also impressed with the MM, AI&A program's curricular thread emphasizing the ethical, social, and cultural dimensions of analytics, especially in relation to emerging technologies such as AI:

The program's emphasis on ethical, social, and cultural dimensions of analytics in business decision-making aligns well with the values we uphold at Purolator Inc. Understanding these aspects is crucial for responsible AI deployment and ensuring that technological advancements benefit society.

This focus on sustainability and social well-being is central to the mission of both McMaster and the DeGroote School of Business; it is an integral part of the MM, AI&A program's aim to empower graduates to make positive and transformative contributions in their professional and community life.

II. Evidence of Student Demand

The proposed MM, AI&A program would be attractive to students from STEM background, and those with good foundations in Mathematics and Computer Programming. The curriculum has been designed for pre-experience students, i.e., less than 4 years work experience, with undergraduate degree in Business, Economics, Engineering, and Sciences. However, students from other backgrounds will be considered, and would be encouraged to complete workshops and bootcamps on the foundational materials before the start of the curriculum. The structure and curriculum of the proposed program is distinct and will be the very first of its kind in applied AI and analytics for business management problems at McMaster University. Thus, the proposed program is not being developed at the risk of undermining any existing programs.

Evidence for interest in graduate education in Applied AI and analytics for business management problems in McMaster University is provided through the survey responses of the undergraduate students at three different faculties of the University, and the number of courses with applied AI and analytics flavor being offered in the MBA and undergraduate commerce programs at DeGroote School of Business.

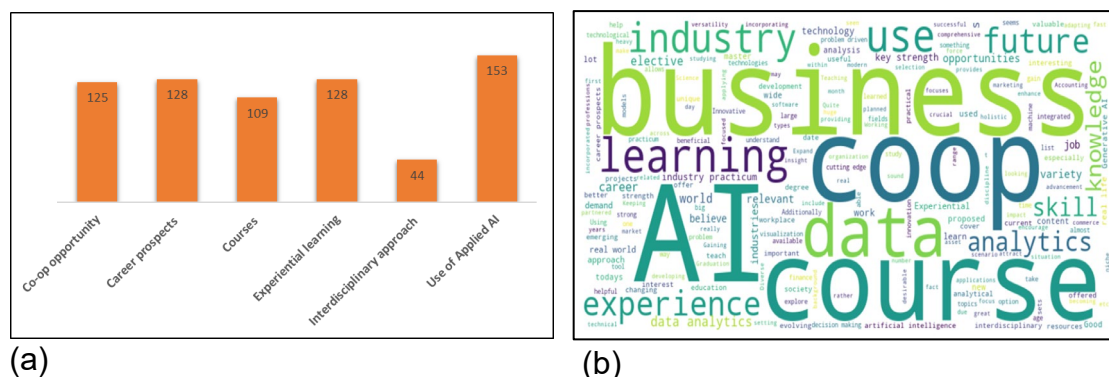
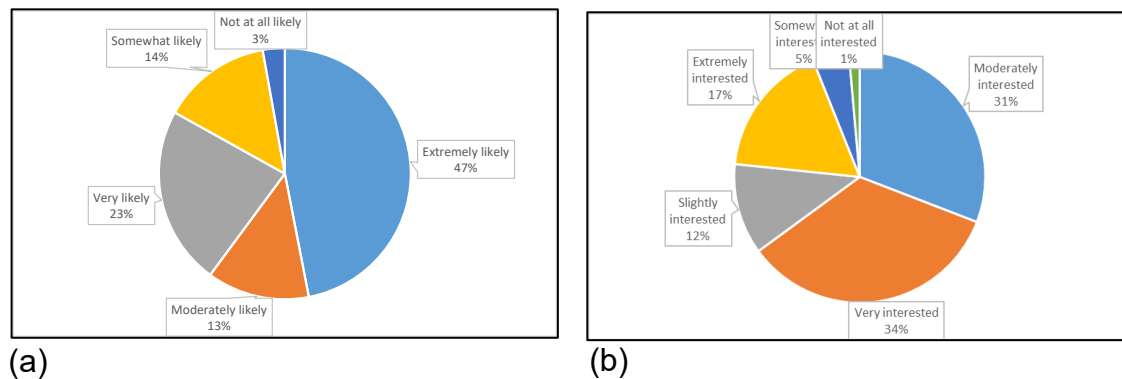
Survey Responses at McMaster University

Given the curriculum and to ascertain interest amongst undergraduate students at McMaster University, a series of questions based on the program description and a list of courses was developed for a student survey. The survey questionnaire was hosted on MS Forms, and the link was emailed to undergraduate students in the faculties of Business, Engineering, and Sciences at McMaster University. The survey generated over 215 responses, revealing tremendous enthusiasm and support for the proposed program. Respondents were between 17 and 24 years of age (with one undisclosed age response) and of these, more than half (125) were between 20 and 24. Most respondents (194) were interested in entering a business program for their graduate education. 78% of respondents (168) were interested in pursuing a career in the private sector, and 14% (30 respondents) were interested in the public sector. The remaining 8% of respondents were interested in careers in government, NGOs, entrepreneurship, or undecided.

97% of the respondents indicated the possibility of graduate education in the next 2-3 years (Figure 1a), while 87% of them were interested in the program and another 12% slightly interested (Figure 1b). Figure 1 is evidence of the importance of graduate education in general, and the interest amongst surveyed students for the proposed program in applied AI and analytics.

Respondents were asked to indicate which aspects of the program they liked. Figure 2a depicts the frequency histogram that lists the best aspects of the program that resonated

with the respondents. Amongst them, use of Applied AI, Experiential Learning, Career prospects, and Co-op (or internship) were ranked the top 4. The word cloud in Figure 2b underscores the elements of the proposed program most appreciated by the respondents. It is not a co-incidence that some of these factors were also ranked very high by employer partners and industry leaders.



Ted Rogers School of Management, Toronto Metropolitan University	Data Science and Analytics	36 FT 6 Int. 32 PT	35 FT 4 Int. 24 PT	35 FT 5 Int. 21 PT	37 FT 3 Int. 15 PT	51 FT 11 int. 10 PT
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Key: FT=Full Time; PT=Part Time; Int.=International; n/a=not available

Table 4 shows data regarding registration in competitor programs from 2019-2023. Despite the data set being incomplete, we can see a steady and perhaps even growing demand for graduate programs in business and management analytics over the five-year span. TMU's Data Science and Analytics program saw a significant bump of 35% in enrolments in 2023 (62 full-time students in total), following an average enrollment of about 40 full-time students for the prior four years. In the three years for which we could obtain data (2020-2022), York's Master of Business Analytics program saw an increase of 10% (61 enrollments in total) in 2022, in comparison to the prior two year's (55 enrollments). Between 2020 and 2023, Wilfrid Laurier's Management Analytics Program saw an overall increase of 50% (20 total enrollments in 2023). At its launch in 2022, Western's Master of Science and Management, Business Analytics Stream had 34 enrollments, jumping 34% to 52 enrollments by its second year of operation. This incomplete overview of enrollments by comparable programs in McMaster's catchment area suggests that there has been a steady demand for business analytics programs in the past five years, with a significant increase in 2023.

The MM, AI&A program plans to accept up to 40 students in the first year of its operation (2026/27), 50 students in its second year, with a steady-state maximum acceptance of 60 students per year by 2028/29. Please see **Section 2.2** for the Enrollment Allocations Chart.

Applied AI and Analytics courses at DeGroote School of Business

The MBA Program at DeGroote School of Business offers a specialization in Business Analytics, which consists of three required and two elective courses. The elective courses can be chosen from a list of available analytics courses offered by different business functional areas. This is one of the most popular specializations in the MBA Program, and students have always wondered about courses that can provide a more in-depth coverage of tools and techniques in applied AI and analytics and their applications to business management.

On the other hand, the undergraduate commerce offers courses in Years 3 and 4 which would fall under the analytics category. Some of these courses have multiple sections thereby underscoring their demand and the interest of in-program students to develop a

deeper understanding of applied AI and analytics. Many of these students have gone on to pursue graduate education in applied AI and analytics at competitor schools because McMaster University does not offer anything in this space. Several faculty members have served as referees for these students, who would have continued at McMaster University if a graduate program in applied AI and analytics existed.

Thus, the proposed MM, AI&A program will be of interest to students who are keen on developing an in-depth understanding of applied AI and analytics tools and techniques to solve managerial problems. This course-based program will add to the portfolio of world class programs at DeGroote School of Business and at McMaster University thereby creating experiential graduate education opportunities for undergraduate students from multiple programs housed in different faculties of McMaster University.

III. Justifiable Duplication

OVERVIEW OF COMPARABLE PROGRAMS

There are five universities in McMaster’s catchment area that offer comparable programs. Four of these, the University of Toronto (UofT), Toronto Metropolitan University (TMU), and Wilfrid Laurier University have independent Masters’ programs in management analytics; one institution, York University offers two masters’, one in business analytics and a second one in artificial intelligence; and, one institution, Western University’s Ivey Business School, offers Analytics as one of three possible streams within their Management MSc program. The programs at Ivey, Lazaridis, and Ted Rogers offer a Master of Science credential, while Rotman’s Master of Management Analytics (MMA) and Schulich’s Master of Business Analytics (MBAN) and Master of Management in Artificial Intelligence (MMAI) are akin to Master of Arts credentials. The proposed new program will offer a Master of Applied Science degree in AI and Analytics, a credential that is comparable to the five competitor programs in McMaster’s immediate catchment area.

Table 5. Campus location, program title, and timing of competitor programs

Institution	Campus Location	Program Title	Credential	Timing
Rotman School of Management, University of Toronto	Toronto	Master of Management Analytics	Master of Management Analytics (MMA)	11 Months, full time, in person, August start

Schulich School of Business, York University	Toronto	Master of Business Analytics	Master of Business Analytics (MBAN)	12 months, full-time, in person, May intake
Schulich School of Business, York University	Toronto	Master of Management in Artificial Intelligence	Master of Management in Artificial Intelligence (MMAI)	12 months, full-time, in person, May intake
Ivey Business School, Western University	London, Ontario	Master of Science in Management, Business Analytics Stream	Master of Science in Management (MSc)	16 Months, full-time, in person, Jan. & Sept. start times
Lazaridis School of Business and Economics, Wilfrid Laurier University	Waterloo	Management Analytics	Master of Science in Management Analytics (MSc)	12 months, full-time, Sept. start
Ted Rogers School of Management, Toronto Metropolitan University	Toronto	Data Science and Analytics	Data Science and Analytics (MSc)	12 month full-time or 24 months part-time (MRP option); 24 month full-time (thesis option)

Existing and Proposed programs at McMaster University

There are two existing/proposed programs at McMaster University, which should be highlighted in this section.

Continuing Education: Though not directly comparable, McMaster Continuing Education offers two certificates: one in data analytics, and a second one in artificial intelligence. Certificate in Data Analytics can be received by completing any five of the nine available courses, while that in Artificial Intelligence can be received by completing any five of the seven available courses. All courses are virtual, and participants can learn at their own pace and individually.

DeGroote School of Business (DSB): has a successful slate of MBA programming options (MBA Co-op; MBA FT; BLPT MBA; and EMBA in Digital Transformation). Given the success of the BLPT MBA program, the distinct audience it serves and the demand for hybrid programs, DSB is also developing a blended-learning part-time program called

Master of Applied AI and Data-Driven Decision Making (MAIDM). Proposal for both programs is being submitted concurrently.

It is important that the **MAIDM** program is targeted at early-to-mid career professionals in lower-to-middle management positions across a variety of fields. The objectives of the BLPT version are to graduate participants with the knowledge, expertise, and skills to interact with and lead analytics teams, to determine business value from outputs, and to effectively communicate with stakeholders. Thus, the program learning outcomes are distinct from the proposed MM, AI&A program because they are targeted at a different audience. Participants will take 10-required courses whose content is applied, and the pertinent concepts are introduced through case studies. This program is focused on building leadership, communication, critical-thinking and team management skills within the context of Applied AI and Analytics.

Table 6. Admission Requirements for Competitor Programs

School	Undergraduate Degree Requirements	Ref. Letters	Language Requirements	Tests	Supplements	Work Experience
Rotman School of Management (U of T)	4-year degree in relevant discipline with minimum B average in final year Min. B avg. In quantitative courses (incl. Calculus, linear algebra, probability and statistics) Online assessment for statistics and Python required	2 Academic references	English language proficiency requirement	GMAT/ GRE encouraged	Written essay, video interview, real-time written response	
Schulich School of Business (York)	4-year degree, min. B+ average in last two full years in one relevant subject, with further requirements for non-STEM students	Two letters	English language proficiency requirement	GMAT/ GRE not required	Two written essays, one timed essay, two video essays	Recommended but not required
Ivey Business School (Western)	4-year degree, min. Average 75% in at least two years of full-time undergraduate studies Prerequisites in calculus, linear	Two letters	English language proficiency requirement	GMAT/ GRE not required but	Online written essay questions and video questions	Not required

	algebra, probability, statistics, computer science			suggested		
Lazaridis School of Business and Economics (Wilfrid Laurier)	4-year degree in business, economics or quantitative discipline, min. B+ in final two years Min B+ in calculus and statistics	Two letters, at least one academic	English language proficiency requirement	GMAT/ GRE not required	An in-person phone interview may be required	Alternative admission requirements available to prospective students with extensive relevant work experience
Ted Rogers School of Management (TMU)	4-year degree in engineering, science, business, economics or related discipline, min. B in the last to year of study	Two letters	English language proficiency requirement	GMAT/ GRE not required	Statement of interest 500-1000 words (MRP option); 1000 words (thesis option)	No work experience required

The five competitor universities reviewed for this study are full-time with program lengths ranging from eleven months (UofT) to sixteen months (Western). TMU has a twenty-four-month thesis option, a twelve-month option requiring a Major Research Paper, and a twenty-four-month, part-time MRP option. Laurier and York's programs are both twelve months. Based on this overview, the proposed MM, AI&A program's length of sixteen months (four academic terms) is in keeping with the range of durations of comparable programs.

KEY FEATURES OF THE MM, AI&A PROGRAM

The proposed MM, AI&A program will provide hard programming and software skills in analytics alongside soft skills and best practices applicable to a wide range of business and organizational contexts. The program's core courses and experiential components

(such as the Industry Practicum and internship) will couple hard, analytics skills with widely applicable soft skills such as communication, project management, leadership, critical thinking, and ethical analysis. There will be a strong, curricular focus on applied AI (machine learning and generative AI) for business decision making, with two core courses dedicated to providing knowledge of AI models and methods. Amongst the programs studied for this report, only York and Laurier have comparable emphases on the implications of AI and machine learning on the fields of analytics, with each program having two core courses dedicated to these topics. As described in **Section 3.2.4**, below, the MM, AI&A program will have two core courses dedicated to AI and its applications in business management problems. Two further courses, *Communication, Leadership and Change Management*, and *Ethics & Regulatory Frameworks in AI and Analytics*, will focus on developing leadership, communication, and critical evaluation skills in relation to AI and analytics for business problems.

In addition to this grounding in key analytics skills, tools, and innovations, the MM, AI&A program is designed to provide students with the flexibility to choose one or more functional areas of business to focus upon. Three out of the twelve courses' students take in the program will be electives, for which they can choose from a slate of fourteen different courses. Five of these courses will be newly developed for the MM, AI&A program and nine will be cross listed with existing MBA courses (for a full list of possible elective courses, please see **Section 3.2.5** and **Appendix B**). This combination of a strong grounding in core skills with elective flexibility will allow students to tailor the program to their specific professional and personal goals, while a focus on experiential learning will allow students to synthesize their knowledge and skills through practical application. The cross-listed courses will also give students to interact and engage with MBA students, which will enhance learning for students from both programs. In terms I and II, students will complete an Industry Practicum for which they will work in small groups, using analytics to address a real-world problem determined in collaboration with industry or community leaders. Students will then, in term III, complete a four-month internship in an appropriate industry where they will work on applied AI and/or analytics project. These experiential components were developed in collaboration with industry leaders who provided valuable feedback during the MM, AI&A program development; they will provide students with hands-on industry experience that will greatly contribute to their development into career-ready graduates by the end of the program.

Of the five comparable programs, all are structured around an experiential capstone component save TMU, which requires students to produce original research, either with a thesis or MRP option. Rotman has a practicum from January to June that asks students to work in teams to tackle a real-world business problem using analytics skills and tools. Students in Laurier's program have a similar field project in the winter and spring terms whereby they work in teams using analytics to address managerial issues in a company

or organization. In the fall and winter terms, York's program has students working in teams to tackle analytics consulting project in collaboration with business and community partners to address real-world problems. The MM, AI&A program's Industry Practicum is thus in keeping with practices in several comparable programs. However, the MM, AI&A program is unique amongst the programs studied for this report in that it follows the two-term Industry Practicum with a four-month internship. For the paid internship, students will work with a partner organization to apply their learning, skills, and knowledge of applied AI and analytics to a real-world problem. This experiential engagement will provide students with an excellent opportunity to work closely with professionals on real-world analytics projects. At every stage of the internship, DSB's Career and Professional Development Team will work closely with students and industry partners to ensure that this program component is meeting the expectations and needs of both learners and partner organizations. (For more on internships, please see **Section 3.2.7.**)

Of the programs studied here, only Western's Master of Science in Management, Business Analytics Stream offers a full-time, four-month internship. Students at Western can choose to pursue either the internship or an analytics-driven research project. We believe that the MM, AI&A's internship, coupled with other experiential components such as the Industry Practicum, will make the program attractive to students who are looking to ground their education in applied AI and analytics in real-world situations and experience. As alluded, this program is targeted at students with undergraduate degrees in Business, Economics, Engineering, Science and others with strong foundation in Mathematics and Computer Programming, and hence the experiential components will serve them in good stead.

Further distinguishing the MM, AI&A program is a curricular emphasis on the cultural, social, and ethical dimensions of business analytics and applied AI. A focus on critically assessing analytics tools and methodologies will be woven through all the core courses, culminating in a fourth-term core course, *Ethics and Regulatory Frameworks in AI and Analytics*. This curricular element will ensure that alongside practical skills in analytics, graduates of the program have the capacity to critically evaluate and address the hidden biases and power imbalances that can be reinforced by analytic tools and practices (please see PLOs #3 and 5, in **Section 1.4**, above). This, in turn, will contribute to students' development as informed, critically engaged business leaders, and lifelong learners.

In summary, the five programs studied here all provide groundings in business analytics skills and technologies alongside soft skills such as communication, ethics, and project management. We believe the proposed MM, AI&A program will add to the capacity of southern Ontario's graduate education system to provide curricula that will help meet the growing demand for analytics skills across a diverse range of fields, while also fostering important critical-thinking and leadership capacities applicable in a wide range of

professional contexts. Elective flexibility built into the MM, AI&A program will allow students to pursue their individual interests and goals by focusing on one or more functional fields, providing specific, career-oriented contexts for the application of their analytics skills. The Industry Practicum, internship, and other experiential learning components, such as guest talks and the Poster Fair (please see **Sections 4.2 and 4.3**, below), will provide students with the experience, confidence, and capabilities they need to apply analytics methodologies and tools to a variety of contexts and industries. An emphasis on innovations such as machine learning and applied/generative AI will competitively position graduates of the program to make meaningful contributions to business and society.

1.7 DEGREE NOMENCLATURE

The degree earned through this program will be a *Master of Management*, and the stream will be *Applied AI and Analytics*.

2. ADMISSION & ENROLMENT

2.1 ADMISSION REQUIREMENTS

The MM, AI&A program will require students with a four-year bachelor's degree or equivalent from an accredited university in engineering, science, computer science, statistics, mathematics, or economics/business with a minimum B+ average in the last two full years of academic work. In addition, students should have a minimum of one university-level course in Mathematics (Calculus/Linear Algebra), Statistics, and Computer Programming. The normal expectation is that these courses will have been completed within the last five years. Students from other backgrounds, or without the necessary course prerequisites listed above, will be considered if they can provide evidence of comparable skills, experience and/or training, as detailed in their personal essays and CVs.

The admissions process will also require the following components:

Two reference letters: at least one letter must be from an academic source; the other may be professional.

Recorded Video Interview: applicants will be required to complete an online interview consisting of pre-recorded questions that the applicant will answer and submit via the Kira software system.

Professional CV

Essay: applicants will be required to write a 500-1000-word essay outlining their reasons for wanting to pursue the MM, AI&A program and any personal,

professional and/or background information that they wish to share that would help reviewers assess and situate their candidacy. The essay will allow students to outline any professional experience that might augment or compensate for portions of their undergraduate schooling. It will also allow students to discuss factors such as ethnicity, gender alignment, and family background that will help reviewers identify candidates from equity-deserving groups, and to take these factors into consideration.

English Language Proficiency: Applicants must provide a valid TOEFL (minimum score of 92) or IELTS (minimum score of 6.5) test to prove proficiency in the English language. TOEFL and IELTS scores are valid for two years from the test date. Applicants are exempt from submitting an IELTS or TOEFL test if they have attended, in full-time academic studies (non-ESL), an accredited university for their entire undergraduate degree where English was the language of instruction. If the applicant's university is located outside of North America, a clear statement on their transcript or a letter from the institution confirming the language of instruction was English must be included with the application. Applicants who attended a university in North America may be asked to provide proof of English Language Proficiency if reviewers are unable to confirm the university's language of instruction or if they find that the university has more than one language of instruction.

GMAT/GRE and other standardized test scores are not required, but may be recommended to help strengthen the application.

These components are in keeping with McMaster's general admission requirements for Masters' programs and the standards of the DeGroote School of Business.

2.2 ENROLMENT PLANNING AND ALLOCATIONS

Because the MM, AI&A program will be sixteen months, after the first year of operation there will be an overlap of the incoming students and the previous year's cohort in terms I/IV. (Term I for cohort Y overlaps with term IV of the previous cohort X; though the students of the two cohorts will be taking different courses, they will be enrolled in the program at the same time). This overlap is reflected in the chart below in the "Total Enrolment" column. In practice, the total enrolment in terms II and III will be only the most current cohort of students. In this manner, the program aims to reach its steady-state enrolment target of admitting 60 students per year in Fall of 2028. The Maturity figure of 120, however, reflects the maximum projected enrolment in the program, which would be reached in Fall of 2029.

Academic Year	Cohort in terms 1-3	Cohort In term 4	Total Enrolment	Maturity (Steady State)
2026/27	40		40	
2027/28	50	40	90	
2028/29	60	50	110	
2029/30	60	60	120	120

2.3 ALTERNATIVE REQUIREMENTS

As mentioned above, applicants will be required to submit a 500-1000-word essay detailing the value that the MM, AI&A program holds in relation to their educational and career goals. This essay is not a timed exercise; applicants will compose this text independently and submit it through the online portal with their CV and other materials. The essay will allow students to detail prior work and learning experiences that may pertain to the MM, AI&A program but are not reflected on their transcripts or sufficiently detailed in their CVs. For instance, the essay will allow applicants who have a bachelor's degree in a non-STEM field but who have had significant extra schooling or work experience to explain how they have cultivated the necessary prerequisite skills for entry into the program. The essay will also allow applicants, should they wish, an opportunity to disclose information about their background and identity that can help reviewers discern their membership in equity-deserving groups.

2.4 ACCESSIBLE AND EQUITABLE ADMISSIONS PROCESSES AND PRACTICES

The personal essay, detailed in **Section 2.3** above, will help reviewers consider a wide range of factors in the application process to foster inclusivity and diversity. Applicants' pertinent volunteer and work experience, extra-curricular training, inclusion in equity-deserving groups, and other factors will help reviewers make informed and equitable decisions. The aim of this process is to ensure that the MM, AI&A program admits students with a wide range of backgrounds, interests, and orientations, and to help compensate for barriers to higher education experienced by many people and communities.

The MM, AI&A program will offer one scholarship of full tuition and living expenses to an Indigenous applicant, with the award selection process overseen by McMaster's Indigenous Student Services team. Several scholarships of varying amounts will be available in the program. It is anticipated that in steady state, the program will be able to institute additional scholarships that will be directly sponsored by industry partners. All entrance scholarships will be awarded by the Admissions Committee based on the student applications and interviews, while industry sponsored scholarship will be awarded based the criteria agreed upon with the sponsors.

3. STRUCTURE

3.1 ADMINISTRATIVE, GOVERNANCE AND COMMUNICATION

Strategic Governance

The proposed new program will be administered by the DSB with overall responsibilities falling to the School's Associate Dean (Graduate Studies) for all academic and curricular matters and the Associate Dean (Faculty Affairs and Accreditation) for all program delivery and teaching-related matters.

Operational Daily Governance

An MM, AI&A Program Director (PD) will oversee the ongoing design and delivery of the program. This will include working with faculty and a MM, AI&A Program Curriculum Committee (PCC) to ensure that all core courses and electives align with the program's PLOs and requirements. The PD will report to the Dean of DSB while working in collaboration with the above-noted Associate Deans, as well as the Curriculum Committee and External Advisory Board.

External Advisory Board

The PD will work with members of an External Advisory Board consisting of industry leaders who will provide valuable input that ensures the curriculum responds to ongoing developments in the practical application of analytics. The EAB will also help the PD cultivate productive, reciprocal relationships with industry partners for the development of the Industry Practicum and internship components of the program. The EAB will also help promote and champion the program through their professional relationships and contacts. The EAB will meet at least once a year, with more informal meetings and conversations as necessary. It will consist of:

- The Program Director

- 2 DSB faculty members who teach in the MM, AI&A program

- 2-4 Business and industry leaders with extensive practical experience in the field of analytics and applied AI

Management Support

DSB will leverage its existing support staff and infrastructure, with anticipation of some incremental resource requirements. Several support staff will manage the quotidian operations of the new program, including:

Program Administrator: The Program Administrator is accountable for developing, implementing, and maintaining the efficient operation of the program. They will be

responsible for providing overall administrative direction including coordinating all aspects of the program such as curriculum administration, implementation, promotion, recruitment, admissions, resource management, and financial management. (1 FTE)

Admissions Officer: The program will leverage existing Admissions staff and infrastructure for DSB Specialized Graduate Programs. The Admissions Officer is responsible for ensuring targets are met by facilitating and overseeing the admissions review process. The Admissions Officer will work with the Program Admissions Committee to set admissions criteria and review qualified applicants from a diverse pool of post-secondary students. They will also provide information and conduct recruitment and orientation sessions in various communities. (0.25 FTE)

Administrative Assistant: The Administrative Assistant will provide front-line support to students and faculty by assisting with day-to-day inquiries and resolving concerns. They will also support admissions processing and respond to applicant inquiries. They AA will plan and coordinate program events, including scheduling meetings and booking event spaces. (0.5 FTE)

Career Manager: The Career Manager will work with students to secure internships as well as full-time roles at graduation. In addition, a further half position is needed to support employer business development. (1.0 FTE + 0.5 FTE = 1.5 FTE)

DSB Centralized services

TLS and ITS Team:

The Teaching and Learning Services team supports DeGroote staff and faculty in areas of instructional design, educational development, learning experience design, and the use of media and teaching technologies that enhance student learning experience. Instructors can reach out to TLS to consult in course learning needs, student journey mapping, recommending enhancements using best practices in teaching, design and development of new courses and programs, consultation for course (re)design, and teaching technologies. TLS helps augment DSB's teaching and learning effectiveness in both traditional and non-traditional environments.

The DSB Information Technologies Services team (Operations and Support department) provides vital support to DSB staff and faculty including, server infrastructure, systems administration, information security, data backup and recovery, business continuity, AV systems (for DSB classrooms, labs, and conference rooms), and end user computing support. The ITS Software Applications department provides custom software and database development, central systems integration, software and research database licencing, and technical business needs analysis and project management. The DSB's ITS team will support existing learning infrastructure at the Ron Joyce Centre, and the new classroom and hub facilities in the new MCCD building.

Career and Professional Development Team:

DSB's in-house CPD will provide full recruitment and logistical support for the MM, AI&A internship program. The team will oversee and support the MM, AI&A students at every stage of their internship, from helping ensure that students secure a position with a relevant professional partner, to monitoring students' needs and concerns over the four-month period, to site visits and meetings with employers, to following up with students after the internship and helping them fill out the Student Reflection and Evaluation form.

3.2 STRUCTURE AND REGULATION

3.2.1 Structure and Program Learning Outcomes

The governance of the MM, AI&A program is structured to ensure that the Program Learning Outcomes are achieved and maintained in the ongoing administration of the program and its curriculum. A key responsibility of the PD will be to guarantee that the curriculum and any proposed changes will contribute to the Program Learning Outcomes and Degree Level Expectations outlined in **Sections 1.4** and **1.5**. The PD will work closely with faculty members and with members of the External Advisory Board to ensure that the curriculum and PLOs are informed by, and respond to, developments in analytics and applied AI and their application to diverse functional fields. To this end, the PD will also be aided by DSB's Advancement and Alumni Office, who will maintain contact with graduates of the program to solicit feedback about the program and updates about career paths.

3.2.2 Breakdown of Curriculum

The MM, AI&A program is comprised of a total of forty-two credits (with three credits being the equivalent to a one-semester course and six credits equalling a two-semester course). MM, AI&A students will take a total of nine one-semester core courses (twenty-seven credits in total) that will be newly created for the program (Please see **Section 3.2.4** for details about core courses). Eight of these courses will be in the first two terms of the program, with one core course being taken in the fourth term. In the fourth term, students will also take three one-semester elective courses (nine credits in total) for which they can choose from fourteen courses specifically related to analytics, (Please see **Appendix A** for descriptions of the new elective courses, and **Section 3.2.5** and **Appendix B** for a full list of electives students can take). In terms I and II, students will also complete an Industry Practicum (please see **Section 3.2.6** for details). In the third term, students will complete an internship. Any students who are unable to secure an internship will complete an industry-oriented project facilitated through DSB's Learning Hubs or in collaboration with the MITACS program or a research-assistantship with a faculty member on an analytics and/or applied AI research project. (Please see **Section 3.2.7** for more details on internships and industry-oriented projects).

Table 7 provides an overview of the curricular components by term. This curriculum is designed to ensure that students' understanding of analytics tools, methodologies, and professional skills is being continually reinforced through experiential components, such as the Industry Practicum and internship. Once students have completed eight of their core courses and the Practicum in terms I and II, and have had a chance to immerse themselves in real-world application of analytics in the third-term internship, the curriculum allows students to explore specific functional fields (in three elective choices) while reflecting on holistic issues of ethics and regulatory frameworks (in the final core course). In term IV, students will also participate in a Poster Fair where they will individually create a poster presentation that summarizes their learning, challenges, and achievements in the program. This will be an opportunity for colleagues, faculty, alumni, community partners and prospective future students of the program to see the wide range of projects, interests, innovations, and applications that the cohort presents (please see **Section 4.2** for more details about the Poster Fair).

Table 7. Curricular Components and Timing

Term	Timing	Number of Courses	Credits	Practicum/ Internship	Credits	Total Credits
I	Sept. - Dec.	4 (core courses) + Career course	12	Phase 1	3	15
II	Jan.- April	4 (core courses) + Career course	12	Phase 2	3	15
III	May - August			Internship		
IV	Sept. - Dec.	4 (1 core course; 3 electives)	12			12
Totals		12 (one-term courses) + 2-Career courses	36	1 (two-term course)	6	42
				1 (one-term internship)		

*At McMaster, a single-term course is weighted at 3 credits, a two-term course is weighted at 6 credits.

3.2.3 Overview of Student Progression through Curriculum

The MM, AI&A degree is a sixteen-month program divided into four terms of four months each. It has a September start time and will be a full-time program delivered in-person, meaning students will benefit from a cohort experience that highlights collaboration,

teamwork, group learning, and personal instruction. Coursework will consist of nine required courses, three elective courses, an Industry Practicum that spanning terms I and II, and a four-month internship in term III.

3.2.4 Core Courses

All students will take nine core courses (please see **Table 8**, below). These courses will be newly created for the program and will not be open to students from other degrees or programs, except by special permission of the department. The bulk of the core courses are strategically grouped in terms I and II so that students can develop their skills and knowledge in tandem with the problem-based learning model that structures the Industry Practicum. Given the pre-experience of the participants, a two-part *Career Course* will be offered in terms I and II. Once students have completed their internship in term III, they will return to classrooms in term IV for a final core course, and for three elective courses of their choosing. **Table 8** provides an overview of the required core courses and their timing.

Table 8. MM, AI&A Program Core Curriculum (Required Courses)

Course Name	Credits	Term
Data Acquisition, Management and Visualization	3	Fall
Data Analytics using Python	3	Fall
AI Fundamentals	3	Fall
Multivariate Statistics for Business Decision-Making	3	Fall
Career Course – Part A	0	Fall
Simulation and Risk Analytics	3	Winter
Prescriptive Analytics for Business	3	Winter
Leveraging AI and Deep Learning in Business	3	Winter
Communication, Leadership and Change Management	3	Winter
Career Course – Part B	0	Winter
Ethics & Regulatory Frameworks in AI and Analytics	3	Fall

A term-by-term breakdown of student progression through the program is as follows:

TERM I (Sept.- Dec.)
Data Acquisition, Management and Visualization
Data Analytics using Python
AI Fundamentals
Multivariate Statistics for Business Decision-Making
Industry Practicum, Phase 1
Career Course – Part A

In term I, students will take three courses dedicated to core skills, tools, and methodologies related to business analytics. One of these three courses, *AI Fundamentals* will provide an overview of the AI landscape, and then take an in-depth look at most popular machine learning concepts. While these courses will focus on skills, tools, and methods, they will also incorporate modules on critically evaluating the strengths and limitations of different tools, platforms, and analytics practices. This emphasis on the cultural and ethical dimensions of analytics will be introduced in the core courses of terms I and II and then expanded upon in the final core course in term IV.

While pursuing these subjects, students will also be working on Phase 1 of the Industry Practicum. Phase 1 of the practicum will involve students researching different industries or functional fields they might like to focus on for the Practicum, meeting with an industry partner, and identifying a real-world problem to tackle in Phase 2. A Practicum instructor will group students into small teams according to their shared interests and meet with them at least once per week. In Phase 1, students will also complete a module on research skills such as using research search engines, identifying and evaluating diverse sources, and organizing, summarizing, citing, and incorporating research. In addition, Phase 1 will provide an opportunity to brush up on tools, techniques and programming knowledge. These skills will be necessary for Phase 2 of the Practicum, which will require students to use analytics and applied AI skills to solve an industry-related problem.

Though at the outset of Term I, students will not have the skills or knowledge needed to apply analytics properly, Phase I will start them thinking about different functional fields and the kinds of problems that business analytics entails, as well as allowing them to have informative conversations with industry leaders. Phase 1 will thus provide students with a practical objective that will help focus, reinforce, and ground the knowledge and skills that they learn in term I's core courses. This process of reflecting upon practical applications of skills will be reinforced in the core courses themselves by assignments such as case studies, group projects, and presentations, and by guest talks and possible co-teaching by industry leaders.

A fourth core course, *Multivariate Statistics for Business Decision-Making* will introduce the fundamental concepts of business statistics, and then introduce multivariate statistical techniques and their applications in business. The course will demonstrate application of techniques on big data using state of the art software packages and programming languages to solve complex business problems and make data-driven decisions. This course together with the other three courses in Term I will ensure that learners have the relevant skills and foundational knowledge of applied AI and Analytics that will be necessary for Phase 2 of the Industry Practicum.

The 0-unit *Career Course - Part A* is designed to equip students with the resources and personalized strategy necessary to successfully secure their internship and to achieve long-term career goals.

Term II will add to students' repertoire of analytics skills and knowledge with three more core courses, one of which will focus on the use of more sophisticated algorithms of AI for business applications. As with term I's core courses, critical reflection on the strengths and limitations of these facets of business analytics will be incorporated into each course. Students will also take *Communication, Leadership and Change Management*, which will focus on the role of AI and Analytics in driving organizational success and consider development, execution and leadership. At the same time, students will work on Phase 2 of the Industry Practicum. Working in teams and in collaboration with industry partners, they will now practice their skills assembling, processing, and interpreting data in relation to an identified real-world problem in a specific functional field. Their findings will be shared with industry and community partners who will provide feedback that will help students understand the practical implications of the analytics process they have been engaged with. By the end of term II, having completed eight core courses and the industry practicum, students will be in a good position to enter their four-month internship. The 0-unit *Career Course - Part B* is the second part of the Career course developed to equip students with strategies relevant to securing an internship and achieving their long-term career goals.

TERM II (Jan.- April)
Simulation and Risk Analytics
Prescriptive Analytics for Business
Leveraging AI and Deep Learning in Business
<i>Communication, Leadership and Change Management</i> t
Industry Practicum, Phase 2
Career Course – Part B

TERM III (May – Aug.)
Internship (Alternative: industry-oriented project facilitated by MITACS and/or Learning Hubs; research-project with faculty)

Students will pursue a four-month internship in a suitable industry related to business analytics. DSBs Career and Professional Development team (CPD) will support students at every step of this journey, from helping them secure an internship, to site visits and meetings with employers, to post-internship follow-up, in which students will fill out a reflection and evaluation form. The paid internship will provide valuable experiential learning opportunities for students to practice their skills, apply their knowledge, build professional relationships, and develop a sense of their career interests. If an internship cannot be secured, students will either engage in an Industry-oriented project in collaboration with MITACS and/or DSBs Learning Hubs, or work as a research-assistant on an analytics project. (Please see **Section 3.2.7** for details about the internship and industry-oriented project.)

TERM IV (Sept. – Dec.)
Elective I
Elective II
Elective III
Ethics and Regulatory Frameworks in AI and Analytics
Poster Fair

In term IV, students will take their final core course, *Ethics and Regulatory Frameworks in AI and Analytics*. Here, students will be able to synthesize and evaluate their knowledge of various skills, methodologies, and platforms cultivated in terms I and II, and through their internship experiences in term III. Collaborative assignments and presentations will give students opportunities to share what they have learned in the past twelve months with their colleagues, and to raise important ethical, regulatory, and leadership questions about analytics as a field. Students in term IV will also choose three electives to broaden their understanding of the contexts and industries to which analytics pertains (For a description of electives please see **Section 3.2.5** and **Appendix B**).

At the end of term IV, students will create a poster presentation detailing their learning, challenges, and accomplishments throughout the program. This will give students an opportunity to reflect upon the various components of the program and create an individualized narrative to share their experiences with others. The posters will be presented at a fair in which colleagues, faculty, community partners, alumni, and

prospective future students can learn about the various skills, projects, experiences, innovations, and accomplishments made by that year's cohort.

(For short descriptions of MM, AI&A core courses, please see **Appendix A**. For more detailed descriptions of the Industry Practicum and internship, please see **Sections 3.2.6** and **3.2.7**. For details about the Poster Fair please see **Section 4.2**.)

3.2.5 Elective Courses

A key strength of the MM, AI&A program is the flexibility it offers students to tailor their nine units of elective credits towards individualized personal and professional goals. While the nine mandatory courses will provide a deep grounding in core skills, technologies, practices, and leadership related to analytics and applied AI, the three elective courses will allow students to focus on one or more functional areas for enhancing their analytics skills and training. To this end, the MM, AI&A program will develop five new elective courses and leverage nine existing analytics courses from the Master of Business Administration (MBA) program. Allowing students to access electives from the MBA program will also facilitate interaction with students from another stream, which is going to enhance the learning experience of students in both programs. A non-exhaustive list of courses that may be either newly developed or cross-listed with existing offerings follows:

Table 10. Elective Courses Specific to the MM, AI&A Program

Course Name	Credits	Status
Analytics and Decision-making in Healthcare	3	Exists
Big Data in Finance	3	Exists
Business Applications and Data Analytics/AI	3	Exists
Business and Economic Forecasting	3	Exists
Data Mining and Business Intelligence	3	Exists
HR Analytics	3	New
Introduction to FinTech	3	Exists
Marketing Analytics	3	Exists
Marketing Research	3	Exists
Operations & Supply Chain Analytics	3	New
Procurement and Logistics Analytics	3	New
Revenue and Pricing Analytics	3	New
Strategic Marketing Analysis	3	Exists
Synthetic Consumer Analytics	3	New

For short descriptions of the five new elective courses, please see **Appendix A**.

3.2.6 Industry Practicum

In terms I and II, students will work in small teams of three or four on an Industry Practicum based on the inquiry model of instruction developed by McMaster University. In this model, students identify a problem then assemble and apply the proper tools, methodologies, knowledges, and expertise to come up with viable solutions. In the final step of the inquiry model, students share their findings with colleagues, instructors, and community members. For the Practicum, a faculty instructor will meet with each student team at least once per week, and more often if needed throughout the terms.

The Practicum is divided into two phases of one term each. In Phase I of the Practicum, students will be grouped, as much as possible, according to their specific interests in applying analytics to a particular industry/sector. With guidance from the instructor, each team will also be expected to meet with an industry partner to identify a managerial problem and data collection parameters. Ideally, these initial meetings should be in person, however, a virtual option will be available should there be scheduling, commuting, or accessibility considerations. Periodic follow up with the industry partner(s) could be in person or virtual. Near the start of Phase 1, students will also complete a research methods module that will introduce them to basic research skills such as using search engines, and identifying, evaluating, citing, and incorporating different kinds of research. In addition, Phase 1 will provide an opportunity to brush up on tools, techniques and programming knowledge. These skills will be used in Phase 2, where students may engage in industry-related research to address the real-world problem they have identified.

In Phase 2, students will conduct further research, identifying and assembling appropriate datasets, analytics tools, and methodologies to address the problem. After analyzing the data using different tools and algorithms, the student teams will define solutions based on their interpretations of the analytics outputs. The final stage will involve students communicating these findings with instructors and industry partners, and receiving feedback.

The Practicum will provide students with opportunities to explore, practice, and refine the key capacities that program leadership has identified as crucial for professionals in contemporary fields that utilize analytics. Students will develop mathematical and computer modeling abilities, insights on the selection of appropriate tools and algorithms, and the ability to process and analyze data in combination with the contextual expertise and the soft skills needed to formulate and communicate interpretations of data and outputs relevant to business and organizational decision-making.

3.2.7 Internship

MM, AI&A students will, in term III, complete either a four-month internship or an industry-focused/analytics-research project. For the internship, students will be supported at every

stage by DSB's Career and Professional Development team. CPD will help students find a suitable internship opportunity and provide supports, site-visits, and feedback over the course of the term. They will also help students complete a Feedback and Evaluation form at the end of the internship. This form summarizes employer feedback and provides an opportunity for students to respond, while also asking students to provide their own reflections and evaluations of their internship experience. Students will also have a chance to draw from their work experiences in the term IV *Ethics & Regulatory Frameworks in AI and Analytics* course, and in the Poster Fair (please see **Section 4.2** for details about the Poster Fair.) As an opportunity for work-integrated learning, the internship is a key experiential component of the MM, AI&A program's curriculum. If, for any reason, students are unable to secure an internship, they will either pursue an equivalent experiential component in the form of a four-month industry-related project facilitated through the data science and analytics Learning Hubs (please see **Section 4.3**) and Mitacs Accelerate Program, or a research-assistantship on an analytics project. For this, students will use their analytics skills and knowledge to work on an industry-oriented/academic-research project supervised by skilled faculty in collaboration with community partners.

3.3 GRADUATE PROGRAMS - PROGRAM LENGTH

MM, AI&A will be a sixteen-month program spanning four academic terms, with term I starting in September of each academic year. The program will run through to December of the following academic year. The four-term time frame is necessary to incorporate the core courses, Practicum, internship, and elective components of the curriculum.

4. CURRICULUM AND TEACHING

4.1 PROGRAM CONTENT

Business analytics is a rapidly growing, evolving field. It is important that students of the MM, AI&A program develop the capacities they need to become and remain current about best-practices and emerging industry trends. This involves providing students with up-to-date knowledge and skills regarding analytics tools and methodologies, but also entails enabling students to independently identify and evaluate new developments, trends, tools, and technologies (regarding the lifelong learning element of the curriculum, please see PLO#6 in **Section 1.4**). This will be accomplished through skilled instruction, experiential learning, community consultation and engagement, and curricular design, all of which will be supported and furthered by the operational structure of the program.

The MM, AI&A program governance is designed to ensure that the curriculum remains sensitive to the changing needs of industry and society, and to emerging developments in analytics, applied AI, and business. Advice regarding industry developments, needs,

and trends will be solicited from the members of the External Advisory Board (Please see **Section 3.1**) at annual meetings and through informal meetings and conversations between board members, faculty, and the PD. Input from DSB faculty teaching in the program will be gathered by the PD at the end of each term. By the end of the second year of the program, the PD will be able to follow up with alumni of the program's first cohort. After this, input from alumni regarding career paths and the ongoing valuation of the program will be solicited annually by the PD working in collaboration with DSB's Alumni and Advancement Office. It will be a key responsibility of the PD to assemble, review, and summarize this input from External Advisory Board members, faculty, alumni, and students, and to make recommendations regarding the ongoing effectiveness and development of the MM, AI&A program's curriculum to the Program Curriculum Committee (PCC), which will meet at least once per year. This process will ensure that the curriculum evolves in a way guided by the PLOs and informed by the changing needs of students, business, and society. It will also help shape the PLOs themselves, as the PCC revisits and refines them over time in response to evolving needs, trends, and circumstances. The PD will also work closely with faculty, community leaders, students, and alumni to ensure that the MM, AI&A curriculum address McMaster's diverse student population by reflecting a wide range of local, national, and global perspectives. This diversity of viewpoints and concerns will, for instance, be reflected in the case studies, simulations, and data sets used in core courses. These materials will be developed in collaboration between the PD, PCC, faculty, and industry leaders, and will represent different industries and diverse parts of the world.

The measures to ensure that the MM, AI&A program's curriculum is responsive to the needs of a diverse student population and to industry developments are in keeping with the priorities outlined in McMaster's Strategic Mandate Agreement and the DeGroote School of Business' strategic priorities. Specifically, the program will contribute to McMaster's commitment to providing skills and job outcomes that will promote graduate employment in a related field; an institutional emphasis on experiential learning; and productive collaborations with community (For more details about how the program aligns with McMasters SMA, please see **Section 1.3.1**). The program also strongly aligns with the DSB's strategic goals,¹³ especially in three key areas:

1. **Teaching and Learning.** DSB is committed to a culture of excellence that motivates students to become mindful leaders and lifelong learners. The MM, AI&A program will contribute to this priority with its curricular emphasis on the critical, informed application of applied AI and analytics skills and technologies to business and managerial problems drawn from a variety of industries and contexts. An emphasis on the cultural and social dimensions of analytics will empower graduates to apply their skills in ways that promote inclusivity, equity, and

¹³ Please see: <https://strategy.degroote.mcmaster.ca/>

sustainability in business. Graduates will also have the capacity for discerning and assessing new developments in the evolving field of analytics and applied AI, thereby enabling a passion for lifelong learning.

2. **Engaging Communities.** It is DSB's mission to continually expand community engagement to deliver meaningful impacts to partners and stakeholders. The MM, AI&A program will further this goal by working closely with industry leaders to develop cutting-edge curriculum and experiential learning opportunities for students, and to cultivate reciprocal, productive relationships with community and business through such elements as the Industry Practicum (please see **Section 3.2.6**) and internship (Please see **Section 3.2.7**). The External Advisory Board (please see **Section 3.1**) will support this aim, as it will provide a venue for the PD and faculty to work closely with industry leaders in developing, maintaining, and promoting the program. Social events such as guest talks and the end of year Poster Fair showcasing students' achievements and insights will be a further opportunity for students, faculty, community partners, and alumni to meet and informally discuss the value and development of the program.
3. **Inclusive Excellence:** DSB is committed to promoting a culture of equity, inclusivity, and respect that meets the needs of diverse communities. Recognizing that many people face economic, political, and social barriers to education, the MM, AI&A program will acknowledge and affirm the experiences of students from diverse backgrounds and equity-deserving groups. A commitment to inclusivity is reflected in our application process (please see **Sections 2.3** and **2.4**), which includes a video questionnaire and personal essay component that will allow reviewers to consider an applicant's circumstances, such as biographical challenges and membership in equity-deserving groups. The program will also provide a yearly scholarship of full tuition and living expenses to an Indigenous applicant, with the award selection process overseen by McMaster's Indigenous Student Services team. In terms of curriculum, as noted above, case studies, data sets, and simulations will be designed to reflect a range of industries and local, national, and international contexts. Students from diverse backgrounds will benefit from DSB's inclusive recruitment practices which ensure that our highly skilled faculty are representative of a variety of cultures and backgrounds. The Industry Practicum and internship components will provide further opportunities for inclusive excellence by building reciprocal, productive relationships between McMaster and the communities we serve.

4.2 PROGRAM INNOVATION

The MM, AI&A program's focus on providing a deep grounding in analytics and applied

AI coupled with robust experiential elements and a flexible range of elective opportunities will ensure that graduates have the breadth and depth of knowledge, as well as the leadership and professional skills needed, to excel in their chosen fields. To achieve these aims, the program incorporates several innovative elements:

- **Case Studies:** These curricular components will be motivated by real problems in industry. Each course will have individual assignments and group projects that will make use of data (real and simulated) related to diverse types of managerial problems practitioners experience. Output from group engagements will be shared with industry partners for feedback and implementation viability discussions.
- **Industry Leaders:** Several courses will engage speakers from the industry, and a limited number of courses may be taught by industry professionals. Such engagement will ensure a bi-directional flow of information between the proposed program and industry. In addition to guest talks and co-teaching, the program's External Advisory Board will provide a venue for the Program Director and faculty to collaborate with industry practitioners in developing curriculum, cultivating professional relationships and opportunities, and promoting the program.
- **Industry Practicum:** This will be an excellent opportunity for students to work in groups on real-world problems where they will collectively go through the data collection, processing, and analyses stages related to an identified managerial problem in applied AI and analytics. The practicum's two-term structure will give students enough time to conduct an in-depth analysis of the managerial problem, and to receive constructive feedback from the instructor and the industry leaders.
- **Internship:** This will be a unique opportunity for every MM, AI&A student to be immersed in a four-month paid internship where they will apply their learning from the first two terms, including the Industry Practicum, to an individual work assignment. The internship will give each student the chance to work closely with industry professionals in a partner organization, thereby facilitating both personal and professional growth. In general, internships often convert into a full-time opportunity; they almost always add to the professional profile of the student.
- **Poster Fair:** In term IV, students will work individually to create poster presentations that will be showcased in a public venue at McMaster University. The posters will be launched at social events attended by colleagues, faculty, alumni, and industry/community partners. The events will be an opportunity to celebrate the students' learning experiences, achievements, and innovations and to engage in conversations about the program and the industry. The poster presentations will also help inform potential future students about the type of work, experiences, and learning the program fosters.

- **Accessibility:** The diverse, experiential components of the MM, AI&A program are designed to deliver and reinforce the curriculum in a manner that engages multiple learning styles. Program leadership will work closely with DSB's Teaching and Learning team, Equity, Inclusion, and Diversity specialist, and External Advisory Board members to ensure that curricular content, such as case-studies and practicum topics, reflect the global dimensions of the analytics field. This will help ensure that program content reflects, and speaks to, the diverse range of backgrounds that compose McMaster's student population. Working closely with McMaster's Student Accessibility Services office, program leaders and faculty will adapt course materials to meet the individual needs of students. Likewise, industry leaders who provide guest lectures, mentorship, and co-teaching will undergo the proper accessibility training. (Please see **Section 4.4** for more details about accessibility.)

4.3 MODE(S) OF DELIVERY

The MM, AI&A program's curriculum will combine a variety of teaching and experiential strategies to ensure that graduates of the program have a deep knowledge of analytics and applied AI tools and methodologies coupled with a broad, critical, and contextual knowledge of how analytics is applied in different functional fields. The combination of skilled instruction (through lectures, guest talks, and industry co-teaching), team learning (in presentations, case studies, industry practicum, etc.), hands-on technological practice (through the Learning Hubs and digital platforms), and experiential learning (through the Industry Practicum, internship, and in-class components such as case studies) will ensure that PLOs are met in a manner that accommodates the diverse learning styles of different students. These modes of delivery are detailed below:

Lectures: Lectures by skilled faculty and industry leaders will be part of the core courses and electives for the MM, AI&A program. Both the foundational and advanced materials delivered to students through in-person sessions will be reinforced through different analytics exercises both inside and outside the classroom.

Presentations: Students will work individually and/or in teams to produce verbal presentations and accompanying presentation materials (power point, charts, graphs, reports, etc.) on the application of applied AI and analytics concepts/tools to managerial problems drawn from different functional areas and sectors.

Case studies: Students will work in groups on case studies developed using a combination of real and/or simulated data. Each group will be expected to apply their learnings in the course/program to analyze the case study and develop recommendations. The PD and Curriculum Committee will work closely with External Advisory Board members and other industry partners to ensure that case

studies reflect a diverse range of functional areas drawn from various parts of the world.

Guest Lectures: Several courses will include guest lectures from industry leaders who will talk about the applications of analytics tools in industry, developments in the discipline, and engage in related discussions.

Learning Hubs: Most courses will make use of the Data and Analytics Learnings Hubs in the MCCD building scheduled to open in early 2026. The infrastructure of these hubs (data, equipment, and software packages) will enable students to participate in hands-on applications of their learnings on very large-scale datasets using cutting-edge applications and hardware.

Avenue to Learn: All course materials (lecture notes, readings, software package access details) will be available on Avenue to Learn, providing students with an online, centralized delivery hub that facilitates easy engagement with course materials, and provides diverse accessibility options.

Industry Practicum: For the Industry Practicum, students will work in small teams using their analytics skills to address a problem in a particular industry application. This experiential component will follow the inquiry method of learning developed at McMaster whereby students identify a real-world problem, assemble the tools and knowledge needed to address the problem, identify one or more possible solutions, and then share their findings with stakeholders. For the Practicum, the real-world problem will be determined by the students with guidance from the instructor and industry leaders. Students will then utilize the analytics skills they have developed to collect, process, and analyze the basic data pertinent to their project. In the next stage, they will deploy analytics and applied AI to organize, process, analyze data and then generate outputs. Finally, they will translate these outputs into insights and recommendations that can be shared with managers and stakeholders. (Please see **Section 3.2.6** for a detailed description of the Industry Practicum.)

This key experiential component will occur in the first two terms of the program, while students are pursuing eight core courses related to analytic skills, tools, and technologies (Please see **Section 3.2.4** for an overview of the curriculum each term). Though they will not initially have the skills and knowledge needed to analytically address a given problem, the inquiry method will meaningfully ground the curricular content through simultaneous practical application. Identifying a particular industry-based problem early in term I will help students contextualize their learning about analytics and AI, providing a practical grounding for concepts, tools, and methodologies. As students' knowledge of analytics tools and methods deepens over the course of terms I and II, the opportunity for practical application

provided by the Practicum will help students cultivate confidence and experience, reinforcing the skills and knowledge they will be learning through other modes, such as lectures, presentations, and case studies. As with all other curricular components in the program, the outline and project requirement documents for the Practicum will be delivered through the Avenue to Learn online portal, and will contain an accessibility and accommodation statement detailing DSB's commitment to meeting the needs of diverse students and outlining the proper protocols and resources available to students through DSB working in collaboration with Student Accessibility Services (SAS).

Internship: A four-month paid internship will provide students with valuable work-integrated learning experience. DSB's Career and Professional Development team (CPD) will work with students, the PD, and industry partners to secure placements in relevant industries and businesses. This experiential component will occur in term III, once students have completed eight of their nine core courses as well as the Industry Practicum. Like the Practicum, the internship will provide opportunities for practical application of the skills and knowledges students have cultivated in the program. Through their internship, students will gain further skills, insights, experience, and connections that will help prepare them for careers in applied AI and analytics. If the student is unable to secure an internship, an equivalent experiential component will be offered in the form of either an industry-focused project facilitated through the data science and analytics Learning Hubs and Mitacs Accelerate Program, or an academic research-assistantship on an analytics project. This versatility will help ensure that this major, experiential component of the program is accessible to students with a variety of interests and circumstances. (Please see **Section 3.2.7** for a detailed description of the internship.)

4.4 EXPERIENTIAL LEARNING

The MM, AI&A program incorporates a variety of experiential learning components:

Industry practicum (detailed in **Sections 3.2.6**): this will occur in terms I and II and will be worth 6 credits, or the equivalent of two single-term courses. As detailed above, it will provide students with a real-world problem (determined by students with the support of the faculty facilitator and industry leaders), that will help to meaningfully ground the skills and knowledge they are learning in their core courses. This component will be organized by an instructor in collaboration with the PD, industry leaders, and the External Advisory Board. This collaboration will help cultivate a resource pool of potential real-world problems that students might address in their Practicum. The facilitator will organize students into small groups according, as much as possible, to students' interests in terms of an operational

field. The facilitator will then help match these groups with a suitable industry partner with whom the students will collaborate to identify a particular business or managerial problem to address.

Internship (detailed in **Sections 3.2.7**): in term III, students will complete a four-month internship where they will gain valuable industry experience that will contribute towards their professional development in analytics. The internship will be graded as complete or incomplete. Should a student receive an incomplete grade, they will be able to compensate for this by completing an equivalent experiential component, which in some situations may require an extra term to complete. Internships will be supported by DSB's Career and Professional Development team (CPD), who will provide input and guidance at every step of the process. This includes bringing employers to campus in order to streamline the hiring process for students, ensuring the quality and suitability of positions, supporting the students while they complete their internship, making site visits once per term to meet with students and employers together *in situ*, collecting feedback from employers at the end of the internship period, and meeting with students at the end of their internship to complete a Student Reflection & Evaluation form. The PD will work closely with CPD and the External Advisory Board to cultivate productive, reciprocal relationships with industry partners and ensure that there are ample opportunities for student internship placements across a variety of functional fields. If the student is unable to secure internship, an equivalent experiential component will be offered in the form of either an industry-focused project facilitated through the data science and analytics learning hubs and Mitacs Accelerate Program, or an academic research-assistantship on an analytics project.

Guest Lectures/Instruction by Industry Leaders: throughout the program, students will benefit from guest talks, in-course lectures, and teaching or co-teaching by industry leaders who will share their professional insights and experience. The PD, program faculty and staff will work closely with the Student Accessibility Services (SAS) office to ensure that all instructors, including guest lecturers and industry co-teachers, are provided with the information and training they need to support students with individualized learning needs. At the beginning of each term, the program office will advise instructors about the specific types of student accommodations needed and how to facilitate them. In some situations, DSB's inhouse Teaching & Learning Services (TLS) team will be able to assist with the development of requisite modules to accommodate learning of various types.

4.5 ACCESSIBILITY & INCLUSION

The MM, AI&A program will uphold McMaster's commitment to providing accessible education that meets the needs of a diverse student population. As is the norm at

McMaster, all DSB programs work closely with McMaster's Student Accessibilities Services office to prepare individualized plans for students requiring accommodations. The MM, AI&A program will also provide accessible educational opportunities through its intake practices, which include a video and written essay component that allows reviewers to take factors beyond academic achievements under consideration (Please see **Sections 2.3** and **2.4**). The innovative nature of the MM, AI&A curriculum, which grounds classroom instruction with experiential components, is designed to accommodate different learning styles by presenting and reinforcing content in diverse ways. Accessible learning will be further supported, as much as possible, by presenting course materials in multiple, accessible formats such as those facilitated by McMaster's Avenue to Learn portal. Program leaders and faculty will also ensure that industry leaders who are working with students as guest speakers, practicum partners, or co-teachers have completed the necessary accessibility training.

4.6 RESEARCH REQUIREMENTS (IF APPLICABLE)

MM, AI&A is a professional degree, and so research is not a major element of the curriculum. To complete some in-course assignments, and for the Industry Practicum, students individually and in teams may need to do some research into existing scholarship and industry practices, but engaging in primary or original research is not a requirement of the program. A module about basic research skills is part of Phase 1 of the Industry Practicum (please see **Section 3.2.6**). This will provide students with the skills they need to conduct any secondary research necessary in the Practicum.

5. ASSESSMENT OF LEARNING

5.1 OVERALL PROGRAM QUALITY

One of the PD's key responsibilities will be to collect data and feedback regarding the program's first years of operation, with the aim of ensuring that the PLOs, curriculum, and experiential components such as the Industry Practicum and internship are meeting the educational needs of students and society. This will require collecting feedback from students, faculty, industry partners, and (once it becomes available) alumni as detailed in **Sections 4.1** and **7.1**. Student evaluations will be solicited at the end of each course with the aim to improving the curriculum and its delivery and identifying strengths and/or areas for improvement. These surveys will be online and anonymous to ensure that students do not feel reluctant to share their experiences and observations. The PD will summarize program feedback data and share the summary with the Dean of the Faculty of Business via annual reports, and during informal meetings with the Dean and Associate Deans. The PD will also share this information with the Curriculum Committee at least once per year. The aim of this reporting is to shape and improve the program's curriculum, profile, and community partnerships in ways that further the PLOs and, when necessary, adjust

the PLOs and priorities of the program to respond to the changing needs of students, industry, and society.

5.2 METHODS FOR ASSESSING STUDENTS

The MM, AI&A curriculum is designed to provide students with a deep, working knowledge of analytics and applied AI tools, technologies, and methods coupled with the broad, contextual understanding and skills necessary to translate analytics outcomes into meaningful recommendations that can inform business and organizational decision-making. Modes of assessment for specific courses will vary according to individual instructors and are likely to include:

Assignments. Short assignments will be either completed in-class or as part of students' pre-class preparation. Assignments might involve answering questions regarding course readings and materials, solving specific problems related to data analysis, doing research into specific functional areas, and other tasks and topics related to course content. These may be completed individually or in teams and will vary according to instructor. Assignments will help in developing all seven PLOs, as they are widely adaptable to different contexts and materials. In the courses focused on hard skills, assignments will help students cultivate the necessary skills and understanding to succeed in the tests and simulated/real business settings. They will also help students incrementally develop the capacities needed to tackle the more global assessment pieces, such as the Industry Practicum.

Tests. In seven of the core courses focusing on developing students' hard skills in analytic tools, technologies, and methods for processing data, in-class tests will be periodically administered to ensure that students have a firm grasp of key concepts, processes, and procedures. Because the development of more advanced skillsets in these areas depends upon foundational skills students have already learnt, periodic testing will help ensure that PLOs such as numbers 1, 2, 6 and 7 are being realized.

Group Projects. Working in small groups, students will tackle specific problems related to data analytics, applied AI, and their application to various functional fields. These projects will help build core hard skills as well as help students cultivate communication, collaboration, and project management skills. These soft skills are important transferrable capacities that will aid graduates across a variety of professional contexts. Group projects will help to cultivate and assess all seven PLOs.

Presentations. Students will be required to make in-class presentations, sometimes working individually and sometimes in teams. These will help reinforce

key concepts, tools, and methods; provide a venue for students to share their specific interests and insights; and cultivate students' sense of agency and cohesion as a cohort. Presentations may be used in all the core MM, AI&A courses, but they will be especially important in the courses that focus on transferrable skills such as communication, leadership, ethics, and regulation. They will also be a key component of the Industry Practicum in terms I and II, providing a vehicle for the student teams to share their projects, insights, and questions with each other, and with industry partners. Presentations may be used to help reinforce all the PLOs but will be especially important for realizing PLOs number 3, 4, 5, and 6.

Reflection Report. These pertain to two core courses: *Communication, Leadership and Change Management*, and *Ethics and Regulatory Frameworks in AI and Analytics*. The reflection reports will ask students to consider a particular question, issue, or situation related to the field of analytics and AI and to write a short reflective report based on course materials, personal insights, and supplementary investigations. Because these two courses ask students to consider more global and social issues related to analytics and AI, this form of assessment is particularly well suited to these courses. The assessment will touch upon skills and knowledge already gained in PLOs number 1, 2, and 7, but will specifically assess PLOs related to communication, management, critical thinking, and assessment of developments in the field (PLOs number 3, 4, 5, and 6).

Case Studies. Case studies present students with a scenario that is either adapted from real-world events or historically reflective of them. They provide illustrative examples that will help students develop new knowledge and apply their existing skills and knowledge. After reviewing a case study, students may be asked to work individually or in groups to answer a set of questions and/or to come up with analytics insights and solutions to the situation presented. Case studies will be an important element of all the core courses save *Data Acquisition, Management and Visualization*. This is because the former introduces students to fundamental skills that are better reinforced and assessed through other methods (please see the **Curriculum Map** in **Appendix C** for details). Case studies will help to assess all seven PLOs, from the students' facility with analytics tools and methods to the contextual understandings and soft skills that will help them to apply analytics to specific contexts.

Simulations. *Simulation and Risk Analytics* offered in term II will cover simulations, and there will be elements of simulation in two other courses: *Communication, Leadership and Change Management*, and *Ethics and Regulatory Frameworks in AI and Analytics*. A simulation is similar to a case study, described above, with the difference that simulations add an element of change over time. Students are presented with a situation which they must use their

analytics skills to address, but the instructor then introduces new developments, creating an evolving situation to which students must react and adjust their responses. This activity draws upon students' acquired skills and knowledge by asking them to respond in real time to a changing situation. For this reason, simulations will be used in the courses mentioned above, which presuppose that students have already mastered a set of hard analytics skills; the exercise will allow them focus on the application and critical evaluation of these skills, and to gain a sense of confidence in their abilities. As a mode of assessment, it is most strongly related to PLOs 3, 4, 5, 6, 7 but presupposes that at least a portion of PLOs 1 and 2 have been achieved in previous courses.

Student Self-reflection. This is an important assessment component of the Industry Practicum and internship. For the Practicum, students will be periodically asked to reflect on the process in short written or video journals. This will be a means of capturing the questions, challenges, and insights that students have at various stages of the practicum and will allow the instructor to monitor and aid student progress. For the internship, upon completion students will work with someone from the DSB Career and Professional Development team to fill out a Student Reflection and Evaluation Form. This form will capture employer feedback and provide a space for the student to reflect upon and respond to this feedback. It also provides space for students to record their own reflections and feedback about the internship experience. These self-reflective components will help realize PLO number 3 as well as entailing the other six PLOs to varying degrees.

Industry Practicum. The Practicum is a major assessment piece for the first half (terms I & II) of the program. Successfully completing this component, which is worth six credits, will require students to draw from all the skills and knowledge they have developed in their core courses. As such, the Practicum is divided into two Phases corresponding to the two terms. By the end of Phase 1, students working in teams will have completed a Practicum Proposal that outlines the specific functional field they are focusing on, the specific problem they will be addressing, and an outline of the tools and methodologies they foresee deploying in solving the problem. To complete the proposal, students will need to meet and collaborate with an industry partner who will help inform students' understanding of the question and functional field they are addressing. At various points in both Phase 1 and 2 of the Practicum, students will complete team feedback forms, which will help the faculty instructor gauge their progress and ensure that all members of the team are contributing to the work. Students will also periodically complete student self-reflection (as described above), as a further means of articulating their progress, challenges, and insights. Phase 2 of the Practicum will involve the student teams collaborating with their industry partners to produce a

data-driven solution to the problem identified in Phase I. The outputs and recommendations of the student teams will be shared with instructors and industry partners as a Findings Presentation. This presentation, which will include a written report, will be a key tool by which the facilitator assesses student success in realizing the PLOs. The Industry Practicum will help ensure the realization of all seven PLOs in concert.

Internship: The four-month paid internship is a component worth zero credits that will be graded as either complete or incomplete. The DSB Career and Professional Development team (CPD) will work closely with program leadership and industry partners to support students at each stage of the internship (please see **Sections 3.2.7** and **4.4**, above). The CPD will also meet with students in term IV, after their internship is completed, to fill out a Student Reflection and Evaluation form. This form has several functions: it gathers feedback collected by the CPD team from the employer and asks students to reflect upon and respond to the employer's assessment and comments; it asks students to reflect and comment upon the skills, capacities, and professional attributes that the internship helped cultivate; and it asks specific, detailed questions about the student's experiences of the internship experience, which will help the CPD team work with the PD and External Advisory Board to continually refine and improve internship opportunities for students.

The internship is designed to help students practice key analytics skills and deepen their understanding of practical contexts in which these skills can be applied. It will also help students cultivate soft skills such as teamwork, communication, and professionalism. The Student Reflection and Evaluation Form asks students to assess the degree to which their internship helped them realize these skills and capacities while also providing a refereed forum for considering employer feedback. It is thus a highly useful tool for assessing the degree to which the internship fostered a student's professional development, indicating areas for improvement, and allowing students to share their experiences and concerns, thus encouraging them to be empowered collaborators in shaping their educational journey. The internship will provide a key experiential, component that will reinforce all the PLOs and DLEs outlined in **Sections 1.4** and **1.5**.

At the same time, the internship and Feedback Form are not meant to be an evaluative component designed to measure a student's mastery of program content. Rather, they contribute to a supportive, real-world environment in which students can cultivate experience and confidence while they practice skills and capacities that they have learned over the previous two terms of coursework and the Industry Practicum. For this reason, the internship is graded as either complete or incomplete rather than on a scale; this design gives students the freedom to

learn, make mistakes, and achieve excellence in a real-world setting, rather than striving to obtain the best possible grade for this curricular component. In keeping with this rationale, the evaluative tool focuses on constructive feedback and student reflection as a means of helping reinforce program content.

Poster Presentation. In term IV, students will create an individual poster presentation that will be displayed at a public forum at McMaster University. Social events attended by students, friends, colleagues, faculty, community partners and alumni will be associated with the Poster Fair. In the poster, students will reflect upon the knowledge, skills, insights, innovations, and relationships they have cultivated during the program, as well as the challenges they have overcome and questions they have answered. It will thus be an opportunity for students to reflect upon and communicate global experiences regarding the program and the role it has played in their personal and career development. Contributing to the poster fair will be the final requirement of students for completing the program, and posters will not be graded on a scale. The poster presentations will reflect all the PLOs, and will especially reinforce PLO number 3, which focuses on communication and evaluative/critical thinking skills.

For an overview of how these individual assessments are correlated to specific courses and curricular elements, please see **Section 5.3**, below, and the Curriculum Map in **Appendix C**.

5.3 CURRICULUM MAP

The assessments listed above have been correlated to the core courses and curricular elements in the map provided in **Appendix C**.

5.4 DEMONSTRATING STUDENT ACHIEVEMENT

In keeping with the DSB's values and strategic priorities (please see **Section 4.1**), the MM, AI&A program broadly defines success as the extent to which it can open minds, transform lives, help build sustainable communities, and contribute to positive change in business and society.¹⁴ The program will accomplish these aims by fostering knowledge, student-centred experiential learning, and community engagement. Graduates of the program will have a strong grasp of analytics tools and methodologies combined with knowledge of business practices and specific operational fields, enabling them to make informed contributions in their professional and civic life. They will be sensitive to the ways in which Analytics and Applied AI are influencing how businesses and organizations view themselves and the world, their interaction with clients and customers, and the creation of strategic visions of the present and the future. Students' education in the MM, AI&A program will allow them to contribute to these developments in innovative, inclusive, and

¹⁴ For DSB's strategic plan and values, please see: <https://strategy.degroote.mcmaster.ca/>

sustainable ways, allowing them to go beyond merely reacting to new developments in business and society by helping to shape them.

A key, innovative component related to this holistic definition of student success in the MM, AI&A program is the Industry Practicum, where students will be asked to work in small teams to apply their analytics skills and knowledge to solve a managerial/business problem in a specific industry/sector. The Practicum will draw upon a wide range of skills, knowledges, and practices described in the PLOs and DLEs: students will exercise their hard skills in analytics tools and methodologies (such as model development, identification of appropriate methods and algorithms, selecting of programming language and software), their interpretive skill and contextual understanding to translate processed data into informative outcomes, and their interpersonal, communicative skills to share these findings with their instructor, and industry partners. (please see **Section 3.2.6** for details about the Industry Practicum).

Another component that will contribute to student success is the four-month internship. DSB's Career and Professional Development team will work with program leaders to find industry placements that will provide students with valuable work-integrated learning opportunities. In these placements, students will be able to apply the skills and knowledge they have cultivated in the two preceding terms of coursework while learning from industry leaders and making professional connections in practical, real-world contexts. This component is assessed as either complete or incomplete in a report done at the end of the internship by members of DSB's Career and Professional Development team based on employer feedback and student input. For students who are unable to secure an internship, an equivalent experiential component will be offered either in the form of an industry-focused project facilitated through the data science and analytics Learning Hubs and Mitacs Accelerate Program, or as an academic research-assistantship on an analytics project. The internship component will help build students' professional experience and confidence, offering a practical context for gaining new perspectives on the skills and learning they have done in their coursework.

A term IV Poster Fair event will showcase poster presentations describing the skills, challenges, insights, and accomplishments of each student. This will give students an opportunity to reflect upon their educational journey and share their experiences and expertise with classmates, colleagues, and community members. Events associated with the Poster Fair will also offer informal settings for students and faculty to discuss the overall program. It will provide the Program Director and Curriculum Committee an opportunity to form a holistic sense of the level and diversity of student achievements for a given cohort. As detailed in **Section 4.1**, the Program Director will collect data and feedback on student achievement from the various components of the program at the end of each term and summarize these at the end of each year. The PD's summaries will be

shared with the Curriculum Committee, as well as the External Advisory Board, and be used to shape decisions about continuous program improvement.

6. RESOURCES

6.1 GRADUATE PROGRAMS

6.1.1 ADMINISTRATIVE, PHYSICAL AND FINANCIAL RESOURCES

Program Administration. The administrative resources for the MM, AI&A program will consist of the **Program Director** (1 full-time equivalent or FTE unit) supported by a Program Administrator (1 FTE unit), an **Administrative Assistant** (.5 FTE), and an **Admissions Officer** (.25 FTE). A **Career Manager** (1.0 FTE) will provide job sourcing and advice to students seeking new career opportunities, while a support staff will help with business development (0.5 FTE).

DSB Institutional Supports. The program will also be supported by DSB's in-house Information Technology team and the Teaching and Learning Team. The DSB's Career and Professional Development team will work with the Learning Manager to orchestrate all facets of the internship program.

Physical Resources. Courses and instruction will take place at DSB's Ron Joyce Centre in Burlington, Ontario. However, components of one or more courses might require accessing the Learning Hubs at the MCCD building on the main campus, and appropriate arrangements will be made to enable students to access these resources. MM, AI&A students will also have full access to resources, facilities, and student supports at McMaster's main campus. However, since the Ron Joyce Centre is some distance removed from the main campus, students in the MM, AI&A program will have access to an additional layer of wellness and mental health supports specific to the Ron Joyce Centre. They will also have access to the Paul and Sally Bates Interfaith Centre located at the RJC.

6.1.2 LIBRARY, TECHNOLOGY, AND LABORATORY RESOURCES

The program budget uses the budget template for graduate programs, which properly compensates the library and UTS (University Technology Services) for the use of their resources. We do not anticipate that the MM, AI&A program will require such resources beyond the normal usage.

With the opening of the new MCCD building in 2026, MM, AI&A students will have access to the data and analytics Learning Hubs. Comprised of computer labs providing access to data and software packages, the Learning Hubs will be used in many MM, AI&A core courses, and students may also choose to use these facilities for their Industry Practicum.

6.1.3 FACULTY

DSB has an extensive complement of faculty members from eight Area groups that range from full-time PhD research faculty to full-time teaching professors. Education programs in DSB draw from this pool of faculty members, and engage industry professionals based on the need for specific expertise. MM, AI&A program will engage full-time faculty members from the below list with research expertise and/or excellent teaching graduate portfolios in Applied AI and Analytics. In addition, the program has received commitments from industrial partners to contribute to the educational mission of the program by teaching or co-teaching courses.

Faculty Member	Credentials	Rank	Area	Available for Teaching?
B. Bakhtiari	PhD	Assistant	Operations	Yes
Y. Berson	PhD	Full	Human Resource & Management	Yes
M. Ghasemaghaei	PhD	Associate	Information Systems	Yes
B. Gorgulu	PhD	Assistant	Operations	Yes
C. Ekmekcioglu	PhD	Assistant	Information Systems	Yes
E. Hassini	PhD	Full	Operations	Yes
K. Huang	PhD	Full	Operations	Yes
Y. Jeon	PhD	Assistant	Finance	Yes
M. Kacker	PhD	Associate	Marketing	Yes
S. Kim	PhD	Assistant	Marketing	Yes
A. Mahmood	Masters	Assistant	Finance	Yes
K. Malinova	PhD	Associate	Finance	Yes
A. Mokhtar	PhD	Assistant	Accounting	Yes
M. Parlar	PhD	Full	Operations	Yes
E. Reid	PhD	Full	Human Resource & Management	Yes
N. Salari	PhD	Assistant	Operations	Yes
S. Saunderson	PhD	Assistant	Information Systems	Yes
L. Shi	PhD	Assistant	Operations	Yes
S. Vaid	PhD	Assistant	Marketing	Yes
M. Verma	PhD	Full	Operations	Yes
N. Wagner	PhD	Assistant	Information Systems	Yes
K. Wind	PhD	Assistant	Information Systems	Yes
M. Wu	PhD	Assistant	Marketing	Yes
R. Wu	PhD	Associate	Marketing	Yes
Y. Yuan	PhD	Full	Information Systems	Yes
M. Zargoush	PhD	Associate	Health Policy & Management	Yes
Y. Zhan	PhD	Assistant	Finance	Yes
Y. Zhou	PhD	Associate	Operations	Yes

B. Zoogah	PhD	Associate	Human Resources & Management	Yes
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6.1.4 STUDENT FINANCIAL SUPPORT

The program will offer one scholarship of full tuition and living expenses to an Indigenous applicant, with the award selection process overseen by McMaster's Indigenous Student Services team. In addition, several scholarships of varying amounts will be available in the program. It is anticipated that in steady state, the program will be able to institute additional scholarships that will be directly sponsored by industry partners. All entrance scholarships will be awarded by the Admissions Committee based on the student applications and interviews, while industry sponsored scholarship will be awarded based on the criteria agreed upon with the sponsors.

6.1.5 FACULTY RESEARCH FUNDING

DSB has faculty that support robust research projects. However, the MM, AI&A program does not focus on students producing primary research as a program requirement. Students will complete a module about secondary research as part of Phase 1 of the Industry Practicum, and may be asked to complete secondary research in the Practicum and their core courses. MM, AI&A students will be supported by faculty with diverse and ongoing research projects, thus ensuring that their instruction is informed by contemporary and comprehensive engagements with the field.

6.1.6 SUPERVISION

Though supervising primary student research is not a component of the program, MM, AI&A students will be supported and mentored by highly qualified DSB faculty who will teach core courses, electives, and serve as instructors for Phase 1 and 2 of the Industry Practicum. Pertinent details of the faculty members teaching in the program can be found in their CVs, which are provided on the accompanying USB stick.

7. QUALITY AND OTHER INDICATORS

7.1 ACADEMIC QUALITY OF THE PROGRAM

The MM, AI&A Program Director will collaborate with program faculty and the External Advisory Board to conduct and review ongoing evaluations of the program's curriculum, PLOs, and experiential components, such as the internship and Industry Practicum. These evaluations will include feedback and data gathered from students, graduates (once graduate data becomes available), industry partners, and program faculty and staff. It will be one of the PD's responsibilities to assemble and review this data, with the help of the program's administrative staff. The PD will share the summary with the Dean of the Faculty of Business via annual reports, and during informal meetings with the Dean and

Associate Deans. The PD will also share this information with the Curriculum Committee at least once per year. The aim of this reporting is to shape and improve the program's curriculum, profile, and community partnerships in ways that further the PLOs and, when necessary, adjust the PLOs and priorities of the program to respond to the changing needs of students, industry, and society.

Feedback that will inform the day-to-day operation of the program will include:

- Student feedback regarding courses and faculty
- Student feedback regarding the Industry Practicum and internship components
- Feedback from the External Advisory Board members and other industry leaders involved in the program (as instructors, co-instructors, guest speakers, etc.)
- Feedback from industry partners participating in the internships
- Feedback from faculty and administrative staff
- Surveys of graduates pursued six months, one year, and three years after graduating from the MM, AI&A program
- Annual application numbers, student performance data, and completion rates
- Rates of employment gathered from the graduate surveys detailed above
- External reviews

7.2 INTELLECTUAL QUALITY OF THE STUDENT EXPERIENCE

The MM, AI&A program responds to the need for analysts who can skillfully assemble, process, and interpret data in ways that provide meaningful insights for use in business and managerial decision-making across a variety of fields and industries. In service of this aim, the program is designed to help students develop the technical skills and knowledge they need while providing the crucial, contextual grounding in business culture and best practices that will allow them to make productive contributions to their professional fields. The experiential focus of the curriculum is designed to ensure that students gain the mentorship, practical experience, and interactions they need to succeed in professional and civic life. Students will benefit from DSB's skilled and diverse faculty and the mentorship of industry leaders who will share invaluable real-world experience in both classroom and work (internship) settings. Events such as DSB's Spring Social and the end of year Poster Fair will bring students, faculty, alumni, and community partners together, helping foster important professional and social connections. The DSB prioritizes an intersectional approach to mental wellness for both students and staff, as supported by the delivery of themed workshops and a speaker series. DSB's Ron Joyce Centre campus, where the majority of MM, AI&A courses will be hosted, has site-specific health and wellness resources, which are in addition to the resources available at McMaster's main campus. MM, AI&A students will also benefit from the new McLean Centre for Collaborative Discovery, scheduled to open at McMaster University early in

2026. The MCCD Learning Hubs will provide cutting-edge software labs in Data Analytics and AI, and Sales and Marketing Analytics that will be used in MM, AI&A courses and projects, such as the Practicum. The 16-month span of the program will ensure that students are able to complete the course components, Industry Practicum, and internship in a manner that allows them to fully engage with the curriculum and its experiential elements.

Appendix A: Course Calendar Descriptions

CORE COURSES

TERM 1

Data Acquisition, Management and Visualization

This course will focus on three main areas: First, students will learn the process of acquiring data (cleaned and raw) from different sources and in different formats (AWS; Google; Envision). Second, students will be trained in data management (i.e., organization, storage, manipulation and distribution of data) using structured query language (SQL) and business intelligence (BI) tools, MS analytics tools (Power BI and Excel). Third, students will be taught visualization techniques for effective communication and storytelling using packages such as Tableau and Mathematica.

Three hours; one term. Prerequisites: enrollment in the MM, AI&A Program.

Data Analytics using Python

This course will focus on applying analytics techniques to managerial problems in different industries to prepare data-driven predictions and forecasts. Students will learn how to identify important drivers for prediction, applicability, and limitations of different predictive analytics techniques, and evaluation of predicted data from various predictive models. Models based on real and simulated cases will be implemented in Python, and some data would come from platforms such as AWS, Google Cloud, Envision.

Three hours; one term. Prerequisites: enrollment in the MM, AI&A Program.

AI Fundamentals

This course will provide an overview of the artificial intelligence (AI) landscape, and then take an in-depth look at two types of machine learning (ML) concepts: supervised learning including classification and prediction models; and unsupervised learning including clustering and association rule analysis. Both real and simulated case studies will be studied using different ML models implemented in Python, R, and Mathematica, and the results will be analyzed to develop insights and provide recommendations.

Three hours; one term. Prerequisites: enrollment in the MM, AI&A Program.

Multivariate Statistics for Business Decision-Making

This course will introduce students to the fundamental concept of business statistics, and then cover the multivariate statistical techniques and their applications in real-world business problems. This course will cover descriptive and inferential statistics, probability distributions, hypotheses testing, regression analysis, and then focus on the processing,

analysis and treatment of multivariate data. Both real and simulated case studies will be analyzed using a combination of Python, R, and Excel to develop insights and provide recommendations.

Three hours; one term. Prerequisites: enrollment in the MM, AI&A Program.

TERM 2

Simulation and Risk Analytics

This course will introduce students to the basic concepts of modeling and computer simulation of complex systems, as well as addressing different aspects of analytics. It will cover modeling and risk analysis with a focus on continuous and discrete event simulation. Relevant concepts will be introduced through real and simulated case studies depicting managerial problems from different functional areas of business. A wide range of industries will be modeled and analyzed in MS Excel and Arena.

Three hours; one term. Prerequisites: enrollment in the MM, AI&A Program.

Prescriptive Analytics for Business

This course will train students to formulate managerial problems as mathematical models, to acquire data for these models, to implement and solve these models in a computer environment, and to interpret the resulting solutions to gain managerial insights. Model implementation based on real/simulated case studies and problem settings will take place in Python (a leading general-purpose programming languages), and in Analytic Solver, integrates seamlessly in MS Excel.

Three hours; one term. Prerequisites: enrollment in the MM, AI&A Program.

Leveraging AI and Deep Learning in Business

This course will focus on more sophisticated algorithms of AI. More specifically, it will discuss the basics of reinforcement learning, deep learning, and large language models and their applications to business problems. This course will make use of large datasets and case studies, which will be analyzed using the built-in libraries in Python and Mathematica, to demonstrate the workings of the above algorithms (techniques), and to explain how they facilitate efficient and effective decision making.

Three hours; one term. Prerequisites: enrollment in the MM, AI&A.

Communication, Leadership and Change Management

This course will focus on the role of AI and Analytics in driving organizational success by focusing on what to do, how to make it happen, and how to lead. Areas of focus will

include: the significance of data (AI and Analytics) in strategy development; defining and creating a culture of analytics; and leading and managing both organizational and individual change. The course will also highlight the importance of communication, teamwork and trust in both leading and implementing analytics projects.

Three hours; one term. Prerequisites: enrollment in the MM, AI&A Program.

TERMS 1 and 2

Career Course: Part A and Part B

This course is designed to equip students with the resources and personalized strategies necessary to successfully secure an internship and to achieve their long-term career goals. The course will focus on a continuous learning approach to career development, with specific emphasis on:

- Evaluating and planning for internship and new grad opportunities including career exploration and decision-making.
- Creating a personalized portfolio and developing strategies for professional development and skills acquisition.
- Maximizing success and learning during their internship through professional development.

Students will be exposed to ethical dilemmas and legal considerations related to job searches, as well as best practices for stress management during job searching. Students will gain clarity regarding the alignment between values, interests, and motivators in relation to their career, and be empowered to play an active role in shaping their career path. The overall goal of this course is to help students gain self-awareness, skills, knowledge, and confidence in relation to employment and their career goals.

Three hours; two terms. Prerequisites: enrollment in the MM, AI&A Program.

TERM 3

Internship Course

Full-time paid employment in an approved internship providing students with work experience related to their academic curriculum. After securing an internship position, students must successfully complete a minimum of 12-weeks of consecutive experience as per the details outlined within their letter of offer, obtain satisfactory employer evaluation(s) and receive a passing grade on the work term report and deliverables. All

internship students will be enrolled in the zero-unit Internship Course for the duration of their internship.

Prerequisites: Career Course Part A and Part B, and permission of the Manager of Student Experience – Career and Professional.

TERM 4

Ethics & Regulatory Frameworks in AI and Analytics

This course will explore the implications of AI on business and society. It will explore the set of guiding principles that stakeholders (academics, government, intergovernmental entities, non-profit organizations, and private companies) use to ensure AI technology is developed and used responsibly. The course will examine case studies and relevant developments of the role played by a strong code of ethics and government-led frameworks in helping regulate AI technology.

Three hours; one term. Prerequisites: enrollment in the MM, AI&A Program.

ELECTIVE COURSES (NEW)

Revenue and Pricing Analytics

In this course, students will learn about revenue management and pricing analytics, whereby managerial decisions aim to sell the right products to the right customers at the right price at the right time. Students will learn to build data-driven models to gauge customer preferences, plan capacity, and make pricing decisions. This course will rely on lectures, case studies and exercises to demonstrate the concepts; computer modeling of problems will be in MS Excel and Python.

Three hours; one term. Prerequisites: enrollment in the MM, AI&A Program or permission of the department.

Operations & Supply Chain Analytics

This course will cover the management of activities and processes used to produce goods and services for customers within an organization and across a network of entities forming a supply chain. The course will make use of lectures, interactive sessions, real and simulated case studies, data visualization and analyses, and group presentations to understand how massive amounts of data can be used to make evidence-based decisions within an organization and across supply chains. The course will use packages such as SAP Hana, Mathematica, and Tableau.

Three hours; one term. Prerequisites: enrollment in the MM, AI&A Program or permission of the department.

Procurement & Logistics Analytics

The first part of the course will introduce the concept of procurement and demonstrate how to use procurement data for effective decision making. The second part of the course will outline the field of logistics and then explore how to use data to prepare more efficient location, distribution, and transportation planning; optimize inventory at one or more locations; prepare better prediction of demand; gauge customer experience; and slot items on a shelf. This course will use software packages such as SAP Hana, Python, Mathematica, and Excel.

Three hours; one term. Prerequisites: enrollment in the MM, AI&A Program or permission of the department.

Synthetic Consumer Analytics

In this course, students will explore Synthetic Consumer Analytics (SCA), which uses synthetic data (e.g., numeric, text, image) to mimic real consumers. Once the synthetic consumers are generated, the course will also draw on causal inference applications to establish cause-effect mechanisms across marketing settings. This course will rely on lectures, case studies, problem sets, and exercises to demonstrate the concepts. Relevant modeling and analyses will be done in Python or R programming languages.

Three hours; one term. Prerequisites: enrollment in the MM, AI&A Program or permission of the department.

People Analytics/ Human Resources Analytics

In this course, students will learn the use of data, statistical analysis, and technology to gain insights that drive better decision-making in human resources management. This course will discuss how HR-related data should be collected, analyzed, interpreted to measure the impact of HR programs (talent acquisition, employee engagement and retention, performance management, workforce planning, compliance), and then related to policies and practices to improve overall business performance.

Three hours; one term. Prerequisites: enrollment in the MM, AI&A Program or permission of the department.

Appendix B: Full List of Elective Courses

MM, AI&A students will take 9 credits of electives from the following list of courses:

Course Name	Credits	Status
Big Data in Finance	3	Exists
Business Applications and Data Analytics/AI	3	Exists
Business and Economic Forecasting	3	Exists
Data Mining and Business Intelligence	3	Exists
Peoples/Human Resources Analytics	3	New
Introduction to FinTech	3	Exists
Marketing Analytics	3	Exists
Marketing Research	3	Exists
Operations & Supply Chain Analytics	3	New
Procurement and Logistics Analytics	3	New
Revenue and Pricing Analytics	3	New
Strategic Marketing Analysis	3	Exists
Synthetic Consumer Analytics	3	New

Appendix C: Curriculum Map

PLOs/DLEs		Program Requirements		
Program Learning Outcomes (PLOs)	Master's Degree Level Expectations (DLEs)	Teaching Activities and Learning Opportunities	Kind	Assessments and Evidence
1, 2, 4, 6	1, 2, 3, 4, 5, 6	Data Acquisition, Management and Visualization	Core course	Assignments; Tests; Group Projects
1, 2, 3, 6	1, 2, 3, 4, 5, 6	Data Analytics using Python	Core course	Assignments; Tests; Case Studies; Group Projects; Presentations.
1, 2, 6, 7	1, 2, 3, 4, 5, 6	AI Fundamentals	Core course	Assignments; Tests; Case Studies; Group Projects; Presentations.
2, 3, 4	1, 2, 3, 4, 5, 6	Multivariate Statistics for Business Decision-Making	Core course	Assignments; Tests; Case Studies; Group Projects; Presentations.
1, 2, 3, 6	1, 2, 3, 4, 5, 6	Simulation and Risk Analytics	Core course	Assignments; Tests; Case Studies; Group Projects; Presentations.
1, 2, 3, 6	1, 2, 3, 4, 5, 6	Prescriptive Analytics for Business	Core course	Assignments; Tests; Case Studies; Group Projects; Presentations.
2, 3, 6, 7	1 2, 3, 4, 5, 6	Leveraging AI and Deep Learning in Business	Core course	Assignments; Tests; Case Studies; Group Projects;

				Presentations.
3, 5, 7	1, 3, 4, 5, 6	Communication , Leadership and Change Management	Core course	Case Studies; Group Projects; Presentations; Simulation; Reflection Report.
3, 5, 7	1, 3, 4, 5, 6	Ethics and Regulatory Frameworks in AI and Analytics	Core course	Case Studies; Group Projects; Presentations; Simulation; Reflection Report.
1, 2, 3, 4, 5, 6, 7	1, 2, 3, 4, 5, 6	Industry Practicum	Experiential Component	Practicum proposal; Working Group/team feedback; Student self-reflection; Findings presentation & report
1, 2, 3, 4, 5, 6, 7	1, 2, 3, 4, 5, 6	Internship	Experiential Component	Student Reflection & Evaluation form
3, 5, 6	1, 2, 3, 4, 5, 6	Poster Presentation	Experiential Component	Individual poster project

DLEs (for reference only, please see **Section 1.5**)

1. Depth and Breadth of Knowledge
2. Research and Scholarship
3. Application of Knowledge
4. Communication Skills
5. Awareness of Limits of Knowledge
6. Autonomy and Professional Capacity

PLOs (for reference only, please see **Section 1.4**):

1. Undertake logical approaches for building conceptual models of managerial problems.
2. Design analytics models for organizational, customer, and business decision-making.
3. Demonstrate communication, critical thinking, and presentation skills.
4. Employ applied AI and analytics tools to projects across different functional areas and industries.
5. Evaluate ethical, social, and cultural dimensions of applied AI and analytics in business decision-making.
6. Exhibit understanding of applied AI an analytics tools and programming languages and be able to assess new developments in the field of analytics.
7. Display knowledge of applied AI in business settings.

Appendix D: Support for Program

Letter of Support

Chai Bhatt
Director of Data and AI
Purolator Inc.
Milton, ON
Chaitanya.bhatt@gmail.com
416-409-2716

Admissions Office
DeGroote School of Business
McMaster University

Dear Admissions Office,

I am writing to express my enthusiastic support for the proposed Master's program in Business Analytics at the DeGroote School of Business, McMaster University. As the Director of Data and AI at Purolator Inc., I understand firsthand the critical importance of applied artificial intelligence (AI) and business analytics in today's rapidly evolving business landscape.

The planned curriculum for this program demonstrates a comprehensive and forward-thinking approach to equipping students with essential skills that are increasingly in demand across various industries. The focus on experiential training, state-of-the-art quantitative models, and cutting-edge analytics methods will provide participants with the tools needed to excel in data-driven decision-making roles. The inclusion of leading software packages and programming languages such as Python, R, SAS, and cloud platforms like AWS and Google Cloud is particularly commendable, as these are the technologies driving innovation and efficiency in modern businesses.

One of the standout features of this program is the two-term industry practicum, which offers students the opportunity to apply their learning to real-world business problems. This hands-on experience is invaluable, fostering the ability to not only analyze and interpret big data but also to recommend and implement actionable business solutions. This practical aspect will undoubtedly produce graduates who are not only knowledgeable but also capable of making an immediate impact in their respective fields.

The program's emphasis on ethical, social, and cultural dimensions of analytics in business decision-making aligns well with the values we uphold at Purolator Inc. Understanding these aspects is crucial for responsible AI deployment and ensuring that technological advancements benefit society as a whole.

Given the strategic importance of data and AI, I am confident that graduates of this program will be highly

sought after by employers. The combination of technical proficiency, analytical acumen, and practical experience provided by this program will produce leaders who can drive innovation and strategic growth in their organizations.

I am pleased to offer any assistance required from my position as an industry leader. This could include guest lectures, participation in advisory panels, industry instructor, mentorship opportunities, and potential collaboration on industry practicums.

In conclusion, I strongly endorse the establishment of the Master's program in Business Analytics at the DeGroote School of Business. It is a timely and necessary addition to the academic offerings, one that will undoubtedly contribute to the advancement of applied AI and business analytics skills in Canada and beyond.

Sincerely,

Chai Bhatt
Director of Data and AI
Purolator Inc.

Master of Applied AI and Data- Driven Decision-Making

October 10, 2024

(Updated: February-March 2025)

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COMPLETING THE NEW PROGRAM PROPOSAL DOCUMENT

This New Program Proposal template is structured to correspond with the evaluation criteria outlined in McMaster's Policies, Procedures and Guidelines:

<https://www.mcmaster.ca/policy/AdminAcad/AcadAdmin/AcademicProgramReview.pdf>.

For additional information, contacts or guidebooks, departments can visit the IQAP website <https://mi.mcmaster.ca/iqap/> or email iqap@mcmaster.ca.

Please ensure that your department refers to the New Program Proposal Guidebook for clarification and further information on the types of evidence required and, where applicable, what resources are available to assist in retrieval or interpretation of the information required for this proposal.

CHECKLIST FOR NEW PROGRAM PROPOSALS

The following section indicates all the items that are required as part of a **complete** new program proposal package which includes all the necessary documents. Part I, II and III should be submitted as separate files to iqap@mcmaster.ca.

PART I: COMPLETE NEW PROGRAM PROPOSAL DOCUMENT

- ☐ Complete New Program Proposal Template
- ☐ Faculty CVs (can be submitted on CD or USB)
- ☐ Memorandum(s) of Understanding (Letters of Support) (if applicable)

PART II: RESOURCE IMPLICATIONS AND FINANCIAL VIABILITY

- ☐ Completed
- ☐ Approved

PART III: FEES MEMO

- ☐ Completed
- ☐ Approved

Chair's Declaration of New Program Proposal Completeness:

I, MANISH VERMA, have reviewed the New Program Proposal for *Master of Applied AI and Data-Driven Decision-Making (MAIDM)* and agree that it is complete and satisfies all of the requirements McMaster University's Policy on Academic Program Development and Review.

Signature: 

Dean's Declaration of New Program Proposal Completeness:

I, KHALED HASSANEIN, have reviewed the New Program Proposal for *Master of Applied AI and Data-Driven Decision-Making (MAIDM)* and agree that it is complete and satisfies all of the requirements McMaster University's Policy on Academic Program Development and Review.

Signature:



1 PROGRAM

1.1 PROGRAM DESCRIPTION

The prevalence of digital communication, platforms, services, smart technologies, sensors, and the Internet of Things is creating an abundance of data, the amount of which is rapidly growing. In 2020, humans produced, copied, and consumed 64.2 zettabytes (ZB) of data, and by 2025 global data creation is expected to exceed 180 ZB.¹ Big Data, Data Science, Artificial Intelligence, and machine learning are rapidly transforming how businesses, organizations, and governments operate, giving rise to new opportunities and challenges. Making productive use of the mounting quantities of data requires the skills of analytics specialists across a wide range of domains, but many managers and business leaders are unfamiliar with analytics tools and methodologies, creating a gap in their professional skills and knowledge. To address this, DeGroote School of Business is developing two graduate programs in AI and Analytics, i.e., a blended-learning part-time version that is being discussed in this proposal, and a full-time version being proposed concurrently. These programs are targeted at different audiences, and the differentiating details and specifics are provided on Page 21 of this document.

The proposed **Master of Applied AI and Data-Driven Decision-Making (MAIDM)** program is a professional degree aimed at early-to-mid-career professionals with at least four years work experience who desire to effectively incorporate applied AI and analytics in business and managerial decision-making processes. To accommodate working professionals, the program's blended delivery approach will consist of ten courses, each delivered over three intensive face-to-face weekend residencies combined with weekly technology-enabled learning requirements during the off-campus periods. Approximately 70% of the instructional hours will take place during the three residencies and the synchronous webinars spread over each semester. The curriculum will focus on applications of AI and analytics techniques, leadership and communication skills for real-world problems. Delivered in the DeGroote School of Business' Jon Royce Centre in Burlington, Ontario, the 20-month curriculum will provide an accessible, innovative, and practical program that meets the needs of working professionals from a wide range of fields.

1.2 PROPOSAL PREPARATION AND CONSULTATION PROCESS

In December 2023, The DeGroote School of Business' Associate Dean of Graduate Studies, Dr. Manish Verma, initiated discussions with DSB leadership and with Khaled Hassanein, Dean of the Faculty of Business at McMaster regarding the proposed new

¹ "Volume of data/information created, captured, copied, and consumed worldwide from 2010 to 2020, with forecasts from 2021 to 2025." N.D. *statista.com* <https://www.statista.com/statistics/871513/worldwide-data-created/>

program. Consultations were then held with Dr. Steve Hranilovic, Vice-Provost and Dean of Graduate Studies.

In February 2024, DSB's Marketing and Communications Engagement team conducted an initial market scan for the new program that produced positive results. That same month, Dr. Verma and Mr. Gregory Rombough (Manager, Specialized Graduate Programs) met with the School of Graduate Studies to discuss the new program. In May 2024, Dr. Verma consulted with Stephanie Baschiera, Senior Associate Registrar and Graduate Secretary, and Christina Bryce, Assistant Graduate Secretary, as well as with Educational Developer Amy Gullage of the MacPherson Institute for Leadership, Innovation and Excellence in Teaching. In April of 2024's Dean's Advisory Council meeting, Dr. Verma shared the idea about the new program, which was received favorably by the membership comprised of Area chairs and Program Directors. Subsequently, he shared the new program idea at the May 2024 meeting of Faculty of Business. At the DSB's Spring Reception held in late May 2024, Dr. Verma shared news of the new program to a large group that included faculty, students, and staff.

In June of 2024, an Analytics Program Development Committee (APDC) was formed to spearhead the development of the new program. The APDC was composed of:

Behrouz Bakhtiari, Director, Blended Learning Part-Time MBA Program, DeGroote School of Business

Yoontae Jeon, Assistant Professor, Finance & Business Economics, DeGroote School of Business

Christopher Longtin, Manager, Strategic Initiatives, DeGroote School of Business

Ala Mokhtar, Assistant Professor, Accounting & Financial Management Services, DeGroote School of Business

Gregory Rombough, Manager, Undergraduate and Specialized Graduate Programs (Academic), DeGroote School of Business

Sash Vaid, Assistant Professor, Marketing, DeGroote School of Business

Manish Verma, Associate Dean (Graduate Studies), DeGroote School of Business

Kiewan Wind, Assistant Professor, Information Systems, DeGroote School of Business

Yun Zhou, Associate Professor, Operations Management, DeGroote School of Business

In July 2024, the APDC began collaborations with educational developers Greg Van Gastel, Aasiya Satia, and Amy Gullage from the MacPherson Institute to develop the PLOs for the proposed new program. On July 9th, the MacPherson educational

developers listed above facilitated a retreat with program leaders and the APDC to generate PLOs, program objectives, and curricular strategies.

In July of 2024, Dr. Verma approached industry leaders to seek constructive feedback regarding the proposed program and to begin the process of assembling an External Advisory Board (EAB). Consultations were held with several teams within DeGroote and the larger university: DeGroote's Marketing and Communications team (M&C) conducted an extensive scan of the market and competitors to identify the new program's positioning; DeGroote's MBA Recruitment Team was invited to provide feedback given their engagement with student participants at events related to the BLPT MBA Program; DeGroote's Advancement and Alumni Office facilitated feedback about the proposed program from alumni, and solicited industry engagement including securing letters of support from employers in fields related to analytics; McMaster's Advancement Team was mobilized to gauge the willingness of industry professionals to participate in programming as potential instructors, co-instructors, and/or curricular collaborators; and finally, Associate Deans of Graduate Studies of the six faculties were consulted and invited to provide input.

Throughout August 2024, Dr. Verma was in discussion with Dean Hassanein, the School of Graduate Studies, the APDC, and support units within the DSB to fine-tune curricular and budgetary aspects of the program.

1.3 CONSISTENCY WITH MCMASTER'S MISSION AND ACADEMIC PLAN

McMaster University's Mission Statement:

At McMaster, our purpose is the discovery, communication and preservation of knowledge. In our teaching, research, and scholarship, we are committed to creativity, innovation, and excellence. We value integrity, quality, inclusiveness and teamwork in everything we do. We inspire critical thinking, personal growth, and a passion for lifelong learning. We serve the social, cultural, and economic needs of our community and our society.²

The **MAIDM** program will further McMaster's core mission by providing an innovative, experientially focused curriculum that enables professionals to gain the skills, knowledge, and experience they need to provide informed contributions to projects and organizational decision-making incorporating applied AI and analytics. The flexibility and accessibility of the **MAIDM** program will foster professional skills in applied AI and analytics, including critical thinking, project management, communication, leadership, and lifelong learning

²"Office of the President." N.D. *mcmaster.ca* <https://president.mcmaster.ca/mission-vision/#:~:text=Our%20Mission,teamwork%20in%20everything%20we%20do>.

for diverse individuals who wish to passionately address the opportunities and challenges posed by our increasingly data-driven societies. The **MAIDM** program is anchored in the DSB's business and economics capabilities, which will ensure a broad and deep engagement with the applications of AI and analytics across a diverse range of functional fields. The **MAIDM** program will also leverage pedagogies related to problem-based learning, collaborative culture, and community and industry partnerships, as well as the university's growing expertise in blended learning supported by the MacPherson Institute for Leadership, Innovation and Excellence in Teaching and DSB's in-house Teaching and Learning Services team.

1.3.1 McMaster's Strategic Mandate Agreement

McMaster's Strategic Mandate Agreement (2020-2025) ³ identified "Business, management, marketing and related support services" as a key area of institutional strength and focus. The **MAIDM** program is anchored in DSB's business and economics capabilities, and learners will benefit from the mentorship of faculty with expertise in key functional areas such as finance, marketing, supply chain management, human resources, health policy and management, and information systems. The program will also leverage McMaster's signature pedagogies related to problem-based learning, collaborative culture, and community partnerships, along with the university's growing expertise in blended learning supported by the MacPherson Institute. The **MAIDM** program is in specific accord with McMaster's SMA in several key areas:

A. Graduate Employment: In September 2019, the QS World University Rankings: Graduate Employability Rankings placed McMaster 98th in the world and 4th in Canada. In November 2019, the Times Higher Education Global University Employability Ranking placed McMaster 78th in the world and 5th in Canada. In the 2018 Ontario University Survey of McMaster graduates, 90.93% of those in full-time employment indicated that they were in employment that was closely related or somewhat related to the skills they learned at university. The Ontario average is 88%. Table 1 shows employment outcomes for DSB's MBA graduates from 2020 to 2023. The **MAIDM** program will contribute to this strong record on the part of DSB and McMaster by responding to the growing need for professionals with the ability to incorporate analytic insights into meaningful outcomes that can be used in organizational and business decision-making.

B. Experiential Learning: McMaster strives to provide experiential learning opportunities that teach knowledge and skills through practical application. The **MAIDM** program will integrate experiential learning in its curriculum through such practices as case-study exercises and simulations, which will be informed and

³ "2020-2025 Strategic Mandate Agreement." Aug. 2020. [mcmaster.ca](https://ira.mcmaster.ca/app/uploads/2020/11/McMaster-SMA3-Agreement-August-31-2020-SIGNED-FINAL.pdf)
<https://ira.mcmaster.ca/app/uploads/2020/11/McMaster-SMA3-Agreement-August-31-2020-SIGNED-FINAL.pdf>

developed by skilled faculty and industry specialists. The program will also hire industry leaders to teach or co-teach specific courses and sections of courses, allowing learners to benefit from the experience and insights of other practitioners in the field. The integration of diverse forms of experiential learning in the **MAIDM** program will reinforce McMaster's longstanding commitment to providing engaging and innovative pedagogy directed towards real-world needs and outcomes.

Table 1. DSB's MBA Employment Outcomes 2020-2023

Year	Average Salary	Salary Range	Employment rate
2023	81,929	44,500 – 128,800	94% secured within 10 months
2022	82,464	40,000 - 175,000	95% secured within 3 months
2021	77,080	50,000 – 130,000	94% secured within 3 months
2020	74,594	50,00 – 162,954	92% secured within 12 months

C. Skills and Competencies: It is McMaster's mission is to provide learners with the skills, experience, and confidence they require for success in their professional and civic life. This emphasis is reinforced by DSB's mission statement, which underscores a commitment to fostering transformative impacts in community, business, and the larger world.⁶ The **MAIDM** program will advance these institutional commitments by providing the training and experience needed for learners to achieve their professional, personal, and civic goals as business leaders, lifelong learners, and engaged global citizens. Graduates will possess the ability to navigate desktop packages such as Excel, Power BI and Tableau; a general understanding of analytics methods and tools; project-management skills to work with teams of data analysts to generate outputs; and business and communication skills to interpret and translate these outputs into actionable recommendations that can inform business and organizational decision-making. Graduates will also have the expertise needed to remain current with the ethical considerations and regulatory legislation associated with data security, analytics, and AI. This skillset entails highly sought-after transferrable skills such as agile communication, inquisitiveness, complex problem-solving, leadership, collaboration, critical thinking, attention to detail, and holistic thinking. This

combination of skills and knowledge will provide graduates with the functional knowledge of applied AI and analytics, the ability to interact with and understand technical specialists in dealing with large complex problems, and the expertise and confidence to communicate the results and business value of findings with middle and upper management.

The program's strong focus on experiential learning will highlight these skills' relevance to the contemporary business and managerial landscape, with learners benefitting from the expertise of industry leaders who will serve as advisors, mentors, and co-instructors for the program. An awareness of the cultural, ethical, and social dimensions of applied analytics will inform all aspects of the **MAIDM** program's curriculum, enabling graduates to contextualize and critically engage with analytics methodologies in ways that foster positive change in business and society. With this curricular emphasis, we believe that **MAIDM** graduates will be highly valued by employers who require project managers with both an understanding of the rapidly evolving fields of analytics and AI, and the ability to critically, effectively deploy these technologies towards productive, innovative, and sustainable ends. Perhaps most importantly in this regard, the **MAIDM** program will enable learners to cultivate the expertise they need to remain abreast of new developments in the rapidly changing landscape of business analytics and AI, and to both respond and contribute to these shifts in ways that further the DSB's core values of collaboration, community, inclusivity, innovation, and integrity.

1.3.2 The DeGroote School of Business' Vision, Mission, and Values

McMaster's vision statement, refreshed in 2021, calls for:

Impact, Ambition and Transformation through Excellence, Inclusion and Community: Advancing Human and Societal Health and Well-being⁴

DSB's orientation responds to and reinforces this:

Our vision is to open minds, transform lives, build sustainable communities, and contribute to positive change in business and society.⁵

The Proposed new program is in keeping with McMaster's and DSB's commitment to providing innovative, impactful, and accessible education that meets the changing needs of business and society.⁶ In 2022, DSB initiated a consultative strategic planning process to re-evaluate its programming in response to post-pandemic conditions and the

⁴ "Institutional Priorities and Strategic Framework 2021-2024." N.D. [mcmaster.ca https://president.mcmaster.ca/app/uploads/2022/02/Institutional-Priorities-and-Strategic-Framework_FINAL_5May21.pdf](https://president.mcmaster.ca/app/uploads/2022/02/Institutional-Priorities-and-Strategic-Framework_FINAL_5May21.pdf)

⁵ "DeGroote School of Business Strategic Plan." N.D. [mcmaster.ca https://strategy.degroote.mcmaster.ca/](https://strategy.degroote.mcmaster.ca/)

⁶ "DeGroote School of Business Strategic Plan." N.D. [mcmaster.ca https://strategy.degroote.mcmaster.ca/](https://strategy.degroote.mcmaster.ca/)

increasing role played by technology across a variety of fields. This self-study identified several areas for growth that are in alignment with McMaster's strategic mandate:

Teaching and Learning: the **MAIDM** program will provide an innovative curriculum that meets the needs of mid-career professionals who desire to upgrade their skills and knowledge of applied AI and analytics in business and organizational decision-making. The program's Academic Director, Curriculum Committee, and faculty will work closely with industry leaders to ensure that curricular elements such as simulations, case-studies, and group projects represent a diverse range of functional fields and global perspectives. These elements, delivered by DSB's diverse and skilled instructors, will ensure that learners' depth of knowledge regarding analytics methodologies and tools is grounded in a broad understanding of the wide range of business contexts in which analytics and AI are applied. The curriculum will also foster the critical capabilities needed to evaluate analytics tools and methods from an ethical and regulatory perspective, providing graduates with the leadership skills to make informed, positive impacts in their professions and larger society.

Engaging Communities: the **MAIDM** program will contribute to DSB's commitment to cultivating reciprocal, productive relationships with business and community partners. The **MAIDM** curriculum will be continuously informed by collaboration with the program's External Advisory Board, industry leaders, and DSB alumni to ensure that it is meeting the changing needs of business and society. As mentioned in the Teaching and Learning section, above, experiential elements such as case studies, simulations, and group projects will be based upon real-world situations and insights that faculty and program leaders develop in concert with business partners. Given that **MAIDM** is a program aimed at early to mid-career professionals, maintaining close relations with graduates will help deepen DSB's engagement with the larger business community, and alumni may be asked to serve as External Advisory Board members, guest lecturers, and possible co-teachers for portions of the curriculum. These engagements will provide learners with a wide range of informed perspectives and expertise in applied AI and analytics and organizational decision-making.

Inclusive Excellence: DSB and McMaster are committed to providing educational paths that meet the needs of a heterogenous student population while furthering equity, diversity, and inclusion in all aspects of university culture. The **MAIDM** program will contribute to these priorities by offering a flexible, blended learning curriculum that allows learners to meet their educational goals without taking extended leave from their careers. The combination, each term, of three intensive weekend residency sessions combined with online webinars (both synchronous

and asynchronous) will ensure that learners benefit from both an in-person cohort experience and accessible, individualized online learning.

In all its learning and community activities, DSB is committed to providing spaces where varied perspectives are welcome and respected. To this end, DSB has created an Equity, Diversity, and Inclusion Advisory Committee that includes faculty and student voices from diverse backgrounds to ensure that the DSB programs and culture reflect the needs of McMaster's diverse students and community partners. DSB is also creating an online space where students, staff, and faculty members will have access to resources, contacts, and support related to EDI. DSB recognizes the historical and differential barriers to education faced by many students and groups, and seeks to address these in its curriculum, culture, and programming. The **MAIDM** program will offer one scholarship of full tuition to an indigenous student, with the award selection process overseen by McMaster's Indigenous Student Services team. Several other awards will be available for incoming students and will be determined by the admissions committee.

Operational Excellence: DSB is committed to the effective use of resources and achieving long-term sustainability. The faculty supports and celebrates a culture of continuous improvement through collaboration and evidence-based decision-making. This will be implemented in the **MAIDM** program through the careful gathering and monitoring of feedback about the program from students, business partners, faculty, and alumni. As further detailed in **Sections 5.1** and **7.1**, the Program Director will oversee the gathering, summarizing, and sharing of this information with program leaders such as the Curriculum Committee and the External Advisory Board to ensure that the program continues to meet the changing needs of students and society.

The DeGroote School of Business is recognized as a leader in innovative approaches to teaching, learning, and service to the business community. Through its dedication to fostering knowledge and interdisciplinary thinking to transform business and society, it has achieved a considerable degree of international stature. DeGroote is accredited by the Association to Advance Collegiate Schools of Business (AACSB), a distinction that has been achieved by only six percent of business schools worldwide. The **MAIDM** program will adhere to AACSB's design and delivery guidelines for MBA programs.

1.4 PROGRAM LEARNING OUTCOMES

The learning outcomes for the **MAIDM** program have been developed based on extensive consultations with different stakeholders. The overall objective is for graduates to possess the knowledge, expertise, and skills to interact with and lead analytics professionals, to determine business value from outputs, and to effectively communicate with other stakeholders. Thus, the program learning outcomes (PLOs) are designed to support the overall objectives of the program and are aimed at working professionals who seek to advance their careers in an expeditious yet manageable timeframe, and within the context of the significant changes taking place in the broader economy due to rapid technological and demographic change. Upon successful completion of the program, graduates will be able to:

1. Develop a basic understanding of applied AI and **data-driven decision-making** techniques for business and organizational decision-making.
2. Exhibit the ability to interpret outputs/solutions resulting from AI and **data-driven** applications and identify business value.
3. Demonstrate **leadership**, communication, **and** critical thinking.
4. Develop leadership strategies for managing **data-driven** and applied AI projects, and teams.
5. Evaluate ethical, **legal and regulatory aspects of applied AI and data-driven decision making**.
6. Assess new developments in the application of applied AI and **data-driven decision-making**.

1.5 CONSISTENCY WITH DEGREE LEVEL EXPECTATIONS

PLO	DLE
1, 2, 3, 4, 5, 6	1. Depth and Breadth of Knowledge
5, 6	2. Research and Scholarship
2, 3, 4, 5, 6	3. Application of Knowledge
2, 3, 4, 5, 6	4. Communication Skills
2, 3, 4, 5, 6	5. Awareness of Limits of Knowledge
2, 3, 4, 5, 6	6. Autonomy and Professional Capacity

1.6 DEMAND FOR PROGRAM

I. Evidence of Societal/Labour Market Need

The **MAIDM** program responds to changing economic, technological, and labour market conditions as well as concomitant changes to learner preferences and career development requirements. At a macro-level, the convergence of previously separate technologies related to physical, logistical, and digital domains is causing radical shifts in how businesses and organizations operate. Massive amounts of data generated by online engagement and smart technologies are now available to decision-makers across a wide range of fields. However, translating this data into meaningful outcomes that can inform operational strategies requires the specialized skills of programmers and analysts, as well as informed project managers and business leaders who can work with and manage analytics teams. LinkedIn identified “Insights and Analytics” as number seven on the list of the ten most “jobs on the rise” between 2018 and 2022,⁷ a figure that corresponds with the growing incorporation of data analysts in a wide range of industries, businesses, and organizations. As business and organizations come to depend on analysts as a key component of their operational strategizing, however, managers and professionals must upgrade their skills to become conversant in analytics processes and capabilities. The **MAIDM** program will address this need by offering early-to-mid-career professionals the skills and knowledge they need to work with analysts and data teams as confident, informed leaders who can understand and incorporate analytics into data-driven management and decision-making processes. Graduates of the program will be able to lead analytic teams, communicate complex, analytics-informed ideas to senior leadership, and advise upon and tackle organizational problems such as data governance, regulation, and security. They will have a foundational knowledge of applied AI and analytics coupled with the business and management skills needed to translate analytic insights into communicable, actionable strategies.

The program’s flexible, blended delivery will appeal to professionals who seek to develop these capacities while still pursuing their careers. The World Economic Forum's Future of Jobs Report (2023) found that workers across age ranges were dissatisfied about workplace training opportunities. Manpower data showed that 57% of surveyed employees are pursuing training outside of work “because company training programmes do not teach them relevant skills, advance their career development or help them stay competitive in the labour market”.⁸ In face of the shift towards analytics precipitated by the rise of Big Data, the **MAIDM** program will provide professionals a flexible, accessible

⁷ World Economic Forum. “The Future of Jobs Report 2023” April 2023., Figure B1.1

<https://www.weforum.org/publications/the-future-of-jobs-report-2023/in-full/1-introduction-the-global-labour-market-landscape-in-2023/>

⁸ World Economic Forum. “The Future of Jobs Report 2023” 30 April 2023,

<https://www.weforum.org/publications/the-future-of-jobs-report-2023/in-full/1-introduction-the-global-labour-market-landscape-in-2023/>

program to apply analytics and AI in the context of business and organizational decision-making. The program will also foster critical and ethical reflection. An attention to the social, governmental, and regulatory contexts in which analytics and AI are applied will allow graduates to make informed responses to new developments in this rapidly changing field, positioning them as leaders and lifelong learners.

Table 2, below, provides a labour market scan of the wide range of fields to which the skills and knowledge fostered by the **MAIDM** program pertain.

Table 2. Growth rate and total openings in Ontario⁹

NOC	Title	Total Projected Openings, 2024-2028 (Ontario)	Outlook
00011	Senior government managers and officials	31,100	Very Good
00012	Senior managers – financial, communication and other business services	31,100	Very Good
00013	Senior managers – trade, broadcasting and other services	31,100	Very Good
10010	Financial managers	7,000	Very Good
10011	Human resource managers	5,500	Very Good
10012	Purchasing managers	3,000	Very Good
10019	Other administrative services managers	5,300	Very Good
10020	Insurance, real estate and financial brokerage managers	3,800	Very Good
10021	Banking, credit and other investment managers	10,200	Good
10029	Other business services managers	1,600	Good
11101	Financial and investment analysts	5,300	Good
11102	Financial advisors	8,900	Good
11109	Other financial officers	3,300	Good
11200	Human resource professionals	8,000	Very Good

⁹ This information is from the Ontario Ministry of Labour's analysis, available at:

<https://www.services.labour.gov.on.ca/labourmarket-ui/search?lang=en>

11201	Professional occupations in business management consulting	10,300	Very good
21211	Data scientists	1,100	Good
21221	Business systems specialists	16,500	Good
21222	Information systems specialists	16,500	Good
21223	Data analysts and data administrators	2,300	Very Good
40011	Government managers – economic analysis, policy development and program administration	1,200	Very Good
41401	Economists and economic policy researcher and analysts	2,100	Good
41402	Business development officers and market researchers and analysts	3,300	Moderate

The program will be appealing to professionals ranging in areas from financial officers to human resources to managers in finance, business, and government. Employment outlooks in all related fields are promising, with 54% of related professions having an outlook of “Very Good,” 40% having an outlook of “Good,” and only .04% (one profession) having an outlook of “Moderate” for the 2024-28 period. The fact that the professions to which the proposed new program pertain are in a projected growth position for the next four years is a strong indicator that the need for managerial expertise incorporating analytics and AI into business strategy and decision-making will likewise increase in the foreseeable future. At the same time, the **MAIDM** program seeks to attract learners who are already employed in the kinds of fields listed above. Graduates of the **MAIDM** program will have developed knowledge and skills about applied analytics and AI that will contribute to their career growth, and that will make them desirable to a wide range of employers; they will also have had opportunity to hone important leadership, communication, and project management abilities that will contribute to their career advancement and professional development.

II. Evidence of Student Demand

A 2024 report about business school application trends and motivations by Quacquarelli Symonds (QS) surveyed over 11,000 individuals interested in a general management education (GME).¹⁰ Respondents were from over 160 countries with a strong emphasis

¹⁰ “Business school applicant trends and motivations in 2024” 24 March, 2024. *qs.com*
<https://www.qs.com/reports-whitepapers/gme-applicant-report/>

on Africa, the Middle East, and Pacific Asia. In terms of prior work experience, only 23% of respondents were in the pre-experience category; 32% of respondents had acquired 1-3 years of work experience; 19% possessed 4-6 years of experience; and 26% have more than 6 years of work experience. Thus, in the international context of the QC survey, 77% of respondents interested in GME had at least some prior work experience. This indicates a strong demand for business-oriented programs designed to meet the needs of working professionals worldwide. The MAIDM program's orientation towards flexibility and lifelong learning is in keeping with the emphasis on early-to-mid-career professionals found by the QS report. The report also noted a "shift towards specialized master's programmes and away from traditional full-time MBA programmes" (14), a trend that supports the appeal of the specialized MAIDM program. Furthermore, amongst Generation Z (those born between 1997-2004), the study found an emphasis on work while studying, blended learning, and practical, career-oriented education in industries combining technology with socially progressive values and impacts. Importantly in the context of this study, the report also found that, within the same cohort of Generation Z individuals, there is an emphasis on AI and data analytics as key, desirable electives in any GME program. The authors of the QS study identify,

a growing interest in AI electives within GME programs, driven by AI's significant influence on business and society. Courses in AI are reshaping how future leaders approach their roles, emphasizing the need for agility, collaboration, and tech literacy. These AI-focused electives not only prepare students for AI-driven workplaces but also blend liberal arts and technical skills, positioning them effectively for an AI-augmented workplace. (76)

These findings provide a strong indication that the MAIDM program's focus on applied AI and analytics, its flexible and blended learning format, and its curricular thread focusing on the ethical and regulatory dimensions of AI and analytics will help meet the needs of a significant cohort of learners.

III. Justifiable Duplication

The MAIDM program aims to be the first of its kind in Ontario by providing a practical, critical grounding in applied AI and analytics in a blended format accessible to early-to-mid career professionals who wish to study while working. In preparing this report, we did a scan of universities within and beyond McMaster's immediate catchment area and found only three institutions with somewhat comparable programs.

Ivey School of Business at Western University has a twelve-month, while-you-work Master of Management in Analytics with blended delivery. However, this program, which requires at least two years related work experience, is aimed at professionals already in the field of analytics, whereas the proposed MAIDM program is aimed at diverse

professionals who want to learn how to incorporate analytics and AI into a wide range of business environments. In terms of curriculum, Ivey's program focuses primarily on hard programming and software skills in terms 1 and 2, and incorporates management, leadership, and soft skill elements in term 3. The **MAIDM** program, in contrast, places a sustained focus on applied AI and analytics in the context of business management and leadership across all five of its terms.

Ontario Tech university also has a Business Analytics and AI Master's program with a part-time option that can be completed in under two years of study. This program provides a general overview of analytics geared more towards those wishing to either become analysts or upgrade their analytic and programming skills. Ontario Tech's program is thus quite different from the proposed **MAIDM** program's focus on early-to-mid career professionals who want to learn how to apply analytics and AI within diverse business settings. Outside of McMaster's catchment area, Desautels Faculty of Management at McGill University in Quebec offers a part-time, online version of their Master of Management in Analytics Program that takes eighteen months to complete.

Although all three of these comparable programs offer blended and/or part-time delivery of content focusing on applied AI and analytics, the proposed **MAIDM** program is significantly different in that it is explicitly designed for early-to-mid career professionals who desire to learn how to apply analytics and AI within business and organizational contexts, acquire the knowledge and expertise to interact with technical analytics team, and effectively communicate with multiple stakeholders. Thus, the **MAIDM** program will not focus on developing hard analytic and programming skills, but rather on fostering a broad but nuanced understanding of the kinds of operations analytics and applied AI can perform in diverse business situations, and the leadership and management skills needed to incorporate the work of analysts into business and organizational decision-making. Graduates will have the understanding and skills to work with teams of analysts and programmers to incorporate their tools and methodologies into existing workflows, strategy, and decision-making hierarchies. They will also be able to understand and contribute to the cultural contexts and regulatory frameworks that shape applied analytics and AI, and to critically assess and creatively respond to new developments in the field.

DSB's **MAIDM** program expects to draw students who are early-to-mid career professionals in lower-to-middle management positions across a variety of fields (please see **Section 1.6 "I"**, above). In-person components of the program will be delivered at DSB's Ron Joyce Centre in Burlington, Ontario which is easily accessible from the QEW highway. While the immediate catchment area for this program is candidates living within a two-hour commuting radius of RJC, the fact that in-person components will be weekend residencies (three per term) means that candidates might conceivably live further than two hours away, since they will only need to come to campus for a total of fifteen weekends during the twenty-month program.

Table 3. Campus location, program title and timing of competitor programs

Institution	Campus Location	Program Title	Credential	Timing
Ivey Business School, Western University	London, Ontario	Master of Management in Analytics	MMA	12 months, blended delivery, 2 class-days per month, 2 4-day residencies, 1 virtual evening session per week. September start.
Ontario Tech University	Oshawa, Ontario	Master of Business Analytics and Artificial Intelligence	MBAI	Program is completed within twenty-four months of study. Blended delivery. 2 courses per semester; 6-10 hours of group/self-study per week, 2-month capstone and 4-month internship options. Fall start.
Desautels Faculty of Management, McGill University	Montreal, Quebec	Master of Management in Analytics	MMA	18 months, online delivery; weekends and evenings both synchronous and asynchronous, winter start term
DeGroote School of Business, McMaster University	Hamilton, Ontario (In-person components delivered at DSB's Ron Joyce Centre campus in Burlington, Ontario)	Master of Management in AI and Analytics	MM, BLPT	20-months, blended delivery; 5 terms; 3 two-day weekend residencies per term; 1 hour Wednesday night synchronous online classes; 8-12 hours per week asynchronous online work. January start time.

As the above table indicates, comparable programs range from twelve to twenty-four months. Two programs (Ivey and Ontario Tech) have blended programs that combine online and in-person components. Desautels' eighteen-month program is online only. The **MAIDM** program will be twenty months with blended delivery, which is in keeping with the timeframe of existing programs. The **MAIDM** program will have a January start time.

Existing and Proposed programs at McMaster University

There are two existing/proposed programs at McMaster University, which should be highlighted in this section.

Continuing Education: Though not directly comparable, McMaster Continuing Education offers two certificates: one in data analytics, and a second one in artificial intelligence. Certificate in Data Analytics can be received by completing any five of the nine available courses, while that in Artificial Intelligence can be received by completing any five of the seven available courses. All courses are virtual, and participants can learn at their own pace and individually.

DeGroote School of Business (DSB): has a successful slate of MBA programming options (MBA Co-op; MBA FT; BLPT MBA; and EMBA in Digital Transformation). DSB is currently proposing two-versions of the Master of Management in AI and Analytics program: a full-time version called MM, AI&A; and a part-time version called **MAIDM**. Proposal for both programs is being submitted concurrently.

It is important that the MM, AI&A version of the program is targeted at pre-experience students with less than 4 years of experience. This 16-month program will provide participants with experiential training on how state-of-the-art quantitative models and analytics methods together with software packages and programming languages can be used to organize, process, analyze, and interpret data to make informed business decisions. The overall objective is to produce graduates with the knowledge, skills, and experience to develop careers in a growing variety of fields that incorporate data management, analytics, and applied AI. Participants will take 12 courses in the program, go through an 8-month industry practicum, and a 4-month internship with an organization. This structure is suitable for pre-experience students who want to develop the hard skills together with soft skills within the applied AI and analytics domain in any industry.

Table 4. Admission Requirements of Competitor Programs

Institution	Requirements
Ivey Business School, Western University	<ul style="list-style-type: none"> -Completed undergrad. Degree with course work in the following areas: Calculus; Linear Algebra; Statistics or Probability -Knowledge of at least one programming language, demonstrated through university-level course work or experience -Two to ten years of full-time work experience -Demonstrated readiness and enthusiasm to translate theoretical concepts and quantitative analysis into meaningful insights as demonstrated through references, education and work experiences, and admissions interview -Candidates must be living and working in Canada at the time of application -Short essay and video essay components

	<p>-Two completed reference evaluation forms as supporting evidence of professional experience, abilities, and character</p> <p>-Proof of proficiency in English may be requested if first language is other than English</p>
Ontario Tech University	<p>-4yr. Honours degree or equivalent from a recognized institution in business, management, economics, informatics, or related fields</p> <p>-Overall academic standing of B average (GPA: 3.0 on a 4.3 scale or 73-76%), with a minimum B average in the last two full-time years of undergraduate work. (Work experience or a strong GMAT can be used in lieu of the GPA requirement.)</p> <p>-Successful completion of at least one course in information systems and one course in advanced mathematics (e.g. linear algebra, calculus, statistics)</p> <p>-For non-English degrees of study, the IELTS test of 7.0 or TOEFL of 100</p>
Desautels Faculty of Management, McGill University	<p>-A bachelor's degree in a subject closely related to Business Management and Analytics (min. 3.0 out of 4.0 Cumulative GPA or GPA of 3.2 out of 4 in the last two years of full-time study.</p> <p>-CV</p> <p>-Personal statement explaining: 1. why the candidate is interested in pursuing a Master's in Analytics (max 500 words); and 2. how Desautels' program will help achieve these goals (max 500 words).</p> <p>-Two letters of reference, at least one of which is from an academic</p> <p>-GMAT/GRE are optional</p> <p>-Proficiency in English (TOEFL or IELTS test results for candidates for whom English is a second language).</p>
DeGroote School of Business, McMaster University	<p>-A four-year bachelor's degree from any discipline with a recommended B average (73-76% or 3.0 on a 4-point scale) in the two most recent years of university study</p> <p>-CV detailing work experience with a minimum of 4 years expected</p> <p>-Two letters of recommendation, at least one of which should be from a non-academic referee (eg. past or present employer)</p> <p>-GMAT or other standardized test scores are encouraged but not mandatory</p> <p>-Personal essay (max 500 words) describing the candidate's motivation for pursuing the program, and any biographical information (such as inclusion in equity-deserving groups) that might help referees assess their application.</p>

	<ul style="list-style-type: none"> -Short video essay to better understand the candidate's capabilities, learning objectives, experience, and potential for success in the program -TOEFL, IELTS or PTE scores for those who have not resided in an English-speaking country for at least four years, or if English was not the primary language of instruction for at least three years of full-time post-secondary education, excluding ESL courses.
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As described in the comparison of admission requirements, above, the **MAIDM** program does not ask for a background or undergraduate training in a specific discipline. This is because the **MAIDM** program is aimed at professionals from a wide variety of fields and backgrounds who wish to learn how to incorporate analytics and AI into their project-management skillset. Pre-existing knowledge of coding or programming languages is also not necessary for the **MAIDM** program, which is focused on providing the skills to manage teams of analysts and to incorporate analytics and AI into business and decision-making processes, rather than the specific programming knowledge needed to perform analytics procedures. We expect that candidates will have varied educational backgrounds and professional experiences that have brought them to their current career positions. The **MAIDM** program will provide the skills and knowledge learners need to understand analytics and applied AI from practical, managerial, and regulatory perspectives, and to incorporate the skills of data analysts and programmers as part of their project management and leadership portfolios.

KEY FEATURES OF THE **MAIDM** PROGRAM

The program's flexible, blended delivery is aimed at professionals who want to develop the ability to incorporate analytics and AI into business and managerial decision-making. Its twenty-month completion time will allow candidates to pursue their degree while working, and its weekend residencies coupled with online components are designed to foster accessibility and flexibility while maintaining a cohesive cohort experience for learners. The program will be the first of its kind in Ontario to focus exclusively on the application of analytics and applied AI in managerial and business contexts; rather than focusing on hard analytic and programming skills, the **MAIDM** program will emphasize the knowledge and skills needed to lead and manage analysts in service of organizational and business decision-making. While graduates will be able to use a variety of software platforms, such as Excel, Power BI and Tableau, a reduced emphasis on technical components will allow a strong focus on the leadership and interpretive skills needed to deploy analytics and applied AI in sustainable ways that add value to business and management operations. Each of the ten core courses will be grounded in experiential components that stress the application of analytics and AI to real-world business and organizational problems.

1.7 DEGREE NOMENCLATURE

The degree earned through this program will be a *Master of Management*, and the stream will be –*Applied AI and Data-Driven Decision-Making*. The nomenclature is sensible based on the fact that the blended design and delivery, assignments, and workload are all specifically designed for the primary target audience of working professionals who can only study outside of normal working hours.

2 ADMISSION & ENROLMENT

2.1 ADMISSION REQUIREMENTS

The **MAIDM** program will require students to have a general management background with at least 4 years of relevant work experience.

The admissions process will also require the following components:

Transcripts: a four-year bachelor's degree in any discipline, with a recommended B average (73-76% or 3.0 on a 4-point scale) in the two most recent years of university study.

Two reference letters: at least one letter must be from a non-academic source (e.g., a current or former employer).

Recorded Video Interview: applicants will be required to complete an online interview consisting of pre-recorded questions that the applicant will answer and submit via the Kira software system.

Professional CV: with a minimum 4 years of work experience.

Essay: applicants will be required to write a 500-word essay outlining their reasons for wanting to pursue the **MAIDM** program and any personal, professional and/or background information that the wish to share that would help reviewers assess and situate their candidacy. It will also allow candidates to discuss factors such as ethnicity, gender alignment, and family background that will help reviewers identify applicants from equity-deserving groups, and to take these factors into consideration.

English Language Proficiency: Applicants must provide a valid TOEFL (minimum score of 92) or IELTS (minimum score of 6.5) test to prove proficiency in the English language. TOEFL and IELTS scores are valid for 2 years from the test date. Applicants are exempt from submitting an IELTS or TOEFL test if they have attended, in full-time academic studies (non-ESL), an accredited university for their entire undergraduate degree where English was the language of instruction. If the applicant's university is located outside of North America, a clear

statement on their transcript or a letter from the institution confirming the language of instruction was English must be included with the application. Applicants who attended a university in North America may be asked to provide proof of English Language Proficiency if reviewers are unable to confirm the university's language of instruction or if they find that the university has more than one language of instruction.

GMAT/GRE and other standardized test scores are not required if other entry components are strong.

These components are in keeping with McMaster's general admission requirements for part-time master's programs and the standards of the DeGroote School of Business.

2.2 ENROLMENT PLANNING AND ALLOCATIONS

Year	Cohort in terms 1-3	Cohort in terms 4-5	Total Enrolment	Maturity
2027	40		40	
2028	50	40	90	
2029	60	50	110	
2030	60	60	120	120

Though academic years starting in September typically span two calendar-years, the **MAIDM** program has a January start time and so for the purposes of enrollment planning it is easier to use discrete calendar years. On any given calendar year after year one of the program (2027), there will be an overlap of the previous years' cohort with the incoming cohort: the older cohort will be completing terms 4 and 5 while the newer cohort will be completing terms 1 and 2. In term 3 (September to December), the program will "shrink" to a single cohort and then expand again in January with the new incoming cohort. By January of 2029, the program aims to achieve a steady state of admitting 60 students into term 1 while upwards of 50 students from the previous cohort will be finishing term 4. This will create an aimed-for steady state of 120 students in the program in January of 2030.

2.3 ALTERNATIVE REQUIREMENTS

As mentioned above, applicants will be required to submit a 500-word essay detailing the value that the **MAIDM** program holds in relation to their professional and educational goals. This essay is not a timed exercise; applicants will compose this text independently and submit it through the online portal with their CV and other materials. The essay will allow students to detail their reasons for applying to the program, and their work, volunteer, and prior learning experiences that may pertain. The essay will also allow applicants, should they wish, an opportunity to disclose information about their

background and identity that can help reviewers discern their membership in equity-deserving groups.

2.4 ACCESSIBLE AND EQUITABLE ADMISSIONS PROCESSES AND PRACTICES

The personal essay, detailed in **Section 2.3** above, will help reviewers consider a wide range of factors in the application process to foster inclusivity and diversity. Applicants' volunteer and work experience, extra-curricular training, inclusion in equity-deserving groups, and other factors will help reviewers make informed and equitable decisions. The aim of this process is to ensure that the **MAIDM** program admits students with a wide range of backgrounds, interests, and orientations, and to help compensate for barriers to higher education experienced by many people and communities.

The **MAIDM** program will offer one scholarship of full tuition to an Indigenous applicant, with the award selection process overseen by McMaster's Indigenous Student Services team. Several scholarships of varying amounts will be available in the program. It is anticipated that in steady state, the program will be able to institute additional scholarships that will be directly sponsored by industry partners. All entrance scholarships will be awarded by the Admissions Committee based on the student applications and interviews, while industry sponsored scholarship will be awarded based the criteria agreed upon with the sponsors.

3 STRUCTURE

3.1 ADMINISTRATIVE, GOVERNANCE AND COMMUNICATION

Strategic Governance

The proposed new program will be administered by the DSB with overall responsibilities falling to the School's Associate Dean (Graduate Studies) for all academic and curricular matters and the Associate Dean (Faculty Affairs and Accreditation) for all program delivery and teaching-related matters.

Operational Daily Governance

An **MAIDM** Program Director (PD) will oversee the ongoing design and delivery of the program. This will include working with faculty and a **MAIDM** Curriculum Committee to ensure that all core courses and electives align with the program's PLOs and requirements. The PD will report to the Dean of DSB while working in collaboration with the above-noted Associate Deans, as well as the Curriculum Committee and External Advisory Board.

External Advisory Board

The PD will work with members of an External Advisory Board consisting of industry leaders who will provide valuable input that ensures the curriculum responds to ongoing

developments in the practical application of analytics and AI. The EAB will also help the PD cultivate productive, reciprocal relationships with industry partners for the development of course materials such as case studies and scenarios. The EAB will also help promote and champion the program through their professional relationships and contacts. The EAB will meet at least once a year, with more informal meetings and conversations as necessary. It will consist of:

The Program Director

2 DSB faculty members who teach in the **MAIDM** program

4-6 Business and industry leaders with extensive practical experience in the field of applied AI and analytics

Management Support

DSB will leverage its existing support staff and infrastructure, with anticipation of some incremental resource requirements. Several support staff will manage the quotidian operations of the new program, including:

Program Administrator: The Program Administrator is accountable for developing, implementing, and maintaining the efficient operation of the program. They will be responsible for providing overall administrative direction including coordinating all aspects of the program such as curriculum administration, implementation, promotion, recruitment, admissions, resource management, and financial management. (1 FTE)

Admissions Officer: The program will leverage existing Admissions staff and infrastructure for DSB Specialized Graduate Programs. The Admissions Officer is responsible for ensuring targets are met by facilitating and overseeing the admissions review process. The Admissions Officer will work with the Program Admissions Committee to set admissions criteria and review qualified applicants from a diverse pool of post-secondary students. They will also provide information and conduct recruitment and orientation sessions in various communities. (0.25 FTE)

Administrative Assistant: The Administrative Assistant will provide front-line support to students and faculty by assisting with day-to-day inquiries and resolving concerns. They will also support admissions processing and respond to applicant inquiries. They AA will plan and coordinate program events, including scheduling meetings and booking event spaces. (0.5 FTE)

DSB Centralized services

TLS and ITS Team:

The Teaching and Learning Services team supports DeGroote staff and faculty in areas of instructional design, educational development, learning experience design, and the use of media and teaching technologies that enhance student learning experience. Instructors can reach out to TLS to consult in course learning needs, student journey mapping, recommending enhancements using best practices in teaching, design and development of new courses and programs, consultation for course (re)design, and teaching technologies. TLS helps augment DSB's teaching and learning effectiveness in both traditional and non-traditional environments.

The DSB Information Technologies Services team (Operations and Support department) provides vital support to DSB staff and faculty including, server infrastructure, systems administration, information security, data backup and recovery, business continuity, AV systems (for DSB classrooms, labs, and conference rooms), and end user computing support. The ITS Software Applications department provides custom software and database development, central systems integration, software and research database licencing, and technical business needs analysis and project management. The DSB's ITS team will support existing learning infrastructure at the Ron Joyce Centre, and the new classroom and hub facilities in the new MCCD building.

3.2 STRUCTURE AND REGULATION

3.2.1 Structure and Program Learning Outcomes

The governance of the **MAIDM** program is structured to ensure that the Program Learning Outcomes are achieved and maintained in the ongoing administration of the program and its curriculum. A key responsibility of the Program Director will be to guarantee that the curriculum and any proposed changes will contribute to the Program Learning Outcomes and Degree Level Expectations outlined in **Sections 1.4** and **1.5**. The PD will work closely with faculty members and with members of the External Advisory Board to ensure that the curriculum and PLOs are informed by, and respond to, developments in analytics and its application to diverse functional fields. To this end, the PD will also be aided by DSB's Advancement and Alumni Office, who will maintain contact with graduates of the program to solicit feedback about the program and updates about career paths.

3.2.2 Breakdown of Curriculum

The **MAIDM** program is comprised of a total of 30 credits (with 3 credits being the equivalent to a one-semester course and 6 credits equalling a two-semester course). Learners will complete two courses per term, for a total of 10 one-semester core courses

(30 credits in total). These courses will be newly created for the **MAIDM** program. (Please see **Appendix B** for course descriptions).

Table 5. Curricular Components and Timing

Term	Timing	Number of Courses	Credits
I	Jan. - April	2 core courses	6
II	May - August	2 core courses	6
III	Sept. - Dec.	2 core courses	6
IV	Jan. - April	2 core courses	6
V	May - August	2 core courses	6
Totals		10 (one-term courses)	30

3.2.3 Overview of Learner Progression through Curriculum

The **MAIDM** degree is a twenty-month program divided into five terms of four months each. It has a January start time with a blended delivery that combines three weekend residencies with online weeknight classes. Residencies will occur on Saturday and Sunday during weeks one, five, and nine of each of the five terms. Three morning hours of each residency day (nine to noon) will be dedicated to one of the two courses for that term. Three afternoon hours (one to four) will be dedicated to the second course for that term. On Saturday evenings there will be social events. For non-residency weeks (weeks two, three, four, six, seven, and eight), there will be a one-hour synchronous online class for each of the two courses per term. Finally, there will be twelve hours per term of asynchronous, online learning modules and exercises per course. This will make a total of thirty-six contact/instruction hours per course.

The **MAIDM** program curriculum is designed to incrementally build familiarity with the principles and methodologies of applied analytics and AI while reinforcing the skills and knowledge required for business leadership through experientially oriented projects, scenarios, and case studies.

Table 6. Contact-hours Breakdown per Component Type

Type	Weeks												Total Hours
	1	2	3	4	5	6	7	8	9	10	11	12	
Residency (Sat-Sun)	6				6				6				18
Synchro-nous online class (Wed)		1	1	1		1	1	1					6
Asynchro-nous online	12 hours, flexible												12
Total:													36

In the term 1 course, *Exploratory Data Analysis and Visualization*, students will learn about how different kinds of data can be modeled and expressed. They will become familiar with the various tools and methodologies analysts use to gather, organize, and interpret data in service of producing actionable insights. In *Predictive Analytics for Managers*, students will become familiar with the sub-domain of analytics that focuses on predictions and forecasts in business and organizational applications.

The term 2 course, *Applied and Generative AI in Business Decision-Making*, will introduce students to the fundamentals of artificial intelligence as they pertain to data analysis and strategic business applications. *Managing AI and Analytics Projects will explore how projects can be managing by leveraging the power of artificial intelligence and data analytics.*

Term 3 focuses more deeply on management, leadership, and decision-making capacities in the context of applied analytics and AI. The course *Decision-making under Uncertainty* will focus on how analytics and AI can be used to aid in strategic planning that considers complex systems and unpredictable, emergent situations. The second term 3 course, *Strategic Leadership in AI and Analytics* will look at larger issues of organizational culture to explore questions about how analytics and AI leadership informs definitions of success, sustainability, strategy development, and responsive, responsible governance. This course will also highlight the importance of communication, teamwork, and trust in both leading and implementing analytics projects.

Table 7. MAIDM Program Core Curriculum

Course Name	Credits	Term
Exploratory Data Analysis and Visualization	3	1
Predictive Analytics for Managers	3	1
Applied and Generative AI in Business Decision-making	3	2
Managing AI and Analytics Projects	3	2
Decision-making under Uncertainty	3	3
Strategic Leadership in AI and Analytics	3	3
Prescriptive Analytics for Managers	3	4
Governance, Ethics and Compliance in AI and Analytics	3	4
Marketing Analytics	3	5
Value Creation through AI and Data-Analytics	3	5

(For calendar descriptions of core courses, please see **Appendix A**).

The term 4 course, *Prescriptive Analytics for Managers* will provide business leaders the skills and understanding they need to work with analytics teams to formulate business problems as mathematical models and process data via these models to gain managerial insights. The second term 4 course, *Governance, Ethics and Compliance in AI and Analytics* will explore ethical, governance and compliance issues associated with the development and deployment of AI and analytics solutions with a focus on the guiding principles that diverse stakeholders use to ensure that AI technology is developed and used responsibly.

The term 5 course, *Marketing Analytics*, will investigate how **data** analytics and AI can be used to gather and interpret in-depth consumer, competitor, and environmental information pertaining to the marketing of goods and services. *Value Creation through AI and Analytics* will focus on considerations of possible future directions for **data** analytics and AI across a diverse range of fields, in service of making business strategy and decision-making more efficient, accurate, productive, and sustainable.

3.3 PROGRAM LENGTH

The twenty-month length of the **MAIDM** program is designed to allow learners to pursue their degree without taking leave from their professional careers. Five terms of four months each, with learners taking two courses per term, will ensure that the workload is manageable due to it being spread out across the twenty-month program.

4 CURRICULUM AND TEACHING

4.1 PROGRAM CONTENT

Because applied AI and analytics are rapidly growing, evolving fields, it is important that learners in the **MAIDM** program develop the ability to remain current about best-practices, emerging trends, and evolving regulatory structures. This involves providing learners with the most current knowledge and skills regarding applied AI and analytics, but also enabling learners to independently identify and evaluate new trends, tools, and technologies (regarding the lifelong learning element of the curriculum, please see PLO #6 in **Section 1.4**). Graduates of the **MAIDM** program will have the leadership skills, knowledge, and experience to stay abreast of emergent trends in the fields of applied AI and analytics, and to contribute to crucial conversations about how business culture and larger society responds to these developments. This will be accomplished through skilled instruction, experiential learning, and a flexible, blended delivery structure that meets the needs of early-to-mid career professionals who seek to incorporate analytics and AI into their managerial and problem-solving portfolios.

The **MAIDM** program governance is designed to ensure that the curriculum remains sensitive to the changing needs of business and society, and to emerging developments in applied AI, analytics, and managerial culture. Advice regarding developments and trends across a variety of functional fields will be solicited from members of the External Advisory Board (Please see **Section 1.3**) at annual meetings and through informal meetings and conversations between board members, faculty, and the Program Director. Input from DSB faculty involved with the program will be gathered by the PD at the end of each term. By the end of the second year of the program, the PD will be able to follow up with alumni of the program's first cohort. After this, input from alumni regarding career paths and the ongoing valuation of the program will be solicited annually by the PD working in collaboration with DSB's Alumni and Advancement Office. It will be a key responsibility of the PD to assemble, review, and summarize this input from Advisory Board members, faculty, alumni, and students, and to make recommendations regarding the ongoing effectiveness and development of the **MAIDM** program's curriculum to the Curriculum Committee (CC), which will meet at least once per year. This process will ensure that the curriculum evolves in a way guided by the PLOs and informed by the changing needs of students, business, and society. It will also help shape the PLOs themselves, as the CC revisits and refines them over time in response to evolving needs, trends, and circumstances. The PD will also work closely with faculty, community leaders, students, and alumni to ensure that the **MAIDM** curriculum address McMaster's diverse student population by reflecting a wide range of local, national, and global perspectives. This diversity of viewpoints and concerns will, for instance, be reflected in the case studies, simulations, and data sets used in core courses. These materials will be

developed in collaboration between the PD, CC, faculty, and industry leaders, and will represent different industries and diverse parts of the world.

These measures to ensure that the **MAIDM** program's curriculum is responsive to the needs of a diverse student population and to industry developments are in keeping with the priorities outlined in McMaster's Strategic Mandate Agreement and the DeGroote School of Business' strategic priorities. Specifically, the program will contribute to McMaster's commitment to providing skills and job outcomes that will promote graduate employment in a related field; an institutional emphasis on experiential learning; and productive collaborations with community (For more details about how the program aligns with McMaster's SMA, please see **Section 1.3.1**). The program also strongly aligns with the DSB's strategic goals,¹¹ especially in three key areas:

1. Teaching and Learning. DSB is committed to a culture of excellence that motivates students to become mindful leaders and lifelong learners. The **MAIDM** program will contribute to this priority with its curricular emphasis on the critical, informed application of analytics skills and technologies to business and managerial problems drawn from a variety of industries and contexts. An emphasis on the cultural and social dimensions of applied AI and analytics will empower graduates to employ their skills in ways that promote inclusivity, equity, and sustainability in business. Graduates will also be to discern and assess new developments in this evolving field, thereby contributing to a passion for lifelong learning.

2. Engaging Communities: It is DSB's mission to continually expand community engagement in ways that deliver meaningful impacts to learners, partners, and stakeholders. The **MAIDM** program will further this goal by working closely with industry leaders to develop cutting-edge curriculum and experiential learning opportunities for students, and to cultivate reciprocal, productive relationships with community and business through such institutions as the External Advisory Board (please see **Section 3.1**) The EAB will provide a venue for the PD and faculty to work closely with industry leaders in developing, maintaining, and promoting the program. Business and industry leaders will contribute to the development of case studies, scenarios, and group projects, thus enriching the **MAIDM** curriculum with their real-world expertise. Practitioners may also be invited to teach or co-teach portions of the curriculum, providing valuable insights and opportunities for students. Events such as guest talks and social functions during the weekend residencies will be further opportunities for students, faculty, community partners,

¹¹ Please see: "DeGroote School of Business Strategic Plan." N.D. *mcmaster.ca*
<https://strategy.degroote.mcmaster.ca/>

and (by the program's second year) alumni to meet, cultivate professional relationships, and informally discuss the value, direction, and development of the program. The program curriculum also recognizes that learners themselves will possess significant expertise and experience from diverse professional fields, and each **MAIDM** course will validate and engage these resources to encourage a culture of experience-based, collaborative, continual learning.

3. Inclusive Excellence: DSB is committed to promoting a culture of equity, inclusivity, and respect that meets the needs of diverse communities. Recognizing that many people face economic, political, and social barriers to education, the **MAIDM** program will acknowledge and affirm the experiences of learners from diverse backgrounds and equity-deserving groups. A commitment to inclusivity is reflected in our application process (please see **Sections 2.3 and 2.4**), which includes a video questionnaire and personal essay component that will allow reviewers to consider an applicant's circumstances, such as biographical challenges and membership in equity-deserving groups. The **MAIDM** program will offer one scholarship of full tuition to an indigenous student, with the award selection process overseen by McMaster's Indigenous Student Services team. Several other awards will be available for incoming students and will be determined by the admissions committee.

In terms of curriculum, as noted above, case studies, data sets, and simulations will be designed to reflect a range of industries and local, national, and international contexts. Learners from diverse backgrounds will benefit from DSB's inclusive recruitment practices which ensure that our highly skilled faculty are representative of a variety of cultures and backgrounds.

4.2 PROGRAM INNOVATION

The **MAIDM** program's focus on providing a critical understanding of applied AI and analytics in diverse business leadership contexts, coupled with robust experiential elements and a flexible, blended delivery structure will ensure that graduates have the breadth and depth of knowledge, as well as the leadership and soft skills needed to excel in their professional fields. To achieve these aims, the program incorporates several innovative elements:

Case Studies and Scenarios: Case studies present a particular situation based on a real industry problem and ask learners to use their skills and knowledge in applied AI and analytics to offer recommendations and solutions. Scenarios are like case studies except that they have the additional component of the situation changing through real time: as learners work on the problem, the instructor introduces new developments to which learners must respond. These curricular components will be motivated by real problems in industry. Each course will have

individual assignments and group projects that will make use of data (real and simulated) related to diverse types of managerial problems practitioners experience.

Accessibility: The experiential components of the **MAIDM** program are designed to deliver and reinforce the curriculum in a manner that engages multiple learning styles. Program leadership will work closely with DSB's Teaching and Learning team; Equity, Inclusion, and Diversity specialist; and External Advisory Board members to ensure that curricular content, such as case-studies, scenarios, and online instruction modules follow best practices related to accessibility and reflect the global dimensions of the applied AI and analytics fields. The latter will ensure that program content reflects, and speaks to, the diverse range of backgrounds that compose McMaster's student population. Working closely with McMaster's Student Accessibility Services office, program leaders and faculty will adapt course materials to meet the individual needs of students. Likewise, industry leaders who provide guest lectures, mentorship, and co-teaching will undergo the proper accessibility training. (Please see **Section 4.4** for more details about accessibility.)

Flexible, Blended Learning Delivery: the **MAIDM** program is designed to allow early-to-mid career professionals from a diverse range of backgrounds to complete their degree while working. Each term combines three weekend residency sessions with synchronous online classes and asynchronous online components to provide a delivery structure that meets the needs of working people. This flexible, blended learning approach will be appealing to professionals from a variety of backgrounds within or beyond a two-hour commute radius.

Industry Leaders: Several courses will engage speakers from the industry, and a limited number of courses, or components of courses, may be taught by industry professionals. Such engagement will ensure a bi-directional flow of information between the proposed program and industry. In addition to guest talks and co-teaching, the program's External Advisory Board will provide a venue for the Program Director and faculty to collaborate with industry practitioners in developing curriculum, cultivating professional relationships and opportunities, and promoting the program. Social events associated with the weekend residencies will be further opportunities for learners to interact with each other and invited guests. Furthermore, each learner will have at least four years professional experience that they will bring to classes and residencies, thus enriching group discussions and exercises with expertise from diverse fields and backgrounds. The **MAIDM** curriculum is designed to affirm and incorporate the experiences of diverse learners, thus recognizing and furthering individuals' leadership capabilities.

4.3 MODES OF DELIVERY

The **MAIDM** curriculum will combine a variety of teaching and experiential strategies to ensure that graduates have a deep understanding of applied AI and analytics practices and capabilities coupled with a broad, critical, and contextual knowledge of how they can contribute to managerial problem-solving and decision-making in diverse functional fields. The combination of skilled instruction (through lectures, guest talks and industry co-teaching), team learning (in presentations, case studies, industry scenarios, etc.), hands-on experiential learning (through residencies, online classes, and learning modules), and a collaborative, cohort experience (through synchronous online classes, in-person residencies, and associated social events) will ensure that PLOs are met in a manner that accommodates the diverse learning styles of different people. These modes of delivery are detailed below:

Lectures: Live lectures (both online and in person) by skilled faculty and industry leaders will be a key part of the **MAIDM** curriculum. Both the foundational and advanced materials delivered to learners through online and in-person sessions will be reinforced through class discussion and exercises both inside and outside the classroom.

Presentations: Students will work individually and in teams to produce verbal presentations and accompanying materials (power point, charts, graphs, reports, etc.) on the applications of AI and analytics to managerial problems drawn from different functional areas and sectors. They will also present upon topics such as effective communication, human resources, and management strategies, and the ethical use and regulation of applied AI and analytics. Developing and sharing these presentations will help reinforce knowledge and skills and contribute to the collaborative leadership culture of the program's curriculum.

Case studies: Learners will work in groups on case studies developed using a combination of real and/or simulated data. Each group will be expected to apply their learnings in the course/program to analyze the case study and develop recommendations. The PD and Curriculum Committee will work closely with External Advisory Board members and other industry partners to ensure that case studies reflect a diverse range of functional areas drawn from various parts of the world.

Simulations: Similar to case studies, simulations ask learners to apply their learning and expertise to analyze and address a problem related to the application of analytics and AI in a business context. However, simulations add a dimension of change over time: instructors will introduce new developments during the course of the exercise, to which learners must respond by adapting their strategies in real-time.

Guest Lectures: Several courses will include guest lectures from industry leaders who will talk about the applications of analytics and AI in various fields, developments in business culture and practices, and engage in related discussions.

Avenue to Learn: All course materials (lecture notes, readings, software package access details) will be available on Avenue to Learn, providing learners with an online, centralized delivery hub that facilitates easy engagement with course materials, and provide diverse accessibility options.

4.4 EXPERIENTIAL LEARNING

The **MAIDM** program incorporates a variety of experiential learning components in its ten core courses. These include:

Case studies: Using real and/or simulated data, learners will work in groups on case studies that will be developed by course instructors with appropriate inputs from industry specialists. This collaboration will help ensure that case studies reflect a diverse range of functional areas drawn from an international context. Student teams will apply their skills and program learnings to analyze the case study and develop recommendations. The purpose of case studies will be to foster understanding of the kinds of problems and tasks that analytics can address, and to cultivate effective managerial and operational strategies for incorporating analytics and AI into business strategy and decision-making.

Simulations: Simulations are like case studies but incorporate an added dimension of change over time. This allows learners to exercise their skills and knowledge in a more realistic context, while still having the support and mentorship needed for the exploration, practice, and error that makes learning possible. As a key experiential learning component of the **MAIDM** program, simulations will help learners build confidence in their ability to apply skills and understanding to complex and evolving situations based on real-world inputs. These components are a good way to foster high-level skills such as synthesizing and creatively applying knowledge to new situations.

Guest Lectures/Instruction by Industry Leaders: Throughout the program, students will benefit from guest talks, in-course lectures, and teaching or co-teaching by industry leaders who will share their professional insights and experience. The PD, program faculty and staff will work closely with the Student Accessibility Services office to ensure that all instructors, including guest lecturers and industry co-teachers, are provided with the information and training they need to support students with individualized learning needs. At the beginning of each

term, the program office will advise instructors about the specific types of student accommodations needed and how to facilitate them. In some situations, DSB's inhouse Teaching & Learning Services team will be able to assist with the development of requisite modules to accommodate learning of various types.

4.5 ACCESSIBILITY & INCLUSION

The **MAIDM** program will uphold McMaster's commitment to providing accessible education that meets the needs of a heterogenous student population. As is the norm at McMaster, all DSB programs work closely with McMaster's Student Accessibilities Services office to prepare individualized plans for students requiring accommodations. The **MAIDM** program will also provide accessible educational opportunities through its intake practices, which include a video and written essay component that allows reviewers to take factors beyond academic achievements under consideration (Please see **Sections 2.3** and **2.4**). The innovative nature of the **MAIDM** curriculum, which grounds classroom instruction with experiential components, is designed to accommodate different learning styles by presenting and reinforcing content in diverse ways. The flexible, blended delivery of the **MAIDM** program will accommodate learners with different professional, personal, and family commitments. Accessible learning will be further supported, as much as possible, by presenting course materials in multiple, accessible formats such as those facilitated by McMaster's Avenue to Learn portal. Program leaders and faculty will also ensure that industry leaders who are working with learners as guest speakers or co-teachers have completed the necessary accessibility training.

4.6 RESEARCH REQUIREMENTS (IF APPLICABLE)

MAIDM is a professional degree, and so research is not a major element of the curriculum. To complete some in-course assignments, learners individually and in teams may need to do some research into existing scholarship but engaging in primary or original research is not a requirement of the program.

5 ASSESSMENT OF LEARNING

5.1 OVERALL PROGRAM QUALITY

One of the Program Director's key responsibilities will be to collect data and feedback regarding the program's first years of operation, with the aim of ensuring that the PLOs, curriculum, and experiential components are meeting the educational needs of students and society. This will require collecting feedback from students, faculty, industry partners, and (once it becomes available) alumni as detailed in **Sections 4.1** and **7.1**. Learner evaluations will be solicited at the end of each course with the aim to improving the curriculum and its delivery and identifying strengths and/or areas for improvement. These surveys will be online and anonymous to ensure that learners do not feel reluctant to

share their experiences and observations. The PD will summarize program feedback data and share the summary with the Dean of the Faculty of Business via annual reports, and during informal meetings with the Dean and Associate Deans. The PD will also share this information with the Curriculum Committee at least once per year. The aim of this reporting is to shape and improve the program's curriculum, profile, and community partnerships in ways that further the PLOs and, when necessary, to adjust the PLOs and priorities of the program to respond to the changing needs of students, industry, and society.

5.2 METHODS FOR ASSESSING STUDENTS

The **MAIDM** curriculum is designed to provide learners with a practical, situational knowledge of applied analytics and AI coupled with the broad, contextual understanding and leadership skills necessary to implement analytics and AI as a flexible component of business and organizational decision-making. Modes of assessment for specific courses will vary according to individual instructors and are likely to include:

Assignments. Short assignments will be either completed in-class or as part of learners' asynchronous, online learning. Assignments might involve answering questions regarding course readings, lectures, and materials; solving specific problems related to applied AI and analytics, doing research into specific functional areas, and other tasks and topics related to course content. Assignments may be completed individually or in teams and will vary according to instructor. Assignments will help in developing PLOs number 1 through 6, as they are widely adaptable to different contexts and materials. In general, assignments will help learners incrementally develop the capacities needed to tackle the more global assessment pieces, such as case studies, scenarios, and tests.

Group Projects. Working in small groups, students will tackle specific problems related to analytics, applied AI, and their application to various functional fields. These projects will help build foundational skills as well as helping students cultivate communication, collaboration, and project management skills. These soft skills are important transferrable capacities that will aid graduates across a variety of professional contexts. Group projects will help to cultivate and assess all six PLOs.

Presentations. Learners will be required to make in-class presentations, sometimes working individually and sometimes in teams. These will help reinforce key concepts, tools, and methods; provide a venue for learners to share their specific interests and insights; and foster a sense of agency and cohesion as a cohort. Presentations may be used in all the **MAIDM** courses, but they will be especially important in courses that focus on transferrable skills such as

communication, leadership, ethics, and regulation. Presentations may be used to help reinforce all the PLOs but will be especially important for realizing PLOs numbers 2 through 6.

Tests. In the core courses focusing applying analytics and applied AI in diverse business and organizational applications, in-class tests will be periodically administered to ensure that students have a firm grasp of key concepts, processes, and practices. Because the development of more global leadership, communication, and critical thinking skills depends upon foundational knowledge in applied AI and analytics, periodic testing will particularly help realize PLOs number 1 and 2.

Reflection Report. These pertain to two core courses: *Strategic Leadership in AI and Analytics*; and *Governance, Ethics and Compliance in AI and Analytics*. The reflection reports will ask students to consider a particular question, issue, or situation related to applications of analytics and AI and to write a short reflective report based on course materials, personal insights, and supplementary investigations. Because these two courses ask students to consider more “big picture” and social issues related to analytics and AI, this form of assessment is particularly well suited to these courses. The assessment will build upon skills and knowledge already gained in PLOs number 1 and 2, but will specifically assess PLOs related to communication, leadership, critical thinking, and assessment of developments in the field (PLOs number 3, 4, 5 and 6).

Case Studies. Case studies present learners with a situation that is either adapted from real-world events or historically reflective of them. They provide illustrative examples that will help learners develop new knowledge of the ways in which analytics and AI can be applied, and they will allow learners the opportunity to apply existing skills and knowledge to new contexts. After reviewing a case study, learners may be asked to work individually or in groups to answer a set of questions and/or to come up with ways in which analytics and AI might be productively applied to the situation presented. Case studies will be an important element of all the core courses save the term 1 course *Exploratory Data Analytics and Visualization*. This is because the former introduces learners to a fundamental overview of applied analytics and AI that is better reinforced and assessed through other methods (please see the Curriculum Map in Appendix C for details). Case studies are a high-level component that will help to assess all six PLOs, from the learners’ familiarity with analytics methodologies to the contextual understandings and soft skills that will help them to apply analytics and AI to specific contexts.

Simulations. Simulations will be used in three courses: *Decision-making under Uncertainty*; *Strategic Leadership in AI and Analytics*; and *Governance, Ethics and Compliance in AI and Analytics*. A simulation is like a case study, described above,

with the difference that simulations add an element of change over time. Learners are presented with a situation that they must use their analytics skills to address, but the instructor then introduces new developments, creating an evolving situation to which learners must react and adjust their responses. This activity draws upon learners' acquired skills and knowledge by asking them to respond in real time to a changing situation. It also fosters collaborative problem-solving, team building, and leadership skills. For this reason, simulations will be used in the three courses mentioned above, which presuppose that learners already have developed an understanding of the kinds of operations that analytics and AI can help perform in business settings. The simulations will allow learners to focus on the creative synthesis, application, and critical evaluation of these skills, and to gain a sense of confidence in their abilities. As a mode of assessment, simulations are most strongly related to PLOs 3, 4, 5, and 6, but presuppose that PLOs 1 and 2 have been achieved at least an intermediate level in other courses.

5.3 CURRICULUM MAP

The assessments listed above have been correlated to the core courses and curricular elements in the map provided in **Appendix A**.

5.4 DEMONSTRATING STUDENT ACHIEVEMENT

In keeping with the DSB's values and strategic priorities (please see **Section 4.1**), the **MAIDM** program broadly defines success as the extent to which it can open minds, transform lives, help build sustainable communities, and contribute to positive change in business and society.¹² The **MAIDM** program will accomplish these aims by fostering knowledge and skills that meet an identified social need regarding the integration of new technologies, knowledge, and methods related to analytics and AI into business and organizations. Graduates of the program will have a broad but nuanced overview of the different ways that analytics and AI can be used to inform business and organizational decision-making. They will have the leadership, communication, and team-building skills necessary to effectively incorporate analytics and AI in diverse contexts, ranging across business, government, and the third sector. Their understanding of the ways in which Big Data, analytics, and AI are changing how businesses and organizations relate to customers, clients, sustainability, and strategy will situate **MAIDM** graduates as informed leaders who can make positive contributions to their chosen fields. It is a key aim of the **MAIDM** program to empower graduates to go beyond merely reacting to new technologies and practices by providing the skills, knowledge, and critical understanding they need to actively shape business and institutional culture surrounding applied analytics and AI.

¹² For DSB's strategic plan and values, please see: <https://strategy.degroote.mcmaster.ca/>

In this regard, a key indicator that the **MAIDM** program is meeting is PLOs and mission will be provided by alumni. As described in **Section 5.1**, above, the Program Director will work with support teams and DSB's Alumni and Advancement Office to follow up with, and solicit feedback from, graduates of the program. Graduates may be invited to provide guest talks, lectures, and co-teaching in which they share their expertise and reflect upon the impact the **MAIDM** program has had on their careers. Social events associated with the weekend residencies will be another venue for program alumni, instructors, and other industry professionals to interact with learners in a more informal environment, providing important opportunities for sharing experiences and cultivating professional relationships. A key indicator of the program's success will be the testimony of graduates who, it is hoped, will view the program as contributing to their professional and personal development as innovative thinkers, leaders, and lifelong learners.

6 RESOURCES

6.1 GRADUATE PROGRAMS

6.1.1 ADMINISTRATIVE, PHYSICAL AND FINANCIAL RESOURCES

Program Administration. The administrative resources for the **MAIDM** program will consist of the **Program Director** (1 full-time equivalent or FTE unit) supported by a Program Administrator (1 full-time equivalent or FTE unit), an **Administrative Assistant** (.5 FTE), and an **Admissions Officer** (.25 FTE).

DSB Institutional Supports. The program will also be supported by DSB's in-house Information Technology team and the Teaching and Learning Services Team.

Physical Resources. Courses and instruction will take place at DSB's Ron Joyce Centre in Burlington, Ontario. **MAIDM** students will also have full access to resources, facilities, and student supports at McMaster's main campus. However, since the Ron Joyce Centre is some distance removed from the main campus, students in the **MAIDM** program will have access to an additional layer of wellness and mental health supports specific to the Ron Joyce Centre. They will also have access to the Paul and Sally Bates Interfaith Centre located at the RJC.

6.1.2 LIBRARY, TECHNOLOGY, AND LABORATORY RESOURCES

The program budget uses the budget template for graduate programs, which properly compensates the library and UTS (University Technology Services) for the use of their resources. We do not anticipate that the **MAIDM** program will require such resources beyond the normal usage.

6.1.3 FACULTY

DSB has an extensive complement of faculty members from eight Area groups that range from full-time PhD research faculty to full-time teaching professors. Education programs

in DSB draw from this pool of faculty members and engage industry professionals based on the need for specific expertise. The **MAIDM** program will engage full-time faculty members from the list below with research expertise and/or excellent teaching graduate portfolios in applied analytics and AI. In addition, the program has received commitments from industrial partners to contribute to the educational mission of the program by teaching or co-teaching courses.

Faculty Member	Credentials	Rank	Area	Available for Teaching?
B. Bakhtiari	PhD	Assistant	Operations	Yes
Y. Berson	PhD	Full	Human Resource & Management	Yes
C. Ekmekcioglu	PhD	Assistant	Information Systems	Yes
M. Ghasemaghaei	PhD	Associate	Information Systems	Yes
B. Gorgulu	PhD	Assistant	Operations	Yes
E. Hassini	PhD	Full	Operations	Yes
K. Huang	PhD	Full	Operations	Yes
Y. Jeon	PhD	Assistant	Finance	Yes
M. Kacker	PhD	Associate	Marketing	Yes
S. Kim	PhD	Assistant	Marketing	Yes
A. Mahmood	Masters	Assistant	Finance	Yes
K. Malinova	PhD	Associate	Finance	Yes
A. Mokhtar	PhD	Assistant	Accounting	Yes
M. Parlar	PhD	Full	Operations	Yes
E. Reid	PhD	Full	Human Resource & Management	Yes
N. Salari	PhD	Assistant	Operations	Yes
S. Saunderson	PhD	Assistant	Information Systems	Yes
L. Shi	PhD	Assistant	Operations	Yes
S. Vaid	PhD	Assistant	Marketing	Yes
M. Verma	PhD	Full	Operations	Yes
N. Wagner	PhD	Assistant	Information Systems	Yes
K. Wind	PhD	Assistant	Information Systems	Yes
M. Wu	PhD	Assistant	Marketing	Yes
R. Wu	PhD	Associate	Marketing	Yes
Y. Yuan	PhD	Full	Information Systems	Yes

M. Zargoush	PhD	Associate	Health Policy & Management	Yes
Y. Zhan	PhD	Assistant	Finance	Yes
Y. Zhou	PhD	Associate	Operations	Yes
B. Zoogah	PhD	Associate	Human Resources & Management	Yes

6.1.4 STUDENT FINANCIAL SUPPORT

The **MAIDM** program will offer one scholarship of full tuition to an indigenous student, with the award selection process overseen by McMaster's Indigenous Student Services team. Several other awards will be available for incoming students and will be determined by the admissions committee.

6.1.5 FACULTY RESEARCH FUNDING

DSB has faculty that support robust research projects. However, the **MAIDM** program does not focus on learners producing primary research as a program requirement. Learners may be occasionally asked to complete secondary research in their courses. **MAIDM** learners will be supported by faculty with diverse and ongoing research projects, thus ensuring that their instruction is informed by contemporary and comprehensive engagements with the field.

6.1.6 SUPERVISION

Though supervising primary student research is not a component of the program, **MAIDM** learners will be supported and mentored by highly qualified DSB faculty. Pertinent details of the faculty members teaching in the program can be found in their CVs, which are provided on the accompanying USB stick.

7 QUALITY AND OTHER INDICATORS

7.1 ACADEMIC QUALITY OF THE PROGRAM

The **MAIDM** Program Director will collaborate with faculty to conduct and review ongoing evaluations of the program's curriculum, PLOs, and experiential components, such as case studies and scenarios. These evaluations will include feedback and data gathered from students, graduates (once alumni data becomes available), industry partners, and program faculty and staff. It will be one of the PD's responsibilities to assemble and review this data, with the help of the program's administrative staff. The PD will share the summary with the Dean of the Faculty of Business via annual reports, and during informal meetings with the Dean and Associate Deans. The PD will also share this information with the Curriculum Committee at least once per year. The aim of this reporting is to shape and improve the program's curriculum, profile, and community partnerships in ways that

further the PLOs and, when necessary, adjust the PLOs and priorities of the program to respond to the changing needs of students, industry, and society.

Feedback that will inform the day-to-day operation of the program will include:

- Learner feedback regarding courses and faculty.
- Feedback from the External Advisory Board members and other industry leaders involved in the program (as instructors, co-instructors, guest speakers, etc.).
- Feedback from industry partners helping develop course materials.
- Feedback from faculty and administrative staff.
- Annual surveys of graduates from the **MAIDM** program.
- Annual application numbers, learner performance data, and completion rates.
- External reviews

7.2 INTELLECTUAL QUALITY OF THE STUDENT EXPERIENCE

The **MAIDM** program responds to the need for professionals who can skillfully incorporate, Big Data, analytics, and AI into business and organizational decision-making processes in ways that are innovative, sustainable, efficient, and productive across a variety of fields and industries. In service of this aim, the program is designed to help learners develop the skills, expertise, and knowledge to manage teams of analysts and programmers while providing a critical, contextual grounding in business culture and regulatory structures that will allow them to further their leadership potential within their chosen fields. The experiential elements of the curriculum are designed to ensure that learners have the mentorship, practical experience, and interactions they need to foster continued success in professional and civic life.

Learners will benefit from DSB's skilled and diverse faculty and the mentorship of business leaders who will share valuable real-world experience in both classroom and social settings. Social events during the weekend residencies, and yearly functions such as DSB's Spring Social will bring learners, faculty, alumni, and community partners together, helping foster important professional and social connections. The DSB prioritizes an intersectional approach to mental wellness for both students and staff, as supported by the delivery of themed workshops and a speaker series. DSB's Ron Joyce Centre campus, where the **MAIDM** program and courses will be hosted, has site-specific health and wellness resources, which are in addition to the resources available at McMaster's main campus. The twenty-month span and blended-learning delivery of the program will ensure that learners are able to complete the course components in a flexible manner that allows them to balance ongoing education with their existing professional and personal lives.

Appendix A: Curriculum Map

PLOs/DLEs		Program Requirements		
Program Learning Outcomes (PLOs)	Master's Degree Level Expectations (DLEs)	Teaching Activities and Learning Opportunities	Kind	Assessments and Evidence
1, 3	1, 3, 4, 5, 6	Exploratory Data Analysis and Visualization	Core course, term 1	Assignments; Tests; Group Projects
1, 2, 3	1, 3, 4, 5, 6	Predictive Analytics for Managers	Core course, term 1	Assignments; Tests; Case Studies; Group Projects; Presentations.
1, 2, 3, 4, 5	1, 2, 3, 4, 5, 6	Applied and Generative AI in Business Decision-making	Core course, term 2	Assignments; Tests; Case Studies; Group Projects; Presentations.
1, 2, 3, 4	1, 3, 4, 5, 6	Managing AI and Analytics Projects	Core course, term 2	Assignments; Tests; Case Studies; Group Projects; Presentations.
2, 3, 4, 5, 6	1, 2, 3, 4, 5, 6	Decision-making under Uncertainty	Core course, term 3	Assignments; Tests; Case Studies; Group Projects; Simulation; Presentations.
2, 3, 4, 5, 6	1, 2, 3, 4, 5, 6	Strategic Leadership in	Core course, term 3	Case Studies; Group Projects; Presentations;

		AI and Analytics		Simulation; Reflection Report.
3, 4, 5, 6	1, 2, 3, 4, 5, 6	Governance, Ethics and Compliance in AI and Analytics	Core course, term 4	Case Studies; Group Projects; Presentations; Simulation; Reflection Report.
2, 3, 4, 5, 6,	1, 2, 3, 4, 5, 6	Prescriptive Analytics for Managers	Core Course, term 4	Assignments; Tests; Case Studies; Group Projects; Presentations.
2, 3, 4, 5	1, 2, 3, 4, 5, 6	Marketing Analytics	Core course, term 5	Tests; Case Studies; Group Projects; Presentations.
2, 3, 4, 5, 6	1, 2, 3, 4, 5, 6	Value Creation through AI and Data Analytics	Core course, term 5	Case Studies; Group Projects; Presentations.

DLEs (for reference only, please see **Section 1.5**)

1. Depth and Breadth of Knowledge
2. Research and Scholarship
3. Application of Knowledge
4. Communication Skills
5. Awareness of Limits of Knowledge
6. Autonomy and Professional Capacity

PLOs (for reference only, please see **Section 1.4**):

1. Develop a basic understanding of applied AI and **data-driven decision-making** techniques for business and organizational decision-making.
2. Exhibit the ability to interpret outputs/solutions resulting from AI and **data-driven** applications and identify business value.
3. Demonstrate **leadership**, communication, **and** critical thinking.
4. Develop leadership strategies for managing **data-driven** and applied AI projects, and teams.
5. Evaluate ethical, **legal and regulatory aspects of applied AI and data-driven decision making**.
6. Assess new developments in the application of applied AI and **data-driven decision-making**.

Appendix B: Course Calendar Descriptions

CORE COURSES

TERM 1

Exploratory Data Analysis and Visualization

This course will provide an overview of the process involved in acquiring data from different sources and in different formats, and the resulting need for organizing data in a structured form for exploration and for developing insights. Students will then be taught visualization techniques for effective communication and storytelling. This course will incorporate data sources such as Google, MS Analytics tools such as Power BI and Excel, and visualization packages such as Tableau.

Three hours; one term. Prerequisites: enrollment in the **MAIDM** Program.

Predictive Analytics for **Managers**

This course is designed to equip managers with the skills and knowledge to leverage predictive analytics in decision-making processes. Students will learn about different techniques to create models to forecast future trends, and then gain insights from data to support strategic decisions. Various techniques would be deployed on both real and simulated cases, which will be implemented, solved and analyzed in desktop packages such as Analytic Solver, SAS and MS Azure.

Three hours; one term. Prerequisites: enrollment in the **MAIDM** Program.

TERM 2

Applied and Generative AI in Business Decision-Making

This course will provide an overview of the artificial intelligence (AI) landscape including discussion about basic machine learning (ML) concepts such as supervised and unsupervised learning, and more advanced concepts of AI. Several case studies (real/simulated) will be used to illustrate the applications of applied and generative AI algorithms to business problems, which will be further analyzed to gain insights and business value. Desktop packages including Analytic Solver, Mathematica and MS Analytics will be used in this course.

Three hours; one term. Prerequisites: enrollment in the **MAIDM** Program.

Managing AI and Analytics Projects

This course provides an in-depth exploration of the principles and practices involved in managing artificial intelligence and analytics projects. Students will learn how to effectively plan, execute, and oversee projects leveraging the power of AI and Analytics. This course will make use of Microsoft Project software, case studies and experiential learning to introduce and reinforce the managerial and technical skills of AI and data analytics driven investigation.

Three hours; one term. Prerequisites: enrollment in the MAIDM Program.

TERM 3

Strategic Leadership in AI and Analytics

This course is designed to equip managers with the skills and knowledge to leverage AI and analytics in strategic decision-making and organizational success. This course will discuss the significance of data in strategy development, fostering a culture around innovation and analytics, and leading/managing change. It will make use of case studies, role plays, case studies/group projects, and presentations to both learn and demonstrate how to lead and implement data driven organizational initiatives.

Three hours; one term. Prerequisites: enrollment in the MAIDM Program.

Decision-making under Uncertainty

This course will introduce students to the basics of decision making, incorporate utility and preferences of decision makers, and then consider uncertainty. Conceptual, diagrammatic and computer models would be built in this regard. Both real and simulated case studies depicting managerial problems from different functional areas of business will be used in the course, and a wide range of industries will be modeled and analyzed in MS Excel and Arena.

Three hours; one term. Prerequisites: enrollment in the MAIDM Program.

TERM 4

Prescriptive Analytics for Managers

This course is designed to provide managers with the tools and techniques to optimize business processes and decision-making through analytics and will focus on how to help managers understand and apply optimization techniques to business problems. A variety of business problems from different areas will be introduced, modeled and solved in a

desktop environment, and the resulting solutions analyzed to gain managerial insights. Both real and simulated case studies will be used in the course, and the computer implementation will be in Analytic Solver, which integrates into the MS Excel environment and thus suitable for such a course.

Three hours; one term. Prerequisites: enrollment in the **MAIDM** Program.

Governance, Ethics and Compliance in AI and Analytics

This course will provide a comprehensive overview of the ethical, governance, and compliance issues associated with the development and deployment of artificial intelligence (AI) and analytics systems. It will examine case studies and relevant developments to explore the set of guiding principles that stakeholders (academics, government, intergovernmental entities, non-profit organizations, and private companies) use to ensure AI technology is developed and used responsibly, transparently, and in alignment with societal values.

Three hours; one term. Prerequisites: enrollment in the **MAIDM** Program.

TERM 5

Value Creation through AI and Data Analytics

Value creation is the process that converts inputs into outputs that have more worth than their components. Value can be seen as how much customers will pay for a product or service compared to what a company spends in producing it. This course will use a series of case studies and examples from different functional areas of business and demonstrate how applied AI and analytics can help create value, and touch on the importance of a multi-disciplinary perspective to business problems.

Three hours; one term. Prerequisites: enrollment in the **MAIDM** Program.

Marketing Analytics

This course will focus on the process of tracking and analyzing data related to marketing activities, which in turn can enable organizations to improve their customer experiences, increase the return on investment (ROI) of marketing efforts, and craft future marketing strategies. The course will cover the three spheres of marketing analytics: analyzing the present; reporting on the past; and predicting the future. Real/Simulated data and case studies will be used to cover the spheres, and the discussions will be supported by outputs from desktop and computer programs.

Three hours; one term. Prerequisites: enrollment in the **MAIDM** Program.

McMaster
University



**EXTERNAL REVIEWERS'
GUIDEBOOK FOR NEW
PROGRAM PROPOSAL
REPORT**

CONTACT INFORMATION

If you have any questions regarding the program's IQAP, inquiries can be directed to igap@mcmaster.ca.

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MEETING INFORMATION

It is required that all reviewers visit at the same time, normally for two days. As appropriate, the review team shall meet with the following:

- Chair or Director;
- Full-time faculty members (in groups);
- Part-time faculty members (in groups);
- Program students
- Associate Dean;
- Dean;
- Associate Vice-President (Faculty);
- Provost and Vice-President (Academic), if available;
- Additional meetings may be scheduled at the request of the external review team, Chair of the department or individuals.

REVIEWERS' REPORT

The review team will submit, to the Office of the Vice-Provost (Faculty), a joint report, including an Executive Summary, for the program(s) under review, normally within four weeks of the visit. The review team's report should address the substance of both the Program Proposal and the evaluation criteria set out in the Program Proposal. The intent of these reports is to be formative and constructive. The reports are intended to provide counsel rather than prescriptive courses of action. The Office of the Vice-Provost (Faculty) will circulate the report to the appropriate Chair(s) and Dean(s).

Based on information gained from the on-site review, the Program Proposal, consultation with members of the program and the University, independent assessments and all material submitted as part of the program review, the review team is expected to provide feedback on the following evaluation criteria and list any recommendations relevant to that section. However, the review team is not restricted to the following issues/questions.

We have provided a template for the reviewers' report below, which is in line with the requirements outlined within the Quality Assurance Framework.



**EXTERNAL REVIEWERS'
REPORT ON PROPOSED
MASTER OF MANAGEMENT OF AI AND
ANALYTICS (FT + BLPT FORMATS)
JANUARY 2025**

Reviewer 1

Name: Dr. Ignacio Castillo

University Address: Wilfrid Laurier University

Reviewer 2

Name: Dr. Amir Gharehgozli

University Address: California State University, Northridge

Internal Reviewer

Name: Dr. Zoe Li

Department: Civil Engineering

Outline of the Visit

Was the site visit: In person: ☐ Virtual site visit: ☒ [Desk Review](#): ☐

If the review was conducted either virtually or via desk review, was this format agreed to by both external reviewers? Yes ☒ No ☐

Was sufficient rationale provided by the Provost/Provost's delegate for an off-site visit?

Yes ☒ No ☐

For those reviews that included an in-person or virtual visit, please indicate the following (or insert the site visit schedule below:

- Who was interviewed?
- What facilities were seen?
- Comment on any other activities relevant to the appraisal.
- **Or: insert the site visit schedule below**

IQAP New Program Review
Proposed Programs: Master of Management in AI and Analytics (FT and BLPT)
Review Date: January 13th and 14th

Reviewers

External reviewer:	Dr. Ignacio Castillo, Wilfrid Laurier University
External Reviewer	Dr. Amir Gharehgozli, California State University, Northridge
Internal Reviewer	Dr. Zoe Li, Civil Engineering

Review Schedule (All times noted are Eastern Time)

Date: January 13th		
Faculty/Group	Time	Connection Details
Dr. Steve Hranilovic, Vice-Provost and Dean of Graduate Studies	9:30-10:00	https://mcmaster.zoom.us/j/93340574785 Meeting ID: 933 4057 4785 Passcode: 004110
Dr. Manish Verma, AD Graduate Studies	10:00am-10:30am	
Student Experience Team: Jenn Dunk and Cynthia Bishop	10:30am-11:00am	
Break	11:00am-11:15am	
Students:	11:20am-12:20pm	
Lunch	12:30pm-1:30pm	
Part-time/Sessional Faculty: Mohammad M.; Zeinab V.; Apoorv T.; Srikanth B.; Chandra R.; Zahra M.; Kimia A.;	1:45pm-2:45pm	
Break	2:45pm-3:00pm	
Dr. Matheus Grasselli, Deputy Provost	3:00-3:30	
Full-time Faculty: Cansu E.; Shane S.; Maryam G.; Mahmut P.; Nicole W.; Nooshin S.; Michael W.; Manish K.;	3:45pm-4:45pm	

Date: January 14th		
Faculty/Group	Time	Connection Details
Program Directors: Trish R.; Behrouz B.; Katya M.	9:15am- 10:15am	https://mcmaster.zoom.us/j/93340574785 Meeting ID: 933 4057 4785 Passcode: 004110
Break	10:15am- 10:30am	
Dr. Khaled Hassanein, Dean, DeGroote School of Business	10:30am- 11:00am	
Student Experience Team: Greg Rombough and Majdoulin Herari	11:00am- 11:30am	
L'naya Russell, Director FA Chris Longtin, Manager, Strategic Initiatives	11:30am- 12:00pm	
Lunch	12:30pm- 1:30pm	
Break	1:30pm- 1:45pm	
Full-time faculty: Yair B.; Berk G.;	1:45pm- 2:45pm	
Analytics Committee: Yun Z.; Sash V.; Yoontae J.; Manaf Z.	2:45pm- 3:30pm	
Review Team Meeting	3:30-4:00	
Dr. Steve Hranilovic, Vice- Provost and Dean of Graduate Studies	4:00 – 4:30	

In order to continuously improve the effectiveness and efficiency of site visits/virtual site visits, please comment on the following:

- How effective was the proposal brief in preparing you for the visit/virtual site visit?

The content as expected. However, there was some confusion about the nature of the review from the perspective of having one program with two formats or two independent programs with the same name. This report assumes that we are dealing with one program with two formats, FT and BLPT.

- How could the logistics of the visit/virtual site visit be improved?

Conducting the review via Zoom offers significant convenience; however, an in-person review provides external reviewers with the opportunity to better understand the university's resources and develop a deeper appreciation for the space in which the program is housed.

During the review, two separate meetings were organized with full-time faculty. In one of these meetings, only two faculty members attended, and one had to leave early due to another commitment. The rationale for holding two separate meetings with full-time faculty was not clearly explained.

While external reviewers from Canada may be familiar with the "new program" review process, international reviewers may not have the same level of understanding. Providing more detailed information prior to the review would be beneficial. For instance, clarifying the purpose of meeting with various stakeholders to gain insights into the college, university, and program would ensure a smoother and more effective review process.

The reviewers had several technical questions about the program that required discussion with the program development team. However, during the two-day review, it was unclear whether a meeting with the development team had been organized. It appears that the program was initially initiated by the analytics committee and later overseen by the associate dean. A separate meeting with those who were involved throughout the entire development process would have been valuable in providing a clearer and more comprehensive understanding of the program.

PROGRAM

- Comment on if the program's [objectives](#) clearly described
- Comment on the appropriateness of the degree nomenclature, given the program's objectives
- Comment on the consistency of the program with McMaster's mission and academic plan; whether the program learning outcomes are clear, appropriate and aligned with the undergraduate or graduate Degree Level Expectations.
- McMaster's Current Priorities and Strategic Mandate Agreement should be at the forefront of program design. This information can be found in the links provided below:
 - i. **McMaster's Strategic Mandate Agreement:**
<https://ira.mcmaster.ca/app/uploads/2020/11/McMaster-SMA3-Agreement-August-31-2020-SIGNED-FINAL.pdf>
 - ii. **McMaster's current priorities:**
https://president.mcmaster.ca/app/uploads/2021/05/Institutional-Priorities-and-Strategic-Framework_FINAL_5May21.pdf

Comments:

The program's objectives are clearly articulated, emphasizing the development of analytical, managerial, and leadership skills to meet the growing demand for expertise in AI and analytics. The objectives align with McMaster's mission of fostering innovation, inclusivity, and excellence in teaching, research, and societal impact. The degree nomenclature, Master of Management in AI and Analytics, is appropriate, reflecting both the applied and managerial focus of the program while aligning with the program's objectives.

The program learning outcomes are well-defined and correspond to graduate Degree Level Expectations. These outcomes include critical competencies in data analytics, applied AI, ethical decision-making, and leadership. The alignment between the learning outcomes and McMaster's academic standards ensures that graduates are equipped to address contemporary challenges in analytics-driven decision-making.

McMaster's Current Priorities and Strategic Mandate Agreement appear to have been integral to the program's design. The focus on experiential learning, inclusivity, and fostering critical thinking reflects institutional goals. By integrating elements such as ethical frameworks and societal well-being into its curriculum, the program aligns with McMaster's commitment to advancing human and societal health.

Commentary Specific to the Full-Time (FT) Format

The inclusion of an internship in the FT format is particularly aligned with McMaster's mission to prepare students for impactful careers. This experiential component is critical for recent undergraduates, offering hands-on experience that supports skill development and employability in data-intensive industries.

Commentary Specific to the Blended-Learning, Part-Time (BLPT) Format

The BLPT supports working professionals by focusing on applied knowledge and leadership development without requiring an internship. This design is suitable for mature learners, enabling them to balance professional responsibilities while pursuing advanced education aligned with their career growth.

The program's design effectively incorporates McMaster's mission and priorities, with appropriate nomenclature and learning outcomes that are clear, relevant, and consistent with Degree Level Expectations.

Specific Recommendations (where applicable):

- Consider including more detailed strategies for fostering interdisciplinary collaboration across faculties that may enhance the program's appeal.
- Consider adding clarity, explicitly addressing how learning outcomes will be assessed, particularly for soft skills like leadership and ethical decision-making
- Consider developing explicit metrics that could include graduate employment rates within six months (for FT format), employer satisfaction surveys, alumni career progression tracking, student satisfaction scores, internship impact assessments (for FT format), and industry engagement through advisory boards or collaborations (for BLPT format).
- For the BLPT format, consider offering optional networking or short-term experiential learning opportunities that might enrich working professionals' experiences.

ADMISSION & ENROLMENT

- Comment on whether the admission requirements (including any alternative requirements) are appropriately aligned with the program learning outcomes (and/or Degree Level Expectations) established for completion of the program.
- Are there any applicable alternative admission requirements, including how the program recognizes prior work or learning experience, and if so, are they appropriate?

Comments:

The program's admission requirements align well with the established program learning outcomes and graduate Degree Level Expectations. The emphasis on foundational skills in mathematics, statistics, and programming ensures that students are prepared for the program's rigor. The consideration of prior learning or work experience as alternative requirements for applicants without traditional academic backgrounds is commendable, fostering inclusivity while maintaining academic standards.

Commentary Specific to the Full-Time Format

For the FT format, the requirements appropriately target recent undergraduates with strong academic performance in relevant disciplines. The inclusion of an online video interview and personal essay provides insight into candidates' soft skills, motivation, and readiness for a structured, experiential curriculum. However, the program could further support diversity by offering preparatory workshops for candidates from less-technical backgrounds.

Commentary Specific to the Blended-Learning, Part-Time Format

The BLPT format effectively caters to working professionals by recognizing prior work experience as a key criterion for admission. The flexibility to accept candidates with relevant industry expertise, even without recent academic coursework, is appropriate and aligns with the program's applied focus. Explicit guidelines for assessing the equivalency of professional experience to academic prerequisites would enhance transparency and consistency.

Specific Recommendations (where applicable):

- To strengthen admissions, consider offering bridging modules or preparatory courses for candidates from less technical areas, ensuring they meet prerequisites in mathematics, programming, or analytics.
- Consider developing clear rubrics for evaluating professional experience as an alternative to academic requirements, particularly for the BLPT format. Explicit guidelines for assessing the equivalency of professional experience to academic prerequisites would enhance transparency and consistency.
- While admitting candidates with backgrounds in mathematics, statistics, and programming ensures they are prepared for the program's rigor, verifying whether applicants meet these requirements can be a time-intensive process. This often necessitates significant effort from the admissions team, including multiple rounds of communication with candidates to confirm their qualifications. Streamlining this evaluation process or providing clearer upfront guidelines may help reduce the workload and enhance efficiency.

STRUCTURE

- Comment on how the program's structure and regulations meet the specified program learning outcomes.

NOTE: The Quality Assurance Framework requires a clear distinction between program objectives, program-level learning outcomes, and [Degree Level Expectations](#). See the [Guidance on Program Objectives and Program-level Learning Outcomes](#) for details on the distinction.

- Is the program's structure and the requirements to meet the program objectives and program-level learning outcomes appropriate?
- Do the program's structure, requirements and program-level learning outcomes ensure students meet the institution's Undergraduate or Graduate Degree Level Expectations?
- Does the (proposed) mode of delivery facilitate students' successful completion of the program-level learning outcomes?
- Does the curriculum address the current state of the discipline or area of study?

Comments:

The program's structure aligns well with its learning outcomes and Degree Level Expectations. The balance of foundational courses, electives, and experiential components effectively supports the development of skills in applied AI, analytics, leadership, and critical thinking. The curriculum aims to address industry needs with a focus on cutting-edge AI and analytics methods, while incorporating ethical, cultural, and social dimensions of the field. The BLPT and FT formats of delivery are designed to support diverse learner needs.

Commentary Specific to the Full-Time Format

The FT format's structure is particularly well-suited to recent graduates. The inclusion of a two-term Industry Practicum and an internship provides introductory and more advanced experiential learning opportunities, ensuring students can apply academic knowledge to real-world challenges. The program's progression—from foundational knowledge to applied skills—supports the program's objectives and outcomes. Greater integration of interdisciplinary opportunities (e.g., collaboration with engineering or computer science) could further enhance the curriculum.

Commentary Specific to the Blended-Learning, Part-Time Format

The BLPT format appropriately addresses the needs of working professionals by offering flexible delivery through online and in-person components. The focus on applied learning, combined with case studies and project-based assessments, supports the development of leadership and analytical skills aligned with professional practice. While the absence of an internship is logical for this cohort, optional experiential modules or industry networking events could further enrich the program.

The program structure and delivery are well-aligned with the specified learning outcomes and Degree Level Expectations. Both formats aim to address current industry demands while providing pathways for continuous improvement and student success.

Specific Recommendations (where applicable):

- Consider adding interdisciplinary electives or collaborations with engineering and computer science to enhance technical depth, offering optional experiential modules for BLPT learners, and embedding additional assessments for leadership and ethical competencies. These changes would ensure the structure remains robust, adaptable, and aligned with evolving industry needs.
- To support young learners in the FT format, especially those from less technical backgrounds, the program could provide technical bootcamps, peer tutoring, or faculty mentoring.
- Given the complex priorities of working professionals in the BLPT format, consider offering modular or asynchronous course options that could enhance flexibility. Having structured support for re-entry after leaves of absence, including personalized course plans, would help ensure continuity and success.
- For the BLPT format, consider incorporating periodic check-ins or career-focused advising that could support learners that are balancing their careers, families, and studies while minimizing disruptions from deviations in the ideal pathway.
- Currently, elective courses can only be taken in the final semester. Distributing elective courses across earlier semesters would provide greater flexibility for students and allow them to tailor their education based on their evolving understanding of the AI work environment and insights gained from academic courses.
- **Suggested Improvements to Program Structure**
 - **Pathway to PhD Programs:**
It is unclear whether the program offers a clear pathway for students who wish to continue their education and pursue a PhD. Establishing such a pathway could provide valuable long-term academic opportunities for highly motivated students.
 - **Fast-Track Option:**
The program could consider offering a fast-track option for students who wish to complete their studies in one year. This would provide flexibility and appeal to students with specific career goals or timelines.
 - **Combined Programs:**
The program development team may want to explore the possibility of creating combined pathways. For instance, a 5-year pathway where BSc

students can directly transition into a Master's program, or allowing Master's students to continue into a PhD program, considering

CURRICULUM AND TEACHING

- Comment on how the curriculum reflects the current state of the discipline or area of study; evidence of significant innovation or creativity in the content and/or delivery of the program; the appropriateness and effectiveness of the modes of delivery at meeting program learning outcomes; and how teaching in the program prioritizes areas of accessibility and removes barriers to learning.

Comments:

The curriculum partially reflects the current state of AI and analytics, integrating cutting-edge tools, programming languages, and emerging methodologies. The focus on ethical, cultural, and social dimensions highlights significant content and pedagogy. Modes of delivery, including experiential learning and blended formats, align effectively with program learning outcomes. Accessibility is prioritized through flexible delivery options, use of technology, and inclusive teaching practices, reducing barriers for diverse learners.

Commentary Specific to the Full-Time Format

The FT format leverages industry practicums, internships, and in-person instruction to support hands-on learning and professional career development. The emphasis on applied AI and analytics fosters creativity and innovation. For young learners, incorporating accessible resources such as technical workshops, collaborative projects, and adaptive pacing ensures readiness. Prioritizing inclusive classroom practices and peer support networks would further enhance learning.

Commentary Specific to the Blended-Learning, Part-Time Format

The BLPT format aims to accommodate working professionals. Case-based and project-driven learning ensures relevance and application to industry challenges. Adding optional technical support sessions and integrating short-term experiential opportunities could enhance engagement for working professionals managing careers and personal obligations.

Specific Recommendations (where applicable):

- Consider including and integrating interdisciplinary electives.
- Consider offering optional technical workshops for less technical learners
- Consider enhancing experiential learning opportunities for BLPT learners.
- Incorporating Programming and a Culminating Project:
 - **Programming:** It is essential for any AI student to have a fundamental understanding of programming. While generative AI has minimized the apparent necessity of programming in certain contexts, a foundational knowledge remains crucial for interpreting AI commands and effectively collaborating with engineers. Including a programming course would also help align students from diverse backgrounds, particularly in the BLPT program, ensuring a common skill level.
 - **Culminating Project:** While internships and industry practicums offer practical exposure, the technical nature of these programs requires a capstone project. A culminating project would provide students the opportunity to synthesize and apply their learning in a comprehensive and integrated manner, which is particularly important for programs distinct from traditional MBAs.
- Adjustments to the Curriculum:
 - **Courses to Consider Dropping:**

The following courses, while foundational for AI managers, align more closely with the objectives of an MBA program and may not add as much value to a state-of-the-art AI and Analytics program:

 - *Data-driven Project Management*
 - *Leadership & Change Management in AI and Analytics*
 - *Simulation and Risk Analytics*
 - **Courses to Consider Adding:**

To strengthen the program's technical rigor and industry relevance, consider incorporating courses such as:

 - *Programming*
 - *Database Management*
 - *Text Mining*
 - *Privacy and Cybersecurity*
 - *Capstone project*
 - **Revisiting Core and Elective Courses:**

As indicated in Table 10 (page 43), several elective courses hold significant value and should be considered as core offerings if feasible. These include:

 - *Data Analytics using Python*
 - *Data Mining and Business Intelligence*

- *Business Applications and Data Analytics/AI*
 - Adjustments to the Curriculum:
The program development team should consider addressing potential overlaps between certain courses. For example:
 - There appears to be a significant overlap between *Leveraging AI and Deep Learning in Business* and *Leadership & Change Management in AI and Analytics*. Leveraging AI in business inherently involves managing change, which encompasses all related aspects that must be considered prior to implementation.
 - Additionally, these courses seem to overlap with *Business Applications and Data Analytics/AI*, as outlined in Table 10 (page 43).
- Eliminating or differentiating these overlaps would streamline the curriculum and enhance its focus.

ASSESSMENT OF LEARNING

- Comment on the appropriateness and effectiveness of the proposed methods of assessment in demonstrating achievement of the program learning outcomes, as well as the extent to which the program(s) assess graduating student achievement of the program learning outcomes.
- Are the plans in place to monitor and assess the following, both appropriate and effective?
 - i. The overall quality of the program;
 - ii. Whether the program is achieving in practice its proposed objectives;
 - iii. Whether its students are achieving the program-level learning outcomes; and
 - iv. How the resulting information will be documented and subsequently used to inform continuous program improvement.

NOTE: Programs should ensure that the plans for monitoring and assessing student achievement provide an assessment of students currently enrolled as well as post-graduation metrics. Please see [Guidance on Assessment of Teaching and Learning](#) for further details and examples of measures for assessing teaching and learning that meet the requirements of the Quality Assurance Framework.

Comments:

The proposed methods of assessment demonstrate achievement of program learning outcomes, combining traditional evaluations with project-based and experiential assessments. Mechanisms such as surveys, feedback loops, and periodic reviews ensure program quality and alignment with objectives. Post-graduation metrics, including employment outcomes and alumni surveys, are vital for continuous improvement. Clear documentation and analysis of these measures will enhance program monitoring and drive improvements.

Commentary Specific to the Full-Time Format

The FT format uses practical assessments to evaluate applied skills and experiential learning. These are complemented by case studies, exams, and project work. Monitoring graduating students' outcomes, including placement rates and employer feedback, will ensure objectives are met. Periodic curriculum reviews informed by student feedback and graduate performance will maintain program quality.

Commentary Specific to the Blended-Learning, Part-Time Format

The BLPT format assesses working professionals through applied projects, case-based evaluations, and leadership-oriented assignments, ensuring alignment with program outcomes. Feedback mechanisms tailored to part-time learners, such as mid-course evaluations and flexible reporting of professional achievements, can enhance continuous improvement. Post-graduation metrics, including career advancement and employer satisfaction, are critical for evaluating success and maintaining relevance for industry professionals.

Specific Recommendations (where applicable):

- To align with accreditation, the program should consider implementing assessment rubrics tied to learning outcomes, emphasizing critical thinking, leadership, and applied skills.
- Consider including longitudinal alumni tracking, employer feedback, and direct assessments of ethical and technical competencies to ensure compliance with accreditation standards while supporting continuous program improvement and demonstrating graduate impact.
- Revising Learning Outcomes: For a graduate-level program, the learning outcomes must align with the "Create" level (Mastery Level) of Bloom's Taxonomy. The program development team is advised to revisit the stated

learning outcomes and ensure they meet the required level of mastery, reflecting the advanced nature of the program, as also required by AACSB.

- **Alignment Matrix and Assessment Workload:** Appendix C presents an alignment matrix where nearly all Program Learning Outcomes (PLOs) are linked to the Degree Level Expectations (DLEs). This comprehensive alignment suggests that every course must be assessed against every DLE, creating a significant workload for both instructors and the assessment team. The program development team is encouraged to carefully analyze this alignment and identify which PLOs and DLEs are appropriately addressed at the mastery level within specific courses. This targeted approach will streamline assessment efforts while maintaining program quality and rigor.

Bloom's Taxonomy Verbs for Critical Thinking



01	02	03	04	05	06
KNOWLEDGE:	UNDERSTAND:	APPLY:	ANALYZE:	EVALUATE:	CREATE:
Define, Identify, Describe, Recognize, Tell, Explain, Recite, Memorize, Illustrate, Quote	Summarize, Interpret, Classify, Compare, Contrast, Infer, Relate, Extract, Paraphrase, Cite	Solve, Change, Relate, Complete, Use, Sketch, Teach, Articulate, Discover, Transfer	Contrast, Connect, Relate, Devise, Correlate, Illustrate, Distill, Conclude, Categorize, Take Apart	Criticize, Reframe, Judge, Defend, Appraise, Value, Prioritize, Plan, Grade, Reframe	Design, Modify, Role-Play, Develop, Rewrite, Pivot, Modify, Collaborate, Invent, Write

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RESOURCES TO MEET PROGRAM REQUIREMENTS

- Comment on evidence that there are adequate human, physical and financial resources to sustain the quality of scholarship produced by undergraduate students.
- Given the program's class sizes and cohorts as well as its program-level learning outcomes:

- a) Is the number and quality of core faculty who are competent to teach and/or supervise sufficient to achieve the goals of the program and foster the appropriate academic environment?
- b) When adjunct/sessional faculty play a large role in the delivery of the program, is their role appropriate? Are plans in place to ensure the sustainability of the program and the quality of student experience and if so, are these suitable?
- c) Is the provision of supervision of experiential learning opportunities adequate, if applicable?
- d) Taking into consideration implications for other existing programs at the university, is the administrative unit's planned use of existing human, physical and financial resources appropriate?
- e) Are there adequate resources available to sustain the quality of scholarship and research activities produced by students, including library support, information technology support, and laboratory access?

NOTE: External Reviewers are not expected to assess the financial viability of a program, and internal budgets are not under the purview of the External Review of a New Program Proposal. Provide a general assessment of the administrative unit's planned use of existing financial resources.

Comments:

The program demonstrates evidence of adequate human, physical, and financial resources to sustain program quality. The provision of tenured/tenure-track faculty with expertise in AI, analytics, and management ensures strong support for teaching and supervision. Administrative plans align well with maintaining resource allocation for high-quality learning experiences and research opportunities. Library, IT, and laboratory resources appear robust, supporting student success.

The number and qualifications of tenured/tenure-track faculty appear sufficient to achieve program goals and foster an appropriate academic environment. Sessional faculty, where involved, complement core faculty expertise. Plans for integrating sessional faculty into the academic environment and maintaining teaching quality are appropriate. Experiential learning supervision, particularly for industry practicums, is adequate and enhances program quality.

The administrative unit has appropriately planned the use of human, physical, and financial resources without adverse impacts on existing programs. The physical infrastructure, including access to learning hubs, appears sufficient. Continued

monitoring of student needs, particularly for IT and lab resources, will ensure sustained support.

Specific Recommendations (where applicable):

- To address learner variety and diversity, consider allocating resources for tailored academic support, such as mentorship programs, technical workshops, and peer tutoring.
- Consider expanding access to flexible learning technologies and spaces.
- Consider formalizing faculty training on diverse teaching strategies and adequate supervision for experiential learning to ensure program requirements are met across diverse student backgrounds and needs.
- The program development team has introduced nine new core courses and 15 electives, including five new courses. While the program's anticipated growth to 120 students should ensure robust enrollment in core courses, some elective courses may attract only a small number of students. This could result in classes that are not financially viable to offer, even when accounting for graduate students from other majors who may enroll. It is recommended that the program development team significantly reduce the number of elective courses to streamline the curriculum and ensure optimal resource utilization.

QUALITY AND OTHER INDICATORS

- Please provide commentary on the indicators the department will use over the first five years to document and to demonstrate the quality of the program.
- Comment on the quality of the faculty (e.g., qualifications, funding, honours, awards, research, innovation and scholarly record, appropriateness of collective faculty expertise to contribute substantively to the program and commitment to student mentoring).
- Comment on any other evidence that the program and faculty will ensure the intellectual quality of the student experience.
- Comment on any evidence of how faculty members will ensure the intellectual quality of the student experience.

Comments:

The program plans to use metrics such as graduation rates, employment outcomes, student and employer feedback, and alumni achievements to document program

quality. Faculty qualifications, strong research funding, and expertise in AI and analytics align well with the program's objectives. The program's commitment to innovation, mentorship, and experiential learning aims at fostering an intellectually stimulating environment.

Faculty mentorship, combined with experiential components, is to ensure an enriched intellectual experience for the FT format. In the BLPT format, faculty expertise supports applied learning tailored to working professionals using flexible scheduling, industry-relevant projects, and faculty availability for guidance to ensure a high-quality intellectual experience for this learner group.

SUMMARY & RECOMMENDATIONS

Provide a brief summary of the review. Please include commentary on any clearly innovative aspects of the proposed program together with recommendations on any essential or otherwise desirable modifications to it, as applicable.

Recommendations that are clear, concise, and actionable are the most helpful for universities as they prepare to launch new programs. Include specific steps to be taken on any essential or otherwise desirable modifications to the proposed program.

NOTE: The responsibility for arriving at a recommendation on the final classification of the program belongs to the Appraisal Committee. Individual reviewers are asked to refrain from making recommendations in this respect.

Summary

The proposed Master of Management in AI and Analytics program is a well-structured, offering that reflects the current state of AI and analytics. It incorporates experiential learning, ethical considerations, and industry-relevant skills. The program effectively accommodates two distinct learner groups while aligning with McMaster's mission and priorities.

The FT format highlights experiential learning through practicums and internships, preparing young learners for competitive roles. To better support less technical learners, bootcamps or supplementary workshops should be included. Concerns regarding student progression could be addressed by implementing structured academic advising and monitoring mechanisms to support learners who struggle with technical content. Additionally, clear policies for integrating students back into the program after deviations from the ideal pathway, such as leaves of absence, are recommended to ensure successful progression and completion. Incorporating interdisciplinary opportunities with engineering or computer science could further enhance the program's depth.

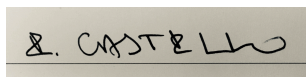
The BLPT format effectively caters to working professionals with flexible delivery and applied learning. There are minor concerns regarding the reliance on sessional faculty, who are strategically filled by industry leaders. While these roles bring valuable practical expertise, their availability can be inconsistent. To ensure sustainability, the program should implement periodic reviews of the contributions of sessional faculty, foster stronger integration with tenured/tenure-track faculty, and establish a pipeline for sourcing and retaining qualified sessional faculty.

The program is poised to deliver high-quality education and meet learner needs. Considering these recommendations will further strengthen its sustainability and impact on diverse learner groups.

Recommendations:

1. Enhance support for diverse learners: develop foundational workshops, peer mentoring, and adaptive learning technologies to support learners from less technical backgrounds and ensure quality learning outcomes.
2. Ensure program sustainability: establish a balance between sessional and tenure/tenured-track faculty roles to maintain academic consistency and plan for long-term faculty engagement.
3. Expand global and interdisciplinary perspectives: introduce international case studies and collaborative projects to broaden the curriculum's scope.
4. Strengthen assessment strategies: implement transparent rubrics for experiential components and expand post-graduation metrics to include alumni and employer feedback for continuous improvement.
5. Support for diverse learners: offer tailored academic support, flexible re-entry pathways for leave-taking students, and targeted mentorship programs.
6. Address program flexibility: create alternate pathways for students deviating from the ideal trajectory, including options for remedial courses and tailored scheduling.
7. Continuous feedback: implement structured partner and stakeholder feedback mechanisms to ensure the curriculum evolves with industry needs.
8. Revising the curriculum: The program development team is encouraged to dedicate additional time to reviewing the curriculum to identify opportunities for enhancement. This process should involve exploring whether the curriculum could be strengthened by adding new courses, removing less relevant ones, or revising existing courses to better align with the program's objectives and industry demands.

Signature:



Signature:



Date:

1/28/2025

Subject: External Report Recommendations and Program Refinements

On January 29, 2025, McMaster University received the External Report for the proposed Master of Management in AI and Analytics (a full time program) and the Master of Applied AI and Data Driven Decision –Making (part time blended learning format) programs—The report contained several insightful recommendations, which will be addressed in the response from both the program and the Faculty.

One of the key observations was the reviewers' uncertainty regarding whether these were two distinct programs or a single program with full-time and part-time streams. Despite receiving two separate proposals, the reviewers found it difficult to distinguish between them. In response, the program developer prioritized this recommendation and explored ways to further differentiate the two programs. We appreciate the feedback and opportunity to strengthen our proposals early on.

The model for these two programs aligns with McMaster's established practice in other professional fields, where different programs are created for the same degree based on students' experience and career levels. This approach has been highly successful, with students reporting positive outcomes.

Areas for Consideration

The reviewers identified three key areas for refinement:

- Program names
- Greater differentiation of coursework between the two programs
- Adjustments to program learning outcomes

Actions Taken

The program lead has addressed these recommendations as follows:

Clarification of Program Intent: The full-time program is designed for early-career or new professionals seeking a strong foundation in AI and analytics to enhance their employability. The part-time blended learning program is tailored for mid-career professionals aiming to advance their careers, building on their existing knowledge in the field. To reflect this distinction, the name of the part-time program has been revised from Master of Management in AI and Analytics (Blended Learning Part Time) to Master of Applied AI and Data-Driven Decision- Making

Course Differentiation: Given the varying experience levels of the intended student populations, courses have been refined to emphasize differences in evaluation methods and content. While some courses maintain thematic similarities, they have been structured to align with the specific program objectives. Additionally, new course offerings have been introduced.

Program Learning Outcomes: The learning outcomes have been reviewed and revised to ensure they accurately reflect expectations for each program, considering the prior expertise of incoming students.

Follow-Up Discussion with External Reviewers

Given the apparent confusion of the reviewers on the nature of these two new programs, on March 10, 2025, the Vice Provost & Dean and Senior Associate Registrar met with the external reviewers to provide clarification and to present the proposed adjustments. The reviewers were asked to provide feedback on whether the proposed changes effectively addressed their concerns and alleviated their confusion. During the 40-minute discussion, the reviewers were asked to confirm whether the lack of clarity between the two programs had been resolved and whether the selected areas of refinement were appropriate. The SGS team provided a detailed overview of the proposed modifications and the rationale behind them.

The reviewers affirmed that these areas were central to their concerns and agreed that the proposed changes were appropriately targeted to address them.

We appreciate the generosity of the Review Team in engaging with us beyond their formal report submission and are grateful for their insights and support as we continue to advance these important program proposals through the governance process.



Steve Hranilovic

Vice-Provost & Dean of Graduate Studies

Master of Management in AI and Analytics

External Review Program Response

April 3, 2025

On behalf of the Analytics Program Development Committee (APDC) for the *Master of Management in AI and Analytics* (MM, AI&A) graduate program, we are appreciative of the review panel's time and expert assessment of the program.

The review panel noted a number of strengths in the proposed program, and it was encouraging to note that the panel appreciates “*well-structured offering that reflects the current state of AI and Analytics*”, acknowledges “*program effectively accommodates two distinct learner groups*”, endorses “*experiential learning, ethical considerations, and industry relevant skills*”, and underscores “*program is poised to deliver high-quality education and meet learner needs*”.

The review panel also identified opportunities for improvement that are outlined in eight recommendations. In addition to responding to the eight recommendations, further details are being added to this narrative response based on a follow-up meeting between the School of Graduate Studies and the review panel. The most significant feedback was the suggestion to differentiate this proposal from the companion proposal of the Master of AI and Data-Driven Decision Making (MAIDM) program.

We welcomed this feedback and convened an additional meeting with the Reviewers and the Vice-Provost and Dean of the School of Graduate Studies and the Senior Associate Registrar and Graduate Secretary to present our proposed response to this to ensure the differentiation was clearer. We recognize that bringing two proposals through Governance at the same time requires this extra step to ensure that we have clearly communicated our intentions, and that the quality of both programs can be reviewed appropriately.

Response to Recommendations:

Recommendation 1- Enhance support for diverse learners: develop foundational workshops, peer mentoring and adaptive learning technologies to support learners from less technical backgrounds and ensure quality learning outcomes.

Response: Term 1 of the MM, AI&A program is designed to provide learners with the opportunity to develop their skills and knowledge in applied AI and analytics, and to brush up on tools and techniques. More specifically, Phase I of the Industry Practicum is an opportunity to learn the basic research skills, software programs, and programming languages. On the other hand, the four core courses in Term 1 will provide the foundational knowledge in applied AI and Analytics, where engagements/learnings will be supplemented with tutorials, workshops and course-related support from teaching assistants. Similar resources and support will be available in subsequent terms, and for every course being offered in the proposed program. Furthermore, instructors teaching in the program and senior doctoral students conducting tutorials and serving as teaching assistants will be available to provide mentoring to support learners needing additional help.

The MM, AI&A program will schedule and offer bridging modules or preparatory courses for candidates from less technical backgrounds, which students would be expected to complete before the start of the program.

Recommendation 2- Ensure program sustainability: establish a balance between sessional and tenure/tenured-track faculty roles to maintain academic consistency and plan for long-term faculty engagement.

Response: The DeGroote School of Business (DSB) has an extensive faculty complement with over 30 members with demonstrated research/teaching expertise in applied AI and Analytics, and they will play a key role in delivering majority of the courses in the MM, AI&A program. In addition, the program leadership has received commitments from industry partners to contribute to the educational mission of the program by teaching and co-teaching. The latter form of engagement is important to communicate the latest advancements from the industry to the next generation of analytics/applied AI professionals being trained in the academic sector. The teaching/co-teaching by industry professionals will be limited to a couple of courses, however, the program leaders do envision inviting them as guest speakers in several courses. Doing so will foster a two-way communication between the industry and the academia.

Recommendation 3- Expand global and interdisciplinary perspectives: introduce international case studies and collaborative projects to broaden the curriculum's scope.

Response: Case studies will be motivated by real problems in the industry and will make use of real/simulated data related to diverse types of managerial problems. In addition, instructors will be encouraged to research and identify/develop case studies that reflect a diverse range of functional areas of business and drawn from different parts of the world. It is important that several courses have group projects that will cut across functional areas/disciplines thereby letting learners apply the skills and knowledge in an interdisciplinary setting. For instance, a group project could require students to analyze a case study from an information systems and health management perspectives thereby necessitating interdisciplinary investigation.

Recommendation 4- Strengthen assessment strategies: implement transparent rubrics for experiential components and expand post-graduation metrics to include alumni and employer feedback for continuous improvement.

Response: Student self-reflection reports is an important assessment component of the Industry Practicum and the Internship. It is important to note that the self-reflection exercise during the Practicum will enable learners to document their questions, challenges and insights, which in turn will allow instructors to monitor and aid learner's progress. The Career and Professional Development (CPD) team at DSB currently uses a comprehensive Student Reflection and Evaluation Form in the MBA Co-op program that seeks input from the employers and then asks students to reflect on their internship experience, and how it has helped them. The MM, AI&A program will adapt this template while ensuring that experiential learning components focus on providing constructive feedback as a mechanism to reinforce program learning goals. Since the intention of the experiential components is to contribute to creating an environment in which learners can cultivate experience and confidence while they practice skills and capacities learned in the previous two terms, it is not graded on a scale but instead marked as complete or incomplete.

The MM, AI&A Program Curriculum Committee will ensure high-quality of the curriculum through several steps including feedback from students, alumni and employer partners; and post-graduation surveys conducted at different time epochs following graduation from the program (6 months; 1 year and 3 years). The Program Management Team comprised of the director and the manager will collect the above information and share them with the curriculum committee to inform regular program and curriculum updates.

Recommendation 5- Support for diverse learners: offer tailored academic support, flexible re-entry pathways for leave-taking students, and targeted mentorship programs.

Response: Details around tailored academic support has been discussed in response to Recommendation 1, and hence is not repeated here.

The MM, AI&A is a cohort-based program, and the courses in subsequent terms build on the learnings attained from previously completed terms. Thus, the proposed structure is amenable if the re-entry takes place in the term immediately following the terms completed before taking leave.

The MM, AI&A Program Curriculum Committee, chaired by the Program Director, is committed to working closely with McMaster University's Student Accessibility Services (SAS) office to adapt course materials to meet individual needs of the students. In addition, the program will ensure that industry leaders who are working with learners as guest speakers, practicum partners, or co-instructors have completed the necessary accessibility training.

The MM, AI&A program received commitment from industry partners expressing enthusiasm to contribute to the educational mission, and this can be through guest lectures, teaching or co-teaching courses, contributing educational materials, and being available for informal chats and mentoring sessions. The program will organize informal events and formal sessions to create networking opportunities for participants, and for matching them with other alumni with similar interests and/or industry affiliations.

Recommendation 6- Address program flexibility: create alternate pathways for students deviating from the ideal trajectory, including options for remedial courses and tailored scheduling.

Response: The MM, AI&A is a cohort-based program, and the courses in subsequent terms build on the learnings of the previous term. However, as is currently the case in other DSB programs such as MBA and Master of Finance, options to remedy failed courses exist as per the School of Graduate Studies guidelines. This includes repeating the failed course, while permitting students to take subsequent courses. In addition, if needed and on a case-by-case basis, students are allowed to take equivalent courses in the neighbouring schools accessible via the Ontario Visiting Graduate Student (OVGS) program. These alternate pathways will also exist for the MM, AI&A program.

Recommendation 7- Continuous feedback: implement structured partner and stakeholder feedback mechanisms to ensure the curriculum evolves with industry needs.

Response: Consistent with DSB Strategic Plan to keep courses up to date, and as indicated in response to Recommendation 4, the academic quality of MM, AI&A program will be maintained through an extensive feedback mechanism that will seek ongoing inputs from students, alumni, employer partners, external advisory board, etc. The Program Management Team will collect the above information and share them with the curriculum committee to inform regular program and curriculum updates. In addition, the program has received commitment from industry partners who will contribute to the educational mission by serving as guest speakers, instructors, and mentors, all of which will also ensure that the curriculum stays current with industry needs.

Recommendation 8- Revising the curriculum: The program development team is encouraged to dedicate additional time reviewing the curriculum to identify opportunities for enhancement. This process should involve exploring whether the curriculum could be strengthened by adding new courses, removing less relevant ones, or revising existing courses to better align with the program's objectives and industry demands.

Response: The APDC had conducted extensive consultation with industry leaders/employer partners who provided inputs on the curriculum of the proposed MM, AI&A program, researched other business schools and their offerings, and solicited inputs from other stakeholders when

developing the proposed program. It is important that MM, AI&A program is housed in DeGroote School of Business, and hence the slate of courses and their contents reflect that. More specifically, while MM, AI&A program will provide participants with the skills and knowledge in applied AI and data-driven decision-making, the application will be in the business/management domain.

Based on the inputs of the review panel, a number of changes are being made to the MM, AI&A program, and they are being outlined below and appear as italicized for clarity.

1. Two new courses are being proposed to replace existing courses in Term 1.
 - *Data Analytics using Python* will replace Predictive Analytics for Business.
 - *Multivariate Statistics for Business Decision-Making* will replace Data-Driven Project Management.
2. Name and content of one Term 2 course has been updated.
 - *Communication, Leadership and Change Management* replaces the earlier title of Leadership & Change Management in AI and Analytics.
3. Two program learning outcomes have been updated/re-written.
 - PLO#3: Demonstrate *communication*, critical thinking, and *presentation skills*.
 - PLO#4: *Employ applied AI and Analytics tools to projects across different functional areas and industries*.

Response to Additional Report Commentary:

Recommendation: On Pages 8 and 22, the review panel expressed “...confusion about the nature of the review from the perspective of having one program with two formats or two independent programs with the same name.....”

Response: The DeGroote School of Business (DSB) is proposing two distinct new graduate programs in applied AI and Analytics, which are moving through the approval stages simultaneously. The reviewers were presented with two separate proposals. The feedback noted in the report highlighted the need for DSB to clarify the distinction between the two proposals. More specifically, the reviewers suggested distinct program names, slates of courses, and program learning outcomes.

Acknowledging the confusion similar names for the proposed programs has caused, the program development committee has changed the name of the part-time program to *Master of Applied AI and Data-Driven Decision-Making (MAIDM)*, while the full-time program being proposed is called *Master of Management in AI and Analytics (MM, AI&A)*. The part-time program is referenced on Page 6 of the full-time program proposal document, and its distinctive details are outlined on Page 28. Furthermore, to better distinguish the slate of courses and program learning outcomes, changes and/or updates have been made as outlined in response to Recommendation 8.

The proposed *Master of Management in AI and Analytics (MM, AI&A)* program offers an experientially focused core curriculum centered on the gathering, processing and interpretation of data, which will be coupled with a wide selection of elective courses to allow students to tailor their program towards specific fields and career paths. This 16-month pre-experience full-time professional master's program will provide participants with experiential training on how state-of-the-art quantitative models and analytics methods together with leading software packages and programming languages can be used to organize, process, analyze, and interpret data to make informed business decisions. The program will consist of twelve courses (nine required and three electives), a two-term Industry Practicum and a one-term Internship. All the courses will be delivered by faculty members and industry professionals with expertise in different aspects of

applied AI and analytics and will incorporate the cutting-edge resources available through two new Learning Hubs: Data Analytics and AI; and Sales & Marketing Analytics, which will become operational in McLean Centre for Collaborative Discovery (MCCD) at McMaster University in early 2026.

The curriculum is designed to deliver a set of core skills in analytics and applied AI while allowing students flexibility to choose functional area(a) to apply these skills. Both the Industry Practicum and the Internship components will allow students to gain a deeper understanding of specific industries or functional areas of business from the perspective of analytics and applied AI. The three elective courses will also allow students to focus on specific functional areas in their application of analytics, such marketing, finance, health care, operations management, human resources, and information systems. This focused yet flexible curriculum will provide students with both breadth and depth of knowledge in analytics and applied AI. Through their course of study, students will cultivate valuable skills and experience, enabling them to make important contributions to their chosen fields, as well as provide them with the contextual understandings they need to remain abreast of new developments in the rapidly changing realms of data, applied AI, and analytics.

Admission & Enrolment: The review panel suggested “consider offering bridging modules or preparatory courses for candidates from less technical backgrounds, ensuring they meet prerequisites in mathematics, programming, or analytics”.

Response: The requirements outlined on Page 33 of the proposal are consistent with McMaster University’s general admissions requirements for master’s program. However, as indicated on Page 32 of the proposal, students from other backgrounds or without the necessary course prerequisites will be considered based on their professional CV, personal essays and recorded video interviews. In addition, Phase 1 of the Industry Practicum is intentioned to provide students with the opportunity to work on building upon their foundational knowledge in mathematics, statistics and computer programming. Furthermore, the program will schedule and offer bridging modules or preparatory courses for candidates from less technical backgrounds, which students would be expected to complete before the start of the program.

Structure: The review panel suggested “distributing elective courses across earlier semesters” and “improvements to the program structure by creating pathway to the PhD Program, Fast-Track Option and Combined Programs”.

Response: Terms 1 and 2 of the MM, AI&A program will cover the foundational materials in applied AI and Analytics thereby providing the skills and knowledge needed to derive the maximum benefit from the Internship in Term 3. It is not reasonable to expect students to have the required skills and knowledge to absorb the more complex and focused materials delivered in an elective course before completing the foundational materials, and hence the choice to keep electives in Term 4.

DSB is interested in creating the pathway to PhD program and combined programming options, and they would be explored following successful launch of the MM, AI&A program. This program can be completed in 1-year if a student foregoes Internship, which in this proposal is a required part of the curriculum and one of the unique differentiators of the MM, AI&A program. However, given the resource implications resulting from duplicate course offerings, an alternative version of the program without internship will be explored after the proposed MM, AI&A program reaches steady state.

Curriculum and Teaching: The review panel suggested “incorporating programming course and a culminating project” and “adjustments to the curriculum”.

Response: 5 of the 9 required courses in the proposed MM, AI&A program will use programming languages such as Python and R; and 3 of the 9 required courses will use visualization, simulation and optimization packages such as Tableau, Mathematica, Arena, Analytic Solver, and Excel. Phase 1 of the Industry Practicum in Term 1, and the workshops/bootcamps before the start of the program would be additional opportunities for students to work on foundational skills in computer programming, mathematics and statistics. Most courses would have a group project where managerial questions in different functional areas and various industries would be investigated. In addition, the 2-term Industry Practicum followed by the Internship would provide sufficient opportunities for experiential learning by working on real/realistic industry problems.

In Term 4, each student would be required to participate in a poster event that would be a reflection exercise recounting their journey over the past year, and will encompass learnings from academic work, group projects, industry practicums, and internship. Given that all the above engagements are in the realm of Applied AI and Analytics, it is difficult to ascertain the incremental benefits of a culminating project unlike in an MBA program where a capstone course/project brings together the learnings from courses taken in different functional areas. However, some adjustments have been made to the curriculum as outlined in response to Recommendation 8.

Assessment of Learning: The review panel suggested “implementing assessment rubrics tied to learning outcomes”, “including longitudinal alumni tracking”, and “revised learning outcomes”.

Response: The format of assessment in the 9 required and 3 elective courses in the MM, AI&A program has been outlined in the proposal document, and the requisite rubric tied to learning outcomes will be developed together with the course curricula.

The Program Management Team will collaborate with the faculty to conduct review, collect feedback from students, graduates (once alumni data become available), DSB Leadership and industry partners. This information will be shared with DSB leadership and the program curriculum committee to ensure that the curriculum, profile and community partnerships are furthering the program learning outcomes.

The Analytics Program Development Committee (APDC) had worked closely with the educational developer’s team from MacPherson Institute of Leadership, Innovation and Excellence in Teaching at McMaster University to develop the program learning outcomes. The knowledge and expertise of the educational developers ensured that the perspectives of various stakeholders participating in the brainstorming session was captured and, most importantly, the resulting program learning outcomes were meeting the ‘Create’ level of Bloom’s Taxonomy and the graduate degree level expectations. For the context, a copy of Expanded Bloom’s Taxonomy originally adapted by the University of Iowa Center for Teaching is attached to this response document as Appendix A, and a copy of the Graduate Degree Level Expectations set by the Ontario Council of Academic Vice Presidents’ and as included in the McMaster New Program Guidebook is attached to this response as Appendix B.

Appendix A

Expanded Taxonomy of Learning

Taxonomy	Definition	Related LEARNING VERBS	What the Student Does	What the Teacher Does	Assessments
Remember	Recall specific bits of information	Tell, list, describe, name, repeat, remember, recall, identify, state, select, match, know, locate, report, recognize, observe, choose, who, what, where, when, cite, define, indicate, label, memorize, outline, record, relate, reproduce, underline	Responds Absorbs Remembers Recognizes	Directs Tells Shows Examines	Students recognize, recall or find information.
Understand	Construct meaning from information	Explain, restate, find, describe, review, relate, define, clarify, illustrate, diagram, outline, summarize, interpret, paraphrase, transform, compare similarities and differences, derive main idea, arrange, convert, defend, discuss, estimate, extend, generalize, give examples, locate, report, translate	Explains Translates Demonstrates Interprets Summarizes	Demonstrates Listens Questions Compares Examines	Students organize previously learned material, rephrase it, describe it in their own words, use it for making comparisons, change from one form of representation to another.
Apply	Use methods, concepts, principles, and theories in new situations	Apply, practice, employ, solve, use, demonstrate, illustrate, show, report, paint, draw, collect, dramatize, classify, put in order, change, compute, construct, interpret, investigate, manipulate, modify, operate, organize, predict, prepare, produce, schedule, sketch, translate	Solves novel problems Demonstrates Uses knowledge constructs	Shows Facilitates Observes Criticizes	Students use previously learned information in order to solve a problem or to complete familiar or unfamiliar tasks.
Analyze	Identify how parts relate to one another or to a larger structure/purpose	Analyze, dissect, detect, test, deconstruct, discriminate, distinguish, examine, focus, find coherence, survey, compare, contrast, classify, investigate, outline, separate, structure, categorize, solve, diagram, determine evidence and conclusions, appraise, break down, calculate, criticize, debate, experiment, identify, illustrate, infer, inspect, inventory, question, relate, select	Discusses Uncovers Lists Dissects Compares and contrasts	Probes Guides Observes Acts as a resource	Students will 1) identify reasons, causes, & motives; 2) consider available evidence to reach a conclusion, inference or generalization; 3) analyze a conclusion, inference or generalization to find supporting evidence.
Evaluate	Judge the value of something based on criteria, processes, or standards	Coordinate, judge, select/choose, decide, debate, evaluate, justify, recommend, verify, monitor, measure, the best way, what worked, what could have been different, what is your opinion, test, appraise, assess, compare, conclude, contrast, criticize, discriminate, estimate, explain, grade, interpret, rate, relate, revise, score, summarize, support, value	Judges Disputes Forms opinions	Accepts Lays bare the criteria Harmonizes	Students judge the merit and value of an idea, a solution to a problem, an aesthetic work, etc.
Create	Generate a coherent functional whole; recognize new patterns	Create, hypothesize, design, construct, invent, imagine, discover, present, deduce, induce, bring together, compose, pretend, predict, organize, plan, modify, improve, suppose, produce, set up, what if, propose, formulate, solve (more than one answer), arrange, assemble, categorize, collect, combine, devise, explain, generate, manage, perform, prepare, rearrange, reconstruct, relate, reorganize, revise, argue for	Generate Hypothesize Plan Design Produce Construct Argues	Reflects Extends Analyzes Evaluates	Students will 1) produce original work or communication; 2) make predictions; 3) solve problems; 4) invent, hypothesize, devise a procedure; argue for a position; present a work of art or music to be judged

Adapted from L. W. Anderson and D. R. Krathwohl (eds). *A Taxonomy for Learning, Teaching and Assessing* (based on Bloom's Taxonomy), 2001.
Retrieved 1/15/08 from <http://www.ntlf.com/Library/Expanded%20Taxonomy%20of%20Learning.doc>

Appendix B

GRADUATE DEGREE LEVEL EXPECTATIONS

	MASTER'S DEGREE <i>This degree is awarded to students who have demonstrated:</i>	DOCTORAL DEGREE <i>This degree extends the skills associated with the Master's degree and is awarded to students who have demonstrated:</i>
1. Depth and Breadth of Knowledge	A systematic understanding of knowledge, and a critical awareness of current problems and/or new insights, much of which is at, or informed by, the forefront of the academic discipline, field of study, or area of professional practice.	A thorough understanding of a substantial body of knowledge that is at the forefront of their academic discipline or area of professional practice.
2. Research and Scholarship	A conceptual understanding and methodological competence that: i) Enables a working comprehension of how established techniques of research and inquiry are used to create and interpret knowledge in the discipline; ii) Enables a critical evaluation of current research and advanced research and scholarship in the discipline or area of professional competence, and iii) Enables a treatment of complex issues and judgments based on established principles and techniques; and, On the basis of that competence, has shown at least one of the following: i) The development and support of a sustained argument in written form, or ii) Originality in the application of knowledge.	a. The ability to conceptualize, design, and implement research for the generation of new knowledge, applications, or understanding at the forefront of the discipline, and to adjust the research design or methodology in the light of unforeseen problems; b. The ability to make informed judgments on complex issues in specialist fields, sometimes requiring new methods; and c. The ability to produce original research, or other advanced scholarship, of a quality to satisfy peer review, and to merit publication;
3. Application of Knowledge	Competence in the research process by applying an existing body of knowledge in the critical analysis of a new question or of a specific problem or issue in a new setting.	The capacity to: i) Undertake pure and/or applied research at an advanced level; and ii) Contribute to the development of academic or professional skills, techniques, tools, practices, ideas, theories, approaches, and/or materials;
4. Communication Skills	The ability to communicate ideas, issues and conclusions clearly.	The ability to communicate complex and/or ambiguous ideas, issues and conclusions clearly and effectively.
5. Awareness of Limits of Knowledge	Cognizance of the complexity of knowledge and of the potential contributions of other interpretations, methods, and disciplines.	An appreciation of the limitations of one's own work and discipline, of the complexity of knowledge, and of the potential contributions of other interpretations, methods, and disciplines.
6. Autonomy and Professional Capacity	a. The qualities and transferable skills necessary for employment requiring i) The exercise of initiative and of personal responsibility and accountability; ii) Decision-making in complex situations; and b. The intellectual independence required for continuing professional development; c. The ethical behaviour consistent with academic integrity and the use of appropriate guidelines and procedures for responsible conduct of research; d. The ability to appreciate the broader implications of applying knowledge to particular contexts.	a. The qualities and transferable skills necessary for employment requiring the exercise of personal responsibility and largely autonomous initiative in complex situations; b. The intellectual independence to be academically and professionally engaged and current; c. The ethical behaviour consistent with academic integrity and the use of appropriate guidelines and procedures for responsible conduct of research; and d. The ability to evaluate the broader implications of applying knowledge to particular contexts.

April 3, 2025

Dr. Steve Hranilovic
Vice-Provost and Dean of Graduate Studies
Gilmour Hall, 212, McMaster University
1280 Main St. West
Hamilton, ON L8S 4K1

Re: Master of Management in AI and Analytics

Dear Steve,

I would like to thank the review panel comprised of Dr. Ignacio Castillo (Wilfrid Laurier University), Dr. Amir Gharegozli (California State University) and the internal member Dr. Zoe Li (Civil Engineering, McMaster University) for their thorough and comprehensive review of the proposed *Master of Management in AI and Analytics* program in DeGroote School of Business. I agree with their assessment of the program strengths including offering well-structured offering of courses reflective of the current state of AI and Analytics, incorporating experiential learning and industry relevant skills, and delivering high-quality education thereby meeting learner needs. I have reviewed the program team's response to the review report and am confident that they are appropriately addressing the recommendations leading to program's launch. Thus, I will focus on the overall commentary of the report.

The reviewers indicated that there is some confusion as to whether f one program with two formats or two independent programs are being proposed because of similar names, which I would like to clarify. The DeGroote School of Business is developing two new distinct graduate programs in applied AI and Analytics in parallel: (i) a full-time pre-experience program targeted at students with little or no work experience (the subject of this memo); and (ii) a blended-learning part-time program targeted at early to mid-career working professionals. I am glad to note that the program team has taken steps to address the reviewer's concerns by changing the name of the part-time program to Master of Applied AI and Date-Driven Decision Making thereby making it more distinctive from the full-time offering called *Master of Management in AI and Analytics*; creating slate of courses that are different for the two programs and influenced by the needs of the audience of each individual program; and updating the courses' content and assessment methods, where appropriate, to inform the learning outcomes for each program.

I agree with the reviewers about offering bridging modules or preparatory courses for candidates from less technical backgrounds and ensure that such students complete these modules before the beginning of the program. The reviewers also suggested improvements to program structure by creating pathways to the other DeGroote programs, which is consistent with our strategy of leveraging existing resources/expertise to create more opportunities/possibilities for students.

Once again, I thank the reviewers for their comprehensive report. I thank the program team for developing the proposals and for a thorough response to the reviewer report. I am confident that this exciting pre-experience program in Applied AI and Analytics will be a successful addition to the excellent line-up of graduate programs in DeGroote School of Business at McMaster University. Finally, I thank the staff in the School of Graduate Studies for their significant support in co-ordinating the review of the proposed program.

Sincerely,

A handwritten signature in dark ink, appearing to read 'Khaled Hassanein', written in a cursive style.

Khaled Hassanein
Dean, DeGroote School of Business

cc: Christina Bryce, Assistant Graduate Secretary
Stephanie Baschiera, Associate Registrar and Graduate Secretary

Master of Applied AI and Data-Driven Decision Making

External Review
Program Response

April 3, 2025

On behalf of the Analytics Program Development Committee (APDC) for the *Master of Applied AI and Data-Driven Decision Making* (MAIDM) graduate program, we are appreciative of the review panel's time and expert assessment of the program.

The review panel noted a number of strengths in the proposed program, and it was encouraging to note that the panel appreciates “*well-structured offering that reflects the current state of AI and Analytics*”, acknowledges “*program effectively accommodates two distinct learner groups*”, endorses “*experiential learning, ethical considerations, and industry relevant skills*”, and underscores “*program is poised to deliver high-quality education and meet learner needs*”.

The review panel also identified opportunities for improvement that are outlined in eight recommendations. In addition to responding to the eight recommendations, further details are being added to this narrative response based on a follow-up meeting between the School of Graduate Studies and the review panel. The most significant feedback was the suggestion to differentiate this proposal from the companion proposal of the Master of Management in AI and Analytics (MM, AI&A) program.

We welcomed this feedback and convened an additional meeting with the Reviewers and the Vice-Provost and Dean of the School of Graduate Studies and the Senior Associate Registrar and Graduate Secretary to present our proposed response to this to ensure the differentiation was clearer. We recognize that bringing two proposals through Governance at the same time requires this extra step to ensure that we have clearly communicated our intentions, and that the quality of both programs can be reviewed appropriately.

Response to Recommendations:

Recommendation 1- Enhance support for diverse learners: develop foundational workshops, peer mentoring and adaptive learning technologies to support learners from less technical backgrounds and ensure quality learning outcomes.

Response: The MAIDM program is aimed at early-to-mid-career professionals with at least four years of work experience who desire to effectively incorporate applied AI and Analytics in business and managerial decision-making processes. This cohort-based program will run over 20 months or 5 terms and will offer 2 required courses every term. Learning and engagement in each course will be supplemented with tutorials, workshops and course-related support from teaching assistants. Furthermore, instructors teaching in the program and senior doctoral students conducting tutorials and serving as teaching assistants will be available to provide mentoring to support learners needing additional help.

The MAIDM program will schedule and offer bridging modules or preparatory courses (in-person or online) for candidates from less technical backgrounds, which students would be expected to complete before the start of the program.

Recommendation 2- Ensure program sustainability: establish a balance between sessional and tenure/tenured-track faculty roles to maintain academic consistency and plan for long-term faculty engagement.

Response: The DeGroote School of Business (DSB) has an extensive faculty complement with over 30 members with demonstrated research/teaching expertise in applied AI and Analytics, and they will play a key role in delivering majority of the courses in the proposed program. In addition, the program leadership has received commitments from industry partners to contribute to the educational mission of the program by teaching and co-teaching. Teaching/co-teaching by industry professionals will be limited to a couple of courses, however, the program leaders do envision inviting them as guest speakers in several courses. Doing so will foster a two-way communication between the industry and the academia.

Recommendation 3- Expand global and interdisciplinary perspectives: introduce international case studies and collaborative projects to broaden the curriculum's scope.

Response: Case studies will be motivated by real problems in the industry and will make use of real/simulated data related to diverse types of managerial problems. In addition, instructors will be encouraged to research and identify/develop case studies that reflect a diverse range of functional areas of business and drawn from different parts of the world. It is important that several courses have group projects that will cut across functional areas/disciplines thereby letting learners apply the skills and knowledge in an interdisciplinary setting. For instance, a group project could require students to analyze a case study from an information systems and health management perspectives thereby necessitating interdisciplinary investigation.

Recommendation 4- Strengthen assessment strategies: implement transparent rubrics for experiential components and expand post-graduation metrics to include alumni and employer feedback for continuous improvement.

Response: The experiential components in the MAIDM program are within individual courses and would take the form of reflection reports in two courses and case studies/group projects in most other core courses. Reflection report is intended to give participants an opportunity to reflect on the course materials, personal insights and supplementary investigations, and will be built upon the skills and knowledge gained in previous courses. Case studies on the other hand will provide opportunities to apply learnings in Applied AI and data-driven methodologies in different courses to various contexts. Instructors will be encouraged to adapt the template from the existing blended-learning part time MBA Program while ensuring that experiential learning assessments focus on providing constructive feedback as a mechanism to reinforce program content. Each course outline will contain the rubric used for evaluating the experiential components.

The MAIDM Program Curriculum Committee will ensure high-quality of the curriculum through several steps including feedback from students, alumni and employer partners; and post-graduation surveys conducted at different time epochs following graduation from the program (6 months; 1 year and 3 years). The Program Management Team comprised of the director and the manager will collect the above information and share them with the curriculum committee to inform regular program and curriculum updates.

Recommendation 5- Support for diverse learners: offer tailored academic support, flexible re-entry pathways for leave-taking students, and targeted mentorship programs.

Response: Details around tailored academic support has been discussed in response to Recommendation 1 and hence is not repeated here.

The MAIDM program is cohort-based, however, the proposed structure is amenable to flexible re-entry pathways and thus can support leave-taking students to re-enter when ready. In addition, to support such cases, the program will also let participants avail themselves of the Ontario Visiting Graduate Student (OVGS) program thereby enjoying greater flexibility.

The MAIDM Program Curriculum Committee, chaired by the Program Director, will work closely with McMaster University's Student Accessibility Services (SAS) office to adapt course materials to meet individual needs of the students. In addition, the program will ensure that industry leaders who are working with learners are guest speakers, or co-instructors have completed the necessary accessibility training.

The MAIDM program has received commitment from industry partners determined to contribute to the educational mission, and this can be through guest lectures, teaching or co-teaching courses, contributing educational materials, and being available for informal chats and mentoring sessions. The program will organize informal events and formal sessions during residency weekends to create networking opportunities for participants, and for matching them with other alumni with similar interests and/or industry affiliations.

Recommendation 6- Address program flexibility: create alternate pathways for students deviating from the ideal trajectory, including options for remedial courses and tailored scheduling.

Response: The MAIDM program, just like other DSB programs, will offer the option to remedy failed courses as per the School of Graduate Studies guidelines. The remedial options would enable students to repeat the failed course while allowing them to take courses in subsequent term(s), and if needed on a case-by-case basis, to take equivalent courses in neighbouring schools accessible via the Ontario Visiting Graduate Student (OVGS) program to ensure student progress is not delayed.

Recommendation 7- Continuous feedback: implement structured partner and stakeholder feedback mechanisms to ensure the curriculum evolves with industry needs.

Response: Consistent with the DSB Strategic Plan to keep courses up to date, and as indicated in response to Recommendation 4, the academic quality of the MAIDM program will be maintained through an extensive feedback mechanism that will seek ongoing inputs from students, alumni, employer partners, external advisory board, etc. The Program Management Team will collect the above information and share them with the curriculum committee to inform regular program and curriculum updates. In addition, the program has received commitment from industry partners who will contribute to the educational mission by serving as guest speakers, instructors, and mentors, all of which will also ensure that the curriculum stays current with industry needs.

Recommendation 8- Revising the curriculum: The program development team is encouraged to dedicate additional time reviewing the curriculum to identify opportunities for enhancement. This process should involve exploring whether the curriculum could be strengthened by adding new courses, removing less relevant ones, or revising existing courses to better align with the program's objectives and industry demands.

Response: The APDC had conducted extensive consultation with industry leaders/employer partners who provided inputs on the curriculum of the proposed MAIDM program, researched other business schools and their offerings, and solicited inputs from other stakeholders when developing the proposed program. It is important that the MAIDM program is housed in DeGroote School of Business, and hence the slate of courses and their contents reflect that. More specifically, while the MAIDM program will provide participants with the skills and knowledge in applied AI and data-driven decision-making, the application will be in the business/management domain.

Based on the inputs of the review panel, several changes are being made to the MAIDM program, and they are being outlined below and appear as italicized for clarity.

1. Name of the program has been changed to *facilitate* better positioning and distinction from the full-time program in applied AI and analytics being proposed simultaneously.

- *Master of Applied AI and Data-Driven Decision-Making* from the earlier name (Master of Management in AI and Analytics – Blended Learning Part Time).
2. Names and contents of five courses are being updated.
 - *Predictive Analytics for Managers* replaces the earlier title of Predictive Analytics for Business.
 - *Managing AI and Analytics Projects* will replace Data-driven Project Management.
 - *Strategic Leadership in AI and Analytics* replaces the earlier title of Leadership & Change Management in AI and Analytics.
 - *Prescriptive Analytics for Managers* replaces the earlier title of Prescriptive Analytics for Business.
 - *Governance, Ethics and Compliance in AI and Analytics* replaces the earlier title of Ethics & Regulatory Frameworks in AI and Analytics.
 3. All seven program learning outcomes have been updated/re-written.
 - PLO#1: Develop a basic understanding of applied AI and *data-driven decision-making techniques* for business and organizational decision-making.
 - PLO#2: Exhibit the ability to interpret outputs/solutions resulting from AI and *data-driven applications* and identify business value.
 - PLO#3: Demonstrate *leadership*, communication, *and* critical thinking.
 - PLO#4: Develop leadership strategies for managing *data-driven* and applied AI projects, and teams.
 - PLO#5: Evaluate ethical, *legal and regulatory aspects of applied AI and data-driven decision making*.
 - PLO#6: Assess new developments in the application of applied AI and *data-driven decision making*.

Response to Additional Report Commentary:

Recommendation: On Pages 8 and 22, the review panel expressed “...confusion about the nature of the review from the perspective of having one program with two formats or two independent programs with the same name.....”

Response: The DeGroote School of Business (DSB) is proposing two distinct new graduate programs in applied AI and Analytics, which are moving through the approval stages simultaneously. The reviewers were presented with two separate proposals. The feedback noted in the report highlighted the need for DSB to clarify the distinction between the two proposals. More specifically, the reviewers suggested distinct program names, slates of courses, and program learning outcomes.

Acknowledging the confusion similar names for the proposed programs has caused, the program development committee has changed the name of the part-time program being proposed here to *Master of Applied AI and Data-Driven Decision-Making (MAIDM)*. The reference to the full-time program called *Master of Management in AI and Analytics* is made on Page 6 of the part-time program proposal document, and its distinct details are outlined on Page 21. Furthermore, to better distinguish the slate of courses and program learning outcomes, changes and/or updates have been made as outlined in response to Recommendation 8.

The proposed *Master of Applied AI and Data-Driven Decision-Making (MAIDM)* program is a professional degree aimed at early-to-mid-career professionals with at least four years work experience who desire to effectively incorporate applied AI and analytics in business and managerial decision-making processes. To accommodate working professionals, the program's blended delivery approach will consist of 10 courses, each delivered over three intensive face-to-face weekend residency sessions combined with weekly technology-enabled learning

requirements. Approximately 70% of the instructional hours will take place during the three residency sessions and the synchronous online sessions spread over each semester. The curriculum will focus on applications of AI and data-driven decision-making techniques, leadership and communication skills for real-world problems. Delivered at the DeGroote School of Business' Jon Royce Centre in Burlington, Ontario. The 20-month curriculum will provide an accessible, innovative, and practical program that meets the needs of working professionals from a wide range of fields.

Admission & Enrolment: The review panel suggested “explicit guidelines for assessing the equivalency of professional experience to academic prerequisites would enhance transparency and consistency”.

Response: The requirements outlined on Page 24 of the proposal are consistent with McMaster University's general admissions requirements for part-time master's program. However, four of the six admissions components (recorded video interviews; essay; reference letters; and professional CV) provide an opportunity for applicants to provide rationale for a sub-par academic transcript, which would indeed be considered by the admissions committee. Given the range of professional experience of applicants, explicitly outlining all possible equivalencies would undermine the envisioned flexibility.

Structure: The review panel suggested “offering modular or asynchronous course options that would enhance flexibility” and “incorporating periodic check-ins or career-focused advising that would support learners”.

Response: The MAIDM program has a blended learning format wherein each course would have in-person residency sessions, synchronous sessions, and some asynchronous modules. To accommodate extenuating circumstances, the program will consider recording the in-person residency and synchronous sessions. The Program Management Team will be responsible for periodic check-in with the students, and in-person interactions during the residency sessions. Some residency weekends would include events focused on sharing professional experiences, and networking events involving employer partners, alumni and members of the DeGroote Career and Professional Development.

Curriculum and Teaching: The review panel suggested “incorporating programming course and a culminating project” and “adjustments to the curriculum”.

Response: The MAIDM program is aimed at early-to-mid-career professionals with at least four years work experience who desire to effectively incorporate applied AI and analytics in business and managerial decision-making processes. Students with this profile are generally managing teams of analysts/ analytics professionals who in turn would be responsible for tasks related to data management, computer programming, and output generation. Hence, the focus of the curriculum on applications of AI and analytics techniques, leadership and communication skills for real world problems is appropriate. However, some adjustments addressing this concern have been made to the curriculum as outlined in response to Recommendation 8.

Assessment of Learning: The review panel suggested “implementing assessment rubrics tied to learning outcomes”, “including longitudinal alumni tracking”, and “revised learning outcomes”.

Response: The format of assessment in the 10 required courses in the MAIDM program has been outlined in the proposal document, and the requisite rubric tied to learning outcomes will be developed together with the course curricula.

The Program Management Team will collaborate with the faculty to conduct a review, collect feedback from students, graduates (once alumni data become available), DSB Leadership and industry partners. This information will be shared with DSB leadership and the program curriculum committee to ensure that the curriculum, profile and community partnerships are furthering the program learning outcomes.

The Analytics Program Development Committee (APDC) had worked closely with the educational developer's team from MacPherson Institute of Leadership, Innovation and Excellence in Teaching at McMaster University to develop the program learning outcomes. The knowledge and expertise of the educational developers ensured that the perspectives of various stakeholders participating in the brainstorming session was captured and, most importantly, the resulting program learning outcomes were meeting the 'Create' level of Bloom's Taxonomy and the graduate degree level expectations. For the context, a copy of Expanded Bloom's Taxonomy originally adapted by the University of Iowa Center for Teaching is attached to this response document as Appendix A, and a copy of the Graduate Degree Level Expectations set by the Ontario Council of Academic Vice Presidents' and as included in the McMaster New Program Guidebook is attached to this response as Appendix B.

Appendix A

Expanded Taxonomy of Learning

Taxonomy	Definition	Related LEARNING VERBS	What the Student Does	What the Teacher Does	Assessments
Remember	Recall specific bits of information	Tell, list, describe, name, repeat, remember, recall, identify, state, select, match, know, locate, report, recognize, observe, choose, who, what, where, when, cite, define, indicate, label, memorize, outline, record, relate, reproduce, underline	Responds Absorbs Remembers Recognizes	Directs Tells Shows Examines	Students recognize, recall or find information.
Understand	Construct meaning from information	Explain, restate, find, describe, review, relate, define, clarify, illustrate, diagram, outline, summarize, interpret, paraphrase, transform, compare similarities and differences, derive main idea, arrange, convert, defend, discuss, estimate, extend, generalize, give examples, locate, report, translate	Explains Translates Demonstrates Interprets Summarizes	Demonstrates Listens Questions Compares Examines	Students organize previously learned material, rephrase it, describe it in their own words, use it for making comparisons, change from one form of representation to another.
Apply	Use methods, concepts, principles, and theories in new situations	Apply, practice, employ, solve, use, demonstrate, illustrate, show, report, paint, draw, collect, dramatize, classify, put in order, change, compute, construct, interpret, investigate, manipulate, modify, operate, organize, predict, prepare, produce, schedule, sketch, translate	Solves novel problems Demonstrates Uses knowledge constructs	Shows Facilitates Observes Criticizes	Students use previously learned information in order to solve a problem or to complete familiar or unfamiliar tasks.
Analyze	Identify how parts relate to one another or to a larger structure/purpose	Analyze, dissect, detect, test, deconstruct, discriminate, distinguish, examine, focus, find coherence, survey, compare, contrast, classify, investigate, outline, separate, structure, categorize, solve, diagram, determine evidence and conclusions, appraise, break down, calculate, criticize, debate, experiment, identify, illustrate, infer, inspect, inventory, question, relate, select	Discusses Uncovers Lists Dissects Compares and contrasts	Probes Guides Observes Acts as a resource	Students will 1) identify reasons, causes, & motives; 2) consider available evidence to reach a conclusion, inference or generalization; 3) analyze a conclusion, inference or generalization to find supporting evidence.
Evaluate	Judge the value of something based on criteria, processes, or standards	Coordinate, judge, select/choose, decide, debate, evaluate, justify, recommend, verify, monitor, measure, the best way, what worked, what could have been different, what is your opinion, test, appraise, assess, compare, conclude, contrast, criticize, discriminate, estimate, explain, grade, interpret, rate, relate, revise, score, summarize, support, value	Judges Disputes Forms opinions	Accepts Lays bare the criteria Harmonizes	Students judge the merit and value of an idea, a solution to a problem, an aesthetic work, etc.
Create	Generate a coherent functional whole; recognize new patterns	Create, hypothesize, design, construct, invent, imagine, discover, present, deduce, induce, bring together, compose, pretend, predict, organize, plan, modify, improve, suppose, produce, set up, what if, propose, formulate, solve (more than one answer), arrange, assemble, categorize, collect, combine, devise, explain, generate, manage, perform, prepare, rearrange, reconstruct, relate, reorganize, revise, argue for	Generate Hypothesize Plan Design Produce Construct Argues	Reflects Extends Analyzes Evaluates	Students will 1) produce original work or communication; 2) make predictions; 3) solve problems; 4) invent, hypothesize, devise a procedure; argue for a position; present a work of art or music to be judged

Adapted from L. W. Anderson and D. R. Krathwohl (eds). *A Taxonomy for Learning, Teaching and Assessing* (based on Bloom's Taxonomy), 2001.
Retrieved 1/15/08 from <http://www.ntlf.com/Library/Expanded%20Taxonomy%20of%20Learning.doc>

Appendix B

GRADUATE DEGREE LEVEL EXPECTATIONS

	MASTER'S DEGREE <i>This degree is awarded to students who have demonstrated:</i>	DOCTORAL DEGREE <i>This degree extends the skills associated with the Master's degree and is awarded to students who have demonstrated:</i>
1. Depth and Breadth of Knowledge	A systematic understanding of knowledge, and a critical awareness of current problems and/or new insights, much of which is at, or informed by, the forefront of the academic discipline, field of study, or area of professional practice.	A thorough understanding of a substantial body of knowledge that is at the forefront of their academic discipline or area of professional practice.
2. Research and Scholarship	A conceptual understanding and methodological competence that: i) Enables a working comprehension of how established techniques of research and inquiry are used to create and interpret knowledge in the discipline; ii) Enables a critical evaluation of current research and advanced research and scholarship in the discipline or area of professional competence, and iii) Enables a treatment of complex issues and judgments based on established principles and techniques; and, On the basis of that competence, has shown at least one of the following: i) The development and support of a sustained argument in written form, or ii) Originality in the application of knowledge.	a. The ability to conceptualize, design, and implement research for the generation of new knowledge, applications, or understanding at the forefront of the discipline, and to adjust the research design or methodology in the light of unforeseen problems; b. The ability to make informed judgments on complex issues in specialist fields, sometimes requiring new methods; and c. The ability to produce original research, or other advanced scholarship, of a quality to satisfy peer review, and to merit publication;
3. Application of Knowledge	Competence in the research process by applying an existing body of knowledge in the critical analysis of a new question or of a specific problem or issue in a new setting.	The capacity to: i) Undertake pure and/or applied research at an advanced level; and ii) Contribute to the development of academic or professional skills, techniques, tools, practices, ideas, theories, approaches, and/or materials;
4. Communication Skills	The ability to communicate ideas, issues and conclusions clearly.	The ability to communicate complex and/or ambiguous ideas, issues and conclusions clearly and effectively.
5. Awareness of Limits of Knowledge	Cognizance of the complexity of knowledge and of the potential contributions of other interpretations, methods, and disciplines.	An appreciation of the limitations of one's own work and discipline, of the complexity of knowledge, and of the potential contributions of other interpretations, methods, and disciplines.
6. Autonomy and Professional Capacity	a. The qualities and transferable skills necessary for employment requiring i) The exercise of initiative and of personal responsibility and accountability; ii) Decision-making in complex situations; and b. The intellectual independence required for continuing professional development; c. The ethical behaviour consistent with academic integrity and the use of appropriate guidelines and procedures for responsible conduct of research; d. The ability to appreciate the broader implications of applying knowledge to particular contexts.	a. The qualities and transferable skills necessary for employment requiring the exercise of personal responsibility and largely autonomous initiative in complex situations; b. The intellectual independence to be academically and professionally engaged and current; c. The ethical behaviour consistent with academic integrity and the use of appropriate guidelines and procedures for responsible conduct of research; and d. The ability to evaluate the broader implications of applying knowledge to particular contexts.

April 3, 2025

Dr. Steve Hranilovic
Vice-Provost and Dean of Graduate Studies
Gilmour Hall, 212, McMaster University
1280 Main St. West
Hamilton, ON L8S 4K1

Re: Master of Applied AI and Data-Driven Decision Making

Dear Steve,

I would like to thank the review panel comprised of Dr. Ignacio Castillo (Wilfrid Laurier University), Dr. Amir Gharegozli (California State University) and the internal member Dr. Zoe Li (Civil Engineering, McMaster University) for their thorough and comprehensive review of the proposed *Master of Applied AI and Data-Driven Decision Making (updated title)* program at the DeGroote School of Business. I agree with their assessment of the program strengths including offering well-structured offering of courses reflective of the current state of AI and Analytics, incorporating experiential learning and industry relevant skills, and delivering high-quality education thereby meeting learner needs. I have reviewed the program team's response to the review report and am confident that they are appropriately addressing the recommendations leading to program's launch. Thus, I will focus on the overall commentary of the report.

The reviewers indicated that there is some confusion as to whether f one program with two formats or two independent programs are being proposed because of similar names, which I would like to clarify. The DeGroote School of Business is developing two new distinct graduate programs in applied AI and Analytics in parallel: (i) a full-time pre-experience program targeted at students with little or no work experience; and (ii) a blended-learning part-time program targeted at early to mid-career working professionals (the subject of this memo). I am glad to note that the program team has taken steps to address the reviewer's concerns by changing the name of the part-time program to *Master of Applied AI and Date-Driven Decision Making* thereby making it more distinctive from the full-time offering called Master of Management in AI and Analytics; creating slate of courses that are different for the two programs and influenced by the needs of the audience of each individual program; and updating the courses' content and assessment methods, where appropriate, to inform the learning outcomes for each program.

I agree with the reviewers about offering bridging modules or preparatory courses for candidates from less technical backgrounds and ensure that such students complete these modules before the beginning of the program. I acknowledge the suggestion of the reviewers about assessing equivalency of professional experience to academic prerequisites and also note the program team response how such mapping would be onerous and possibly undermine flexibility. DeGroote School of Business currently runs two programs targeted at middle and senior level managers,

where professional experience is assessed for each applicant on a customized basis, and I expect the program team to have a similar approach so that equivalent professional experience receives due consideration.

Once again, I thank the reviewers for their comprehensive report. I thank the program team for developing the proposals and for a thorough response to the reviewer report. I am confident that this exciting pre-experience program in Applied AI and Analytics will be a successful addition to the excellent line-up of graduate programs at the DeGroote School of Business at McMaster University. Finally, I thank the staff in the School of Graduate Studies for their significant support in co-ordinating this review of the proposed program.

Sincerely,

A handwritten signature in cursive script, appearing to read 'Khaled Hassanein', written in dark ink.

Khaled Hassanein
Dean, DeGroote School of Business

cc: Christina Bryce, Assistant Graduate Secretary
Stephanie Baschiera, Associate Registrar and Graduate Secretary

Report to the Graduate Council *from the* Joint Committee on Certificates, Diplomas and Microcredentials

FOR APPROVAL

1. New Graduate Academic Certificates

At its meeting on March 4, 2025, the Joint Committee on Certificates, Diplomas and Microcredentials reviewed and approved the following three graduate academic certificates.

- a. Graduate Academic Certificate in Medical Health Physics & Internal Dosimetry
- b. Graduate Academic Certificate in Nuclear Detection, Instrumentation & Methods
- c. Graduate Academic Certificate in Radioactivity and Radiation Interactions

It is now recommended,

that the Graduate Council approve, for recommendation to the University Planning Committee and the Senate, the establishment of the graduate academic certificate in Medical Health Physics & Internal Dosimetry, for inclusion in the 2025-2026 Graduate Calendar, as circulated.

It is also recommended,

that the Graduate Council approve, for recommendation to the University Planning Committee and the Senate, the establishment of the graduate academic certificate in Nuclear Detection, Instrumentation & Methods, for inclusion in the 2025-2026 Graduate Calendar, as circulated.

It is also recommended,

that the Graduate Council approve, for recommendation to the University Planning Committee and the Senate, the establishment of the graduate

academic certificate in Radioactivity and Radiation Interactions, for inclusion in the 2025-2026 Graduate Calendar, as circulated.

FOR INFORMATION

2. Science Leadership Certificate of Completion

At the same meeting, the Joint Committee on Certificates, Diplomas and Microcredentials received the Certificate of Completion in Science Leadership.

This item is for information only.

Graduate Council
For Approval/Information
April 11, 2025

Graduate Certificate Form

Department & Program Information (complete all fields)	
Certificate Name:	Medical Health Physics & Internal Dosimetry
Department	Physics & Astronomy
Name of Representative:	Dr. Alison Sills
Effective Date:	September 1, 2024
Date of Submission:	March 12, 2024
Program Information:	
i) Program Overview	<p><u>Purpose:</u> Nuclear in Canada is an active industry, comprising of work in both the private and public sectors. Properly trained health physicists and technologists are needed to ensure activities such as power generation, medical isotope production, and nuclear research are planned, conducted, and completed safely and successfully.</p> <p>In 2015 and 2016, the Ontario Ministry of Energy committed to refurbishing multiple nuclear reactors in the province, creating a significant demand for qualified professionals in the nuclear industry. In July 2023, Ontario started pre-development work with Bruce Power to build a third generating station to generate an additional 4,800 MW of power. In December 2023, Canada declared, along with other COP28 countries, to triple nuclear energy capacity by 2050 to meet climate change goals.</p> <p>As the province and country commit to cleaner energy practices, the commitment to nuclear power to offset greenhouse gas emissions means there continues to be a thriving market for health physicists and radiation safety professionals. In addition, the resurgence of the growing nuclear workforce coincides with a time where many in industry are reaching retirement age. The Canadian Nuclear Association states that about a third of nuclear workers are expected to retire within the next 10 years. It is imperative that this field replaces these workers and the demand for qualified professionals grows.</p> <p>The Nuclear Safety and Technology Micro-credentials provide the fundamental knowledge required for careers in the nuclear industry. The Graduate Academic Certificate in Medical Health Physics & Internal Dosimetry is one of three graduate</p>

	<p>certificates in the Micro-credential suite and is designed to give the foundational knowledge of the use and safety of ionizing and non-ionizing radiation commonly used in vivo in medicine. This graduate-level micro-credential provides learners with the knowledge to work as Radiation Safety Officers in clinical settings.</p> <p><u><i>Intended Audience:</i></u> This program is designed for individuals looking to enter the nuclear workforce or to provide additional education and training for early-career professionals in industry. This program is an accessible learning opportunity for:</p> <ol style="list-style-type: none"> 1. Recent immigrants – Technical or skilled workers that come to Canada may want careers in nuclear or may have experience in nuclear from their home country. These workers may find that education in the Canadian nuclear landscape may enable them to perform better in their jobs and become more employable in the Canadian labour market. Program content covers the Canadian nuclear regulatory framework, policies, and procedures and this is a major asset in the Canadian nuclear industry. 2. Current students – These micro-credentials are open to current students that may want concurrent credentials to their studies. For example, a civil engineering student may be interested in working for a company constructing new nuclear builds and would like to gain a nuclear micro-credential to be more competitive in the labour market. 3. Recent graduates – Recent graduates from undergraduate or graduate programs may want further credentials to gain employability in the nuclear sector. 4. Indigenous communities - With increasing engagement with and opportunity for Indigenous groups in the nuclear sector, such as the partnership between Bruce Power and the Saugeen-Ojibway Nation to produce the Lu-177 medical isotope, there is a growing need for more Indigenous experts in the field and investment into accessible education could greatly benefit Indigenous professionals.
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	<p><u><i>Concurrent or Standalone:</i></u> While this certificate will be offered and can be completed alone, it is complementary to the full Nuclear Safety & Technology Micro-credential Suite.</p> <p>Completion of the three graduate certificates in the program could be considered for credit toward McMaster's Master of Science in Radiation Science – Health & Radiation Physics</p> <p><u><i>Courses:</i></u> Completion of the Graduate Academic Certificate in Medical Health Physics & Internal Dosimetry includes the following two courses:</p> <ol style="list-style-type: none"> 1. MEDPHYS 771: Isotopes In-Vivo - Discussion of how various practical aspects of the production and in-vivo use of radioactive isotopes impact upon radiation doses of people who work with radioisotopes and people to whom radioactivity is administered either by design or by accident. Discussion of the regulatory processes involved in the production and in-vivo use of radio chemicals. 2. MEDPHYS 772: Medical Health Physics - This course introduces students to the Health Physics aspects of non-ionizing forms of radiation commonly used in medicine, including ultraviolet, optical, and radiofrequency/microwave. <p>These 2 courses would give a fulsome understanding of radiation protection principles for a wide range of medical applications, both using ionizing and non-ionizing radiation.</p>
ii) Learning Outcomes	<p>Targeted competencies and skills can be grouped into 4 categories: technical knowledge, technical skills, values, and professional skills.</p> <p>1. Technical Knowledge</p> <ul style="list-style-type: none"> • Transport of ionizing radiation through matter • Effects of ionizing radiation on living systems • Structure of radiation protection programs to protect personnel, the public, and the environment and to meet regulatory requirements • Specific radiation protection challenges encountered in clinical environments • Safety of non-ionizing radiation sources in clinical environments

	<p>2. Technical skills</p> <ul style="list-style-type: none"> • How to calculate exposure, dose rate, and committed dose • Hazard analysis for free releases, emissions, decommissioning, and emergency preparedness <p>3. Values</p> <ul style="list-style-type: none"> • Radiological work planning using the ALARA principle (“as low as reasonably achievable”), including analysis of scientific, societal, and economic factors • Identification and protection of critical targets or groups most at risk from ionizing radiation • Fostering supportive teamwork and information exchange <p>4. Professional Skills</p> <ul style="list-style-type: none"> • Understanding nuclear, clinical, and regulatory institutions • Application of technical concepts • Professional conduct including integrity, teamwork, and individual responsibility • Career development skills such as resume preparation, interviewing skills, professional development, certifications, and designations • Familiarity with routine nuclear operations and emergency response • Communicating aspects of ionizing radiation to professionals • Communicating aspects of radiation risks and benefits to members of the public
iii) Demonstrating Student Achievement of Learning Outcomes	<p>Technical knowledge will be primarily assessed using in-program written reports, assignments, and quizzes/examinations. Programming will also include oral presentations and discussions where learners can demonstrate their knowledge.</p> <p>Technical skills will be primarily assessed during laboratories in the skills workshop and scenario training, as well as written reports, assignments, discussions, and quizzes/examinations.</p> <p>Values will be primarily assessed during laboratories in the skills workshop, scenario training, discussions, and oral</p>

		<p>presentations both independently and in teams. Values will also be assessed as components of assignments, written reports, and quizzes/examinations.</p> <p>Professional skills will be primarily assessed during laboratories in the skills workshop, scenario training, discussions, and oral presentations both independently and in teams. Learners will also participate in community engagement opportunities as well as networking where their professional competencies will be evaluated, with major emphasis on communication skills.</p>
iv)	Program Admission Requirements	<p>Entrance requirements are set at the same standard as any graduate program in the Department of Physics & Astronomy:</p> <ul style="list-style-type: none"> • Honours B.Sc. degree in Physics or Engineering Physics with at least a B+ average in the final year. Applicants with an Honours B.Sc. in other science disciplines will be considered for admission if they have received a good grounding in physics • Since instruction is in English, international students whose first language is not English must take either the TOEFL (iBT) and achieve a score of at least 92 (580 on the written version or 237 on the computer version), or the IELTS with an overall score of 6.5 (no less than 5.5 in each section). Students may be exempted from the language test requirement if they completed a degree where the official language of instruction and evaluation was English.
v)	Program Completion Requirements	Successful completion of the 2 courses with passing grades of at least B- in all courses.
vi)	Program Delivery Format	Synchronous hybrid. In-person lectures with live streaming.
<p>Listing of Courses (if the courses are new, please complete the Graduate Course Form, if the courses are existing please append the most recent syllabus for course):</p> <ul style="list-style-type: none"> • MEDPHYS 771: Isotopes In-Vivo – course outline attached • MEDPHYS 772: Medical Health Physics – course outline attached 		
<p>If you're planning on charging a fee, please note the date of USFC approval of intended fee: Pending</p>		

Graduate Certificate Form

Department & Program Information (complete all fields)	
Certificate Name:	Nuclear Detection, Instrumentation & Methods
Department	Physics & Astronomy
Name of Representative:	Dr. Alison Sills
Effective Date:	September 1, 2024
Date of Submission:	March 12, 2024
Program Information:	
i) Program Overview	<p><u>Purpose:</u> Nuclear in Canada is an active industry, comprising of work in both the private and public sectors. Properly trained health physicists and technologists are needed to ensure activities such as power generation, medical isotope production, and nuclear research are planned, conducted, and completed safely and successfully.</p> <p>In 2015 and 2016, the Ontario Ministry of Energy committed to refurbishing multiple nuclear reactors in the province, creating a significant demand for qualified professionals in the nuclear industry. In July 2023, Ontario started pre-development work with Bruce Power to build a third generating station to generate an additional 4,800 MW of power. In December 2023, Canada declared, along with other COP28 countries, to triple nuclear energy capacity by 2050 to meet climate change goals.</p> <p>As the province and country commit to cleaner energy practices, the commitment to nuclear power to offset greenhouse gas emissions means there continues to be a thriving market for health physicists and radiation safety professionals. In addition, the resurgence of the growing nuclear workforce coincides with a time where many in industry are reaching retirement age. The Canadian Nuclear Association states that about a third of nuclear workers are expected to retire within the next 10 years. It is imperative that this field replaces these workers and the demand for qualified professionals grows.</p> <p>The Nuclear Safety and Technology Micro-credentials provide the fundamental knowledge required for careers in the nuclear industry. The Graduate Academic Certificate in Nuclear Detection, Instrumentation & Methods is one of three</p>

	<p>graduate certificates in the Micro-credential suite and is designed to give the foundational knowledge of the theory, instrumentation, and techniques of radiation measurement and analysis of radiation physics problems in various fields. This graduate-level micro-credential provides learners with in-depth knowledge for professions that utilize or develop nuclear instrumentation.</p> <p><u><i>Intended Audience:</i></u> This program is designed for individuals looking to enter the nuclear workforce or to provide additional education and training for early-career professionals in industry. This program is an accessible learning opportunity for:</p> <ol style="list-style-type: none"> 1. Recent immigrants – Technical or skilled workers that come to Canada may want careers in nuclear or may have experience in nuclear from their home country. These workers may find that education in the Canadian nuclear landscape may enable them to perform better in their jobs and become more employable in the Canadian labour market. Program content covers the Canadian nuclear regulatory framework, policies, and procedures and this is a major asset in the Canadian nuclear industry. 2. Current students – These micro-credentials are open to current students that may want concurrent credentials to their studies. For example, a civil engineering student may be interested in working for a company constructing new nuclear builds and would like to gain a nuclear micro-credential to be more competitive in the labour market. 3. Recent graduates – Recent graduates from undergraduate or graduate programs may want further credentials to gain employability in the nuclear sector. 4. Indigenous communities - With increasing engagement with and opportunity for Indigenous groups in the nuclear sector, such as the partnership between Bruce Power and the Saugeen-Ojibway Nation, there is a growing need for more Indigenous experts in the field and investment into accessible education could greatly benefit Indigenous professionals.
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	<p><u><i>Concurrent or Standalone:</i></u> While this certificate will be offered and can be completed alone, it is complementary to the full Nuclear Safety & Technology Micro-credential Suite.</p> <p>Completion of the three graduate certificates in the program could be considered for credit toward McMaster's Master of Science in Radiation Science – Health & Radiation Physics</p> <p><u><i>Courses:</i></u> Completion of the Graduate Academic Certificate in Nuclear Detection, Instrumentation & Methods includes the following two courses:</p> <ol style="list-style-type: none"> 1. MEDPHYS 773: Physics of Radiation Detection and Measurement - Lectures and laboratory work in the techniques and theory of the measurement of radiation. Topics include radioactivity and radioactive decay, solid state dosimetry, principles of active detectors, counting statistics and data reduction, advanced multidetector systems. 2. MEDPHYS 774: Monte Carlo simulation for Medical, Health and Radiation Physics - Practical Monte Carlo simulation methods for the types of radiation physics problems encountered in the medical, health and radiation physics professions. The course will focus on general Monte Carlo theory and simulation methods for radiation detector response modeling and radiation dosimetry. <p>These 2 courses would give a fulsome understanding of and practice with a wide range of nuclear detection instruments and equipment.</p>
ii) Learning Outcomes	<p>Targeted competencies and skills can be grouped into 4 categories: technical knowledge, technical skills, values, and professional skills.</p> <p>1. Technical Knowledge</p> <ul style="list-style-type: none"> • Quantum theory of radiation interaction • Detection and quantification of ionizing radiation • Transport of ionizing radiation through matter • Structure of radiation protection programs to protect personnel, the public, and the environment and to meet regulatory requirements <p>2. Technical skills</p>

	<ul style="list-style-type: none"> • Detector/instrumentation types, applications, responses, and calibration methods • How to calculate exposure, dose rate, and committed dose • How to use Monte Carlo programs to simulate transport and detection of radiation • Hazard analysis for free releases, emissions, decommissioning, and emergency preparedness <p>3. Values</p> <ul style="list-style-type: none"> • Radiological work planning using the ALARA principle (“as low as reasonably achievable”), including analysis of scientific, societal, and economic factors • Identification and protection of critical targets or groups most at risk from ionizing radiation • Fostering supportive teamwork and information exchange <p>4. Professional Skills</p> <ul style="list-style-type: none"> • Understanding nuclear, clinical, and regulatory institutions • Application of technical concepts • Professional conduct including integrity, teamwork, and individual responsibility • Career development skills such as resume preparation, interviewing skills, professional development, certifications, and designations • Familiarity with routine nuclear operations and emergency response • Communicating aspects of ionizing radiation to professionals • Communicating aspects of radiation risks and benefits to members of the public
iii) Demonstrating Student Achievement of Learning Outcomes	<p>Technical knowledge will be primarily assessed using in-program written reports, assignments, and quizzes/examinations. Programming will also include oral presentations and discussions where learners can demonstrate their knowledge.</p> <p>Technical skills will be primarily assessed during laboratories in the skills workshop and scenario training, as well as written reports, assignments, discussions, and quizzes/examinations.</p>

		<p>Values will be primarily assessed during laboratories in the skills workshop, scenario training, discussions, and oral presentations both independently and in teams. Values will also be assessed as components of assignments, written reports, and quizzes/examinations.</p> <p>Professional skills will be primarily assessed during laboratories in the skills workshop, scenario training, discussions, and oral presentations both independently and in teams. Learners will also participate in community engagement opportunities as well as networking where their professional competencies will be evaluated, with major emphasis on communication skills.</p>
iv)	Program Admission Requirements	<p>Entrance requirements are set at the same standard as any graduate program in the Department of Physics & Astronomy:</p> <ul style="list-style-type: none"> • Honours B.Sc. degree in Physics or Engineering Physics with at least a B+ average in the final year. Applicants with an Honours B.Sc. in other science disciplines will be considered for admission if they have received a good grounding in physics • Since instruction is in English, international students whose first language is not English must take either the TOEFL (iBT) and achieve a score of at least 92 (580 on the written version or 237 on the computer version), or the IELTS with an overall score of 6.5 (no less than 5.5 in each section). Students may be exempted from the language test requirement if they completed a degree where the official language of instruction and evaluation was English.
v)	Program Completion Requirements	Successful completion of the 2 courses with passing grades of at least B- in all courses.
vi)	Program Delivery Format	Synchronous hybrid. In-person lectures with live streaming. There will also be a required in-person skills workshop for learners to gain experience with specialized nuclear instruments and equipment.
<p>Listing of Courses (if the courses are new, please complete the Graduate Course Form, if the courses are existing please append the most recent syllabus for course):</p> <ul style="list-style-type: none"> • MEDPHYS 773: Physics of Radiation Detection and Measurement – a new course approved to be first offered in 2024/25; new course approval form attached • MEDPHYS 774: Monte Carlo simulation for Medical, Health and Radiation Physics – course outline attached 		

If you're planning on charging a fee, please note the date of USFC approval of intended fee:
Pending

Graduate Certificate Form

Department & Program Information (complete all fields)	
Certificate Name:	Radioactivity and Radiation Interactions
Department	Physics & Astronomy
Name of Representative:	Dr. Alison Sills
Effective Date:	September 1, 2024
Date of Submission:	March 12, 2024
Program Information:	
i) Program Overview	<p><u>Purpose:</u> Nuclear in Canada is an active industry, comprising of work in both the private and public sectors. Properly trained health physicists and technologists are needed to ensure activities such as power generation, medical isotope production, and nuclear research are planned, conducted, and completed safely and successfully.</p> <p>In 2015 and 2016, the Ontario Ministry of Energy committed to refurbishing multiple nuclear reactors in the province, creating a significant demand for qualified professionals in the nuclear industry. In July 2023, Ontario started pre-development work with Bruce Power to build a third generating station to generate an additional 4,800 MW of power. In December 2023, Canada declared, along with other COP28 countries, to triple nuclear energy capacity by 2050 to meet climate change goals.</p> <p>As the province and country commit to cleaner energy practices, the commitment to nuclear power to offset greenhouse gas emissions means there continues to be a thriving market for health physicists and radiation safety professionals. In addition, the resurgence of the growing nuclear workforce coincides with a time where many in industry are reaching retirement age. The Canadian Nuclear Association states that about a third of nuclear workers are expected to retire within the next 10 years. It is imperative that this field replaces these workers and the demand for qualified professionals grows.</p> <p>The Nuclear Safety and Technology Micro-credentials provide the fundamental knowledge required for careers in the nuclear industry. The Graduate Academic Certificate in Radioactivity and Radiation Interactions is one of three graduate certificates</p>

	<p>in the Micro-credential suite and is designed to give the foundational knowledge of the interactions and effects of radiation on matter, including biological material at the molecular, cellular, tissue, and organism level.</p> <p><u><i>Intended Audience:</i></u> This program is designed for individuals looking to enter the nuclear workforce or to provide additional education and training for early-career professionals in industry. This program is an accessible learning opportunity for:</p> <ol style="list-style-type: none">1. Recent immigrants – Technical or skilled workers that come to Canada may want careers in nuclear or may have experience in nuclear from their home country. These workers may find that education in the Canadian nuclear landscape may enable them to perform better in their jobs and become more employable in the Canadian labour market. Program content covers the Canadian nuclear regulatory framework, policies, and procedures and this is a major asset in the Canadian nuclear industry.2. Current students – These micro-credentials are open to current students that may want concurrent credentials to their studies. For example, a civil engineering student may be interested in working for a company constructing new nuclear builds and would like to gain a nuclear micro-credential to be more competitive in the labour market.3. Recent graduates – Recent graduates from undergraduate or graduate programs may want further credentials to gain employability in the nuclear sector.4. Indigenous communities - With increasing engagement with and opportunity for Indigenous groups in the nuclear sector, such as the partnership between Bruce Power and the Saugeen-Ojibway Nation, there is a growing need for more Indigenous experts in the field and investment into accessible education could greatly benefit Indigenous professionals. <p><u><i>Concurrent or Standalone:</i></u> While this certificate will be offered and can be completed alone, it is complementary to the full Nuclear Safety & Technology Micro-credential Suite.</p>
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	<p>Completion of the three graduate certificates in the program could be considered for credit toward McMaster's Master of Science in Radiation Science – Health & Radiation Physics</p> <p><u>Courses:</u> Completion of the Graduate Academic Certificate in Radioactivity and Radiation Interactions includes the following two courses:</p> <ol style="list-style-type: none"> 1. MEDPHYS 6B03: Radioactivity and Radiation Interactions - Radioactivity and radiation phenomenology: interaction of radiations with matter, dosimetry, radiation in medicine, biological effects, radiation levels and regulations, radiation protection. 2. MEDPHYS 775: Advanced Radiation Physics - Mathematical analysis of the radiation field; interaction coefficients, survey of interactions, radiation transport, electromagnetic and hadronic cascades, exposure, dose, kerma, dose equivalent, micro-dosimetry, interface dosimetry, cavity theory, shielding theory. <p>These 2 courses would give a fulsome understanding of radiation, radioactive decay, radiation transport, and photon and charged particle interactions with matter.</p>
ii) Learning Outcomes	<p>Targeted competencies and skills can be grouped into 4 categories: technical knowledge, technical skills, values, and professional skills.</p> <ol style="list-style-type: none"> 1. Technical Knowledge <ul style="list-style-type: none"> • Quantum theory of radiation interaction • Detection and quantification of ionizing radiation • Transport of ionizing radiation through matter • Effects of ionizing radiation on living systems 2. Technical skills <ul style="list-style-type: none"> • How to calculate exposure, dose rate, and committed dose • Hazard analysis for free releases, emissions, decommissioning, and emergency preparedness 3. Values <ul style="list-style-type: none"> • Radiological work planning using the ALARA principle ("as low as reasonably achievable"), including analysis of scientific, societal, and economic factors

	<ul style="list-style-type: none"> • Identification and protection of critical targets or groups most at risk from ionizing radiation • Fostering supportive teamwork and information exchange <p>4. Professional Skills</p> <ul style="list-style-type: none"> • Understanding nuclear, clinical, and regulatory institutions • Application of technical concepts • Professional conduct including integrity, teamwork, and individual responsibility • Career development skills such as resume preparation, interviewing skills, professional development, certifications, and designations • Familiarity with routine nuclear operations and emergency response • Communicating aspects of ionizing radiation to professionals • Communicating aspects of radiation risks and benefits to members of the public
iii) Demonstrating Student Achievement of Learning Outcomes	<p>Technical knowledge will be primarily assessed using in-program written reports, assignments, and quizzes/examinations. Programming will also include oral presentations and discussions where learners can demonstrate their knowledge.</p> <p>Technical skills will be primarily assessed during laboratories in the skills workshop and scenario training, as well as written reports, assignments, discussions, and quizzes/examinations.</p> <p>Values will be primarily assessed during laboratories in the skills workshop, scenario training, discussions, and oral presentations both independently and in teams. Values will also be assessed as components of assignments, written reports, and quizzes/examinations.</p> <p>Professional skills will be primarily assessed during laboratories in the skills workshop, scenario training, discussions, and oral presentations both independently and in teams. Learners will also participate in community engagement opportunities as well as networking where their professional competencies will be evaluated, with major emphasis on communication skills.</p>

iv) Program Admission Requirements	<p>Entrance requirements are set at the same standard as any graduate program in the Department of Physics & Astronomy:</p> <ul style="list-style-type: none"> • Honours B.Sc. degree in Physics or Engineering Physics with at least a B+ average in the final year. Applicants with an Honours B.Sc. in other science disciplines will be considered for admission if they have received a good grounding in physics • Since instruction is in English, international students whose first language is not English must take either the TOEFL (iBT) and achieve a score of at least 92 (580 on the written version or 237 on the computer version), or the IELTS with an overall score of 6.5 (no less than 5.5 in each section). Students may be exempted from the language test requirement if they completed a degree where the official language of instruction and evaluation was English.
v) Program Completion Requirements	Successful completion of the 2 courses with passing grades of at least B- in all courses.
vi) Program Delivery Format	Synchronous hybrid. In-person lectures with live streaming.
<p>Listing of Courses (if the courses are new, please complete the Graduate Course Form, if the courses are existing please append the most recent syllabus for course):</p> <ul style="list-style-type: none"> • MEDPHYS 6B03: Radioactivity and Radiation Interactions – course outline attached • MEDPHYS 775: Advanced Radiation Physics – course outline attached 	
<p>If you're planning on charging a fee, please note the date of USFC approval of intended fee: <i>Pending</i></p>	



SCIENCE

Amendment

Submission to Undergraduate Council,
Certificates, Diplomas &
Microcredentials Committee for the
2025-26 Undergraduate Calendar

Originally approved by the General
Faculty of the Faculty of Science on
November 14, 2024

Amendment submitted March 4, 2025

Science Leadership Certificate of Completion

Program Proposal for Information Purposes

Department & Program Information	
Program:	Faculty of Science
Course Name:	Science Leadership Certificate of Completion
Credential:	Certificate of Completion (Non-Academic)
Name of Representative:	Maureen MacDonald & Maggie Cockburn
Effective Date:	September 2025
Date of Submission:	March 2025
Program Information:	
Program Overview	<p>The Susan Cunningham Science Leadership Academy will provide meaningful opportunities for students to grow as science leaders and create science leadership community by connecting students of various levels, backgrounds, and stages of their personal and academic development. Through admission into the Academy, students will have the opportunity to earn a Science Leadership Certificate of Completion. The programming offered in the certificate will provide meaningful opportunities for Faculty of Science undergraduate and graduate students to grow as science leaders and create science leadership community by connecting students of various levels, backgrounds, and stages of their personal and academic development. Upon completion of this certificate, students will emerge not thinking of themselves as leaders of tomorrow, but will recognize their capacity to lead today.</p>
Learning Objectives	<ul style="list-style-type: none"> – Develop self-awareness by identifying strengths and areas for improvement in interpersonal interactions. – Discover their potential as a leader, explore related career paths, and understand how leadership applies to their environment. – Cultivate a growth mindset through curiosity, exploration, and discovery in their personal and professional development. – Recognize that leadership is influence and develop communication and collaboration skills to make a meaningful impact. – Apply leadership principles through self-reflection, coaching, and goal-setting to navigate real-world challenges.

Meeting Learning Objectives	<p>The delivery formats and teaching methods are structured to have a maximum effect on achievement of the learning objectives. A variety of approaches, such as workshops, modules & events will be used to support learning and meet objectives.</p>
Program Admission Requirements	<p>As part of their application, students will be asked to provide information on:</p> <ul style="list-style-type: none"> • Why they are interested in developing their leadership, and their perspective on the impact of effective leadership. • Their goals and aspirations for their experience in the Susan Cunningham Science Leadership Academy. • How they intend to get involved in leadership on campus or in their broader communities—or how they are already involved. • How they have, or plan to, align their academic learning with their leadership aspirations (consider what course(s) they have taken, or might take in the future, that connect with and support their interest in leadership). <p>The application process will have an associated rubric with weighting of the admission requirements and the applications will be assessed by a team that discussed the rubric and its weighting and has representation from across the Faculty of Science.</p>
Program Pre-requisites	<p>Students must be a declared Undergraduate (Level II and above) or Graduate student in the Faculty of Science.</p> <p>Students will be encouraged to consider enrollment in an academic course related to leadership (eg. courses available through the Wilson College Minor in Leadership and Civic Studies). Through the admissions process, students will have an opportunity to describe the potential connection between their academic experiences and their leadership aspirations. Both undergraduate and graduate students will be provided with a comprehensive list of McMaster University courses that have themes or components connected to leadership.</p>
Course Completion Requirements	<ul style="list-style-type: none"> • 30 contact hours – as described in the course delivery format section below. Contact hours will be tracked and verified by the Program Coordinator.

	<ul style="list-style-type: none"> • Completion of an Individual/Personalized Leadership Development Plan.
Course Delivery Format	Students will engage in a series of workshops, modules, and events in a blended format, including in-person, hybrid, virtual, synchronous and asynchronous opportunities. The certificate program will also include 5, one-hour personalized professional coaching sessions for each participating student and guidance on the development and refinement of a personalized leadership development plan.
Student Evaluations (Grading Process)	<p>Students will build a Leadership Development Plan that takes what they learn in coaching, workshops and modules and document how they will apply it to their specific leadership journey.</p> <p>Students will receive a Pass/Fail grade based on completed activities and completion of the 30 contact hours.</p>
Course Evaluation	Students will receive coaching from the Certified Coaches throughout and feedback from the Program Coordinator on their leadership development plan and progress towards the contact hours requirement at the mid and end points of the program.
Course Instruction	Instruction and engagement will be facilitated by the Program Coordinator and include support from guest speakers, facilitators and Certified Coaches.
Course Details:	
<p>This certificate program will invite applicants ranging from Level II undergraduate to graduate students in the Faculty of Science. A cohort of 25 students (with no pre-determined proportions of undergraduate and graduate students) will be selected for enrollment. The certificate program will run on an annual basis and follow the University academic calendar, September – April each year. Upon completion, students will receive the credential: Science Leadership Certificate of Completion.</p>	

To : Graduate Council

From : Christina Bryce
Assistant Graduate Secretary

At its meeting on February 19th and March 19th the Faculty of Engineering Graduate Curriculum and Policy Committee approved the following graduate curriculum recommendations.

Please note that these recommendations were approved by the Faculty of Engineering.

For Approval of Graduate Council:

- a. **Biomedical Engineering***
 - i. **Change to Program Requirements**
- b. **Computing and Software**
 - i. **Change to Comprehensive Examination Requirements**
- c. **Materials Science and Engineering**
 - i. **Change to Calendar Copy**
 - ii. **Addition of Advanced Credit Option**
- d. **School of Engineering Practice and Technology**
 - i. **Change to Course Requirements (MEME and MEST)**
 - ii. **Change to Program Requirements (Advanced Credit) – MEEI/MTEI**

For Information of Graduate Council:

- e. **Biomedical Engineering***
 - i. **New Cross-listed Courses**
 - 1. 724 Materials Characterization by Electron/Ion Microscopy
 - 2. 725 Transmission Electron Microscopy
- f. **Computing and Software**
 - i. **Course Cancellations**
 - 1. 728 Computability on Abstract Data Types
 - ii. **Change to Course Descriptions**
 - 1. 6F03 Distributed Computer Systems
 - 2. 6O03 Linear Optimization
 - 3. 6TE3 Continuous Optimization
 - 4. 6WW3 Web Systems and Web Computing
 - 5. 6HC3 The Human Computer Interface
 - iii. **New Course**
 - 1. 732 Natural Language Processing
- g. **Engineering Physics**

- i. **Change to Course Description**
 - 1. 6NE3 Advanced Nuclear Engineering
 - ii. **Course Cancellations**
 - 1. 707 Nuclear Fuel Cycle and Radioactive Waste Management
 - 2. 710 Nuclear Reactor Dynamics and Control
 - 3. 714 Nuclear Reactor Safety Design
 - iii. **Remove Cross-listings with UNENE**
 - iv. **New Course (and New Cross-listing)**
 - 1. 735 Computational Thermodynamics of Materials
- h. **School of Engineering Practice and Technology**
 - i. **New Course**
 - 1. 730 The Rise of Intelligent Machines: Ethics, Society, and the Future
 - ii. **Change to Course Description**
 - 1. 763 Special Topics in Engineering Design
 - 2. 700 M.Eng. Project in Engineering Design Part I and II
 - iii. **Change to Course Title and Description**
 - 1. 744 Biomanufacturing
 - 2. 765 Current Good Manufacturing Practice Downstream Operations
 - iv. **Change to Course Description**
 - 1. 775 Introduction to Computational Natural Language Processing
 - v. **Change to Prerequisites**
 - 1. 713 Cloud Computing
 - 2. 785 Machine Learning
- i. **Chemical Engineering**
 - i. **New Course**
 - 1. 735 Technical Communications for Graduate Students
- j. **Civil Engineering**
 - i. **New Cross-listed Course**
 - 1. 720 Sediment Transport in Fluvial Environments
- k. **Mechanical Engineering**
 - i. **Change to Course Number and Requisite**

*Also approved by the Faculty of Health Sciences

**Recommendation for Change in Graduate Curriculum – For Change(s) Involving Degree
Program Requirements / Procedures / Milestones**

Please read the following notes before completing this form:

1. This form must be completed for all changes involving degree program requirements/procedures. All sections of this form must be completed.
2. An electronic version of this form (must be in MS WORD not PDF) should be emailed to the Assistant Secretary, School of Graduate Studies (cbryce@mcmaster.ca).
3. A representative from the department is **required to attend** the Faculty Curriculum and Policy Committee meeting during which this recommendation for change in graduate curriculum will be discussed.

DEPARTMENT	School of Biomedical Engineering		
NAME OF PROGRAM and PLAN	Biomedical Engineering (MASC) Biomedical Engineering (PhD)		
DEGREE	Master's and PhD		
NATURE OF RECOMMENDATION (PLEASE CHECK APPROPRIATE BOX)			
Is this change a result of an IQAP review? <input type="checkbox"/> Yes <input type="checkbox"/> No			
Creation of a New Milestone <input type="checkbox"/>			
Change in Admission Requirements	<input type="checkbox"/>	Change in Comprehensive Examination Procedure	Change in Course/Program Requirements <input checked="" type="checkbox"/>
Change in the Description of a section of the Graduate Calendar	EXPLAIN:		
Other Changes:	Explain:		



Describe the existing requirement/procedure:

Currently, PhD and M.A.Sc. students in the Biomedical Engineering (BME) program with an engineering background are required to take at least one graduate-level Health Sciences course (700-level) in addition to their core coursework. This requirement is outlined in the Biomedical Engineering Handbook program description for both degrees. Currently, students with an engineering background are required to take BIOMED 706 (Biomedical Engineering II) but this does not fulfill the Health Science/Medical Science course requirement, meaning engineering-background students must take an additional course from the Health Sciences.

Provide a detailed description of the Recommended Change (*Attach additional pages if space is not sufficient.*)

The Biomedical Engineering program proposes removing the requirement for engineering-background students to take an additional graduate-level Health Sciences course in addition to the core BIOMED 706. Instead, students would have the flexibility to select any graduate-level Biomedical Engineering (BME) course after completing their core coursework (BIOMED 706). This change will provide students with more autonomy in selecting courses that align with their research interests and career goals while maintaining the integrity of the program's learning outcomes.

Rationale for the Recommended Change (How does the requirement fit into the department's program and/or tie to existing Program Learning Outcomes from the program's IQAP cyclical review?):

The removal of the Health Sciences course requirement for engineering-background students aligns with the program's goal of providing a well-rounded and flexible curriculum that supports diverse research interests. The current requirement limits students' ability to tailor their coursework to their specific areas of study. By allowing students to select from a broader range of Biomedical Engineering courses, the program ensures that students receive specialized knowledge that is most relevant to their research and professional aspirations. Additionally, interdisciplinary exposure can still be encouraged through elective choices without imposing a rigid requirement. This change reflects a shift towards greater academic autonomy while maintaining the rigor of the program.

Provide implementation date: (*Implementation date should be at the beginning of the academic year*)

September 2025

Are there any other details of the recommended change that the curriculum and policy committee should be aware of? If yes, please explain:

This change will only apply to students entering the program beginning in Fall 2025 and will not retroactively affect students who have already planned their coursework based on existing requirements. Faculty advising processes may need minor adjustments to ensure students understand their options under the revised structure. This change does not alter the core competencies or accreditation standards of the program.

Provide a description of the recommended change to be included in the calendar (please include a tracked changes version of the calendar section affected if applicable):

Proposed Revision for PhD Program:

"The general regulations for the Degree Doctor of Philosophy appear earlier in the Calendar. Students completing a Ph.D. will be required to complete **two (2)** courses beyond the masters or 5 courses beyond the baccalaureate degree. One must be the core course ~~and one additional course~~ **which** must be from the complimentary discipline from their background (Engineering students must take at least one 700 level Health Science Course, Health/Life Science students must take at least one 700 level engineering course) **and at least 50% of a student's total coursework must be from Biomedical Engineering (BIOMED) courses.** A

candidate is also required to present a departmental seminar and pass the Ph.D. Comprehensive Examination, which is designed to test breadth of knowledge and ability to synthesize and integrate ideas from within and peripheral to the candidate's research area. The Comprehensive Examination will normally take place between 12 and 20 months after the candidate first registers in the Ph.D. program. The candidate must present a thesis embodying original contribution to biomedical engineering. A supervisory committee determines when a candidate is ready to write the thesis and ascertains whether the quality is satisfactory. The candidate must defend the thesis at a Final Oral Examination. Under unique circumstances students may apply for direct entry into the Ph.D. program without having a Masters."

Proposed Revision for M.A.Sc. Program:

~~"A candidate is required to complete successfully at least three one-term courses, present a Biomedical Engineering departmental seminar, and present a thesis embodying an original contribution to biomedical engineering. The thesis must be defended in an oral examination.~~

A M.A.Sc. candidate entering is required to complete at least three (3) one-term courses, present a Biomedical Engineering departmental seminar, and present a thesis embodying an original contribution to biomedical engineering. One of the courses should be a core course which must be from the complimentary discipline from their background. At least two of the courses must be at the 700 level. Students may select their coursework from any graduate-level Biomedical Engineering courses, with guidance from their supervisor. At least 50% of a student's total coursework must be from Biomedical Engineering (BIOMED) courses."

Commented [MS1]: Added the text in red

Commented [MS2]: Delete from the original text in the Graduate Calendar:
https://academiccalendars.romcmaster.ca/preview_program.php?catoid=55&poid=27852&returnto=11161

Commented [MS3]: New text inserted in red

Commented [MS4]: Deleted from the Graduate Calendar:
https://academiccalendars.romcmaster.ca/preview_program.php?catoid=55&poid=27851&returnto=11161

Commented [MS5]: Replace the above section with the text in red



SCHOOL OF
GRADUATE STUDIES

Gilmour Hall, Room 212
1280 Main Street West
Hamilton, ON L8S 4L8

(905) 525-9140 x 23679
gs.mcmaster.ca

Contact information for the recommended change:

Name: Ravi Selvaganapathy Email: selvaga@mcmaster.ca Date submitted: March 6, 2025

If you have any questions regarding this form, please contact the Assistant Secretary, School of Graduate Studies, cbryce@mcmaster.ca

Recommendation for Change in Graduate Curriculum – For Change(s) Involving Degree Program Requirements / Procedures / Milestones

Please read the following notes before completing this form:

1. This form must be completed for all changes involving degree program requirements/procedures. All sections of this form must be completed.
2. An electronic version of this form (must be in MS WORD not PDF) should be emailed to the Assistant Secretary, School of Graduate Studies (cbryce@mcmaster.ca).
3. A representative from the department is **required to attend** the Faculty Curriculum and Policy Committee meeting during which this recommendation for change in graduate curriculum will be discussed.

DEPARTMENT	Computing and Software			
NAME OF PROGRAM and PLAN	Ph.D. in Computer Science			
DEGREE	Ph.D.			
NATURE OF RECOMMENDATION (PLEASE CHECK APPROPRIATE BOX)				
Is this change a result of an IQAP review? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No				
Creation of a New Milestone <input type="checkbox"/>				
Change in Admission Requirements		Change in Comprehensive Examination Procedure	X	Change in Course/Program Requirements
Change in the Description of a section of the Graduate Calendar		EXPLAIN:		
Other Changes:		Explain:		



Describe the existing requirement/procedure:

(Relevant part of our regulations:)

Outcome of the exam can be 1) passed, 2) passed but with some required course work (with optional minimum grade), 3) retake oral part only, within 2 months, 4) retake comprehensive, within 2 months. Students can at most retake the exam once and should complete the exam successfully within the first two years of the program.

Provide a detailed description of the Recommended Change (*Attach additional pages if space is not sufficient.*)

Outcome of the exam can be 1) passed, 2) passed but with some required course work (with optional minimum grade), 3) retake oral part only, within 2 months, 4) rewrite the report only, within 2 months, 54) retake comprehensive, within 2 months. Students ~~can at most~~ can retake any part of the exam (i.e. oral and/or written) at most once and should complete the exam successfully within the first two years of the program.

Rationale for the Recommended Change (How does the requirement fit into the department's program and/or tie to existing Program Learning Outcomes from the program's IQAP cyclical review?):

Several examination committees found that the report was inadequate but the oral defense was fine, and thus wanted just that part to be redone.

Provide implementation date: (*Implementation date should be at the beginning of the academic year*)

Sept. 2025

Are there any other details of the recommended change that the curriculum and policy committee should be aware of? If yes, please explain:



Provide a description of the recommended change to be included in the calendar (please include a tracked changes version of the calendar section affected if applicable):

N/A

Contact information for the recommended change:

Name: Jacques Carette Email: carette@mcmaster.ca Date submitted: Feb. 13/2025

If you have any questions regarding this form, please contact the Assistant Secretary, School of Graduate Studies, cbryce@mcmaster.ca

Recommendation for Change in Graduate Curriculum – For Change(s) Involving Degree Program Requirements / Procedures / Milestones

Please read the following notes before completing this form:

1. This form must be completed for all changes involving degree program requirements/procedures. All sections of this form must be completed.
2. An electronic version of this form (must be in MS WORD not PDF) should be emailed to the Assistant Secretary, School of Graduate Studies (cbryce@mcmaster.ca).
3. A representative from the department is **required to attend** the Faculty Curriculum and Policy Committee meeting during which this recommendation for change in graduate curriculum will be discussed.

DEPARTMENT	Computing and Software		
NAME OF PROGRAM and PLAN	Ph.D. in Software Engineering		
DEGREE	Ph.D.		
NATURE OF RECOMMENDATION (PLEASE CHECK APPROPRIATE BOX)			
Is this change a result of an IQAP review? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No			
Creation of a New Milestone <input type="checkbox"/>			
Change in Admission Requirements	<input type="checkbox"/>	Change in Comprehensive Examination Procedure	<input checked="" type="checkbox"/> Change in Course/Program Requirements
Change in the Description of a section of the Graduate Calendar	<input type="checkbox"/>	EXPLAIN:	
Other Changes:	Explain:		



Describe the existing requirement/procedure:

(Relevant part of our regulations:)

Outcome of the exam can be 1) passed, 2) passed but with some required course work (with optional minimum grade), 3) retake oral part only, within 2 months, 4) retake comprehensive, within 2 months. Students can at most retake the exam once and should complete the exam successfully within the first two years of the program.

Provide a detailed description of the Recommended Change (*Attach additional pages if space is not sufficient.*)

Outcome of the exam can be 1) passed, 2) passed but with some required course work (with optional minimum grade), 3) retake oral part only, within 2 months, 4) rewrite the report only, within 2 months, 54) retake comprehensive, within 2 months. Students ~~can at most~~ can retake any part of the exam (i.e. oral and/or written) at most once and should complete the exam successfully within the first two years of the program.

Rationale for the Recommended Change (How does the requirement fit into the department's program and/or tie to existing Program Learning Outcomes from the program's IQAP cyclical review?):

Several examination committees found that the report was inadequate but the oral defense was fine, and thus wanted just that part to be redone.

Provide implementation date: (*Implementation date should be at the beginning of the academic year*)

Sept. 2025

Are there any other details of the recommended change that the curriculum and policy committee should be aware of? If yes, please explain:



Provide a description of the recommended change to be included in the calendar (please include a tracked changes version of the calendar section affected if applicable):

N/A

Contact information for the recommended change:

Name: Jacques Carette Email: carette@mcmaster.ca Date submitted: Feb. 13/2025

If you have any questions regarding this form, please contact the Assistant Secretary, School of Graduate Studies, cbryce@mcmaster.ca

Recommendation for Change in Graduate Curriculum – For Change(s) Involving Degree Program Requirements / Procedures / Milestones

Please read the following notes before completing this form:

1. This form must be completed for all changes involving degree program requirements/procedures. All sections of this form must be completed.
2. An electronic version of this form (must be in MS WORD not PDF) should be emailed to the Assistant Secretary, School of Graduate Studies (cbryce@mcmaster.ca).
3. A representative from the department is **required to attend** the Faculty Curriculum and Policy Committee meeting during which this recommendation for change in graduate curriculum will be discussed.

DEPARTMENT	Computing and Software		
NAME OF PROGRAM and PLAN	Ph.D. in Computer Science / Ph.D. in Software Engineering		
DEGREE	Ph.D.		
NATURE OF RECOMMENDATION (PLEASE CHECK APPROPRIATE BOX)			
Is this change a result of an IQAP review? <input type="checkbox"/> Yes <input type="checkbox"/> No			
Creation of a New Milestone <input type="checkbox"/>			
Change in Admission Requirements	<input type="checkbox"/>	Change in Comprehensive Examination Procedure	Change in Course/Program Requirements
Change in the Description of a section of the Graduate Calendar	<input type="checkbox"/>	EXPLAIN:	
Other Changes:	X	Explain: Wording in Calendar did not properly reflect the changes in Comprehensives part I that have been in place for several years.	



Describe the existing requirement/procedure:

Provide a detailed description of the Recommended Change (*Attach additional pages if space is not sufficient.*)

See wording change below – procedure was changed some years ago, wording here was not. Note that this exact wording appears twice in the calendar and should be changed in both places.

Rationale for the Recommended Change (How does the requirement fit into the department's program and/or tie to existing Program Learning Outcomes from the program's IQAP cyclical review?):

Provide implementation date: (*Implementation date should be at the beginning of the academic year*)

Sep. 2025

Are there any other details of the recommended change that the curriculum and policy committee should be aware of? If yes, please explain:

Provide a description of the recommended change to be included in the calendar (please include a tracked changes version of the calendar section affected if applicable):

Pass a two-part Comprehensive Examination. Part I tests ~~breadth of knowledge~~readiness to perform research and Part II is a defense of a thesis proposal.

Contact information for the recommended change:

Name: Jacques Carette Email: carette@mcmaster.ca

Date submitted: Feb. 13/2025

If you have any questions regarding this form, please contact the Assistant Secretary, School of Graduate Studies, cbryce@mcmaster.ca

Recommendation for Change in Graduate Curriculum – For Change(s) Involving Degree Program Requirements / Procedures / Milestones

Please read the following notes before completing this form:

1. This form must be completed for all changes involving degree program requirements/procedures. All sections of this form must be completed.
2. An electronic version of this form (must be in MS WORD not PDF) should be emailed to the Assistant Secretary, School of Graduate Studies (cbryce@mcmaster.ca).
3. A representative from the department is **required to attend** the Faculty Curriculum and Policy Committee meeting during which this recommendation for change in graduate curriculum will be discussed.

DEPARTMENT	Materials Science and Engineering		
NAME OF PROGRAM and PLAN	GENPH / MATSENPHD		
DEGREE	Accelerated Master's		
NATURE OF RECOMMENDATION (PLEASE CHECK APPROPRIATE BOX)			
Is this change a result of an IQAP review? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No			
Creation of a New Milestone <input type="checkbox"/>			
Change in Admission Requirements		Change in Comprehensive Examination Procedure	Change in Course/Program Requirements
Change in the Description of a section of the Graduate Calendar		EXPLAIN:	
Other Changes:	Explain: Replacing MATLS 4KA3 and 4KB3 with MATLS 4K06. Correcting the language regarding the 600-level course requirement.		



Describe the existing requirement/procedure:

We are correcting the calendar to reflect the current practice in the department.

Provide a detailed description of the Recommended Change (*Attach additional pages if space is not sufficient.*)

No change is proposed. We are just correcting the calendar.

Rationale for the Recommended Change (How does the requirement fit into the department's program and/or tie to existing Program Learning Outcomes from the program's IQAP cyclical review?):

Provide implementation date: (*Implementation date should be at the beginning of the academic year*)

September 1, 2025

Are there any other details of the recommended change that the curriculum and policy committee should be aware of? If yes, please explain:

Provide a description of the recommended change to be included in the calendar (please include a tracked changes version of the calendar section affected if applicable):

An Accelerated Option is available to students currently enrolled at McMaster as undergraduate students in the Department of Materials Science and Engineering, whereby the M.A.Sc. degree may be completed in three or four terms (12-16 months) of full-time study. In exceptional circumstances, undergraduate engineering students from another department may apply for entry into the Accelerated Option by contacting the Associate Chair, Graduate. Application for entry into the Accelerated Option occurs in the penultimate year of undergraduate studies. Applicants must have a sessional average of 8.0 at the time they are applying for the option. Entry into the M.A.Sc. program under the Accelerated Option requires students to complete at least one term (four months) of their research project with a Supervisor from the department, plus successful completion of- MATLS 4K06 MATLS 4KA3 and MATLS 4KB3, and successful completion of advanced credit for one term 600-level half-course (3 units) in the final undergraduate year for graduate credit (which also

counts towards the undergraduate degree course requirements) provided it is listed within the department.

Contact information for the recommended change:

Name: Alisha Digba Email: digbaa1@mcmaster.ca

Date submitted:

If you have any questions regarding this form, please contact the Assistant Secretary, School of Graduate Studies, cbryce@mcmaster.ca

Recommendation for Change in Graduate Curriculum – For Change(s) Involving Degree Program Requirements / Procedures / Milestones

Please read the following notes before completing this form:

1. This form must be completed for all changes involving degree program requirements/procedures. All sections of this form must be completed.
2. An electronic version of this form (must be in MS WORD not PDF) should be emailed to the Assistant Secretary, School of Graduate Studies (cbryce@mcmaster.ca).
3. A representative from the department is **required to attend** the Faculty Curriculum and Policy Committee meeting during which this recommendation for change in graduate curriculum will be discussed.

DEPARTMENT	Materials Science and Engineering		
NAME OF PROGRAM and PLAN	GENPH / MATSEPHD		
DEGREE	Direct Entry PhD and Master's		
NATURE OF RECOMMENDATION (PLEASE CHECK APPROPRIATE BOX)			
Is this change a result of an IQAP review? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No			
Creation of a New Milestone <input type="checkbox"/>			
Change in Admission Requirements	Change in Comprehensive Examination Procedure	Change in Course/Program Requirements	
Change in the Description of a section of the Graduate Calendar	EXPLAIN:		
Other Changes:	Explain: The Department allows undergraduate students to obtain advanced credit for one 600 level course.		



Describe the existing requirement/procedure:

Currently, one 600-level course is allowed for graduate course work credit. This proposed change would provide the advanced credit option for this 600-level course to apply to Master's or Direct-Entry PhD.

Provide a detailed description of the Recommended Change (*Attach additional pages if space is not sufficient.*)

The Advanced Credit Option is open to students who were undergraduates in the Materials Engineering program at McMaster University who graduated with an overall average (CGPA) of at least B. The Advanced Credit Option allows graduate credit for one 600-level course taken during their final undergraduate year.

Rationale for the Recommended Change (How does the requirement fit into the department's program and/or tie to existing Program Learning Outcomes from the program's IQAP cyclical review?):

The accelerated credit is expected to reduce time to completion of the MASc and the PhD programs. It also helps us with recruiting McMaster undergraduate students to our graduate programs.

Provide implementation date: (*Implementation date should be at the beginning of the academic year*)

September 1, 2025

Are there any other details of the recommended change that the curriculum and policy committee should be aware of? If yes, please explain:

It is a way for us to entice our undergraduate students to enter grad studies with one less course.

Provide a description of the recommended change to be included in the calendar (please include a tracked changes version of the calendar section affected if applicable):

For 'Materials Science and Engineering, M.A.Sc.'

Alternatively, the student is required to complete two terms (8 months) of their research project with a Supervisor from the department, plus successful completion of one term 600-level half course (3 units) in the final undergraduate year for graduate credit (which also counts towards the undergraduate degree course requirements) provided it is listed within the department. Entry into the M.A.Sc. program under the Accelerated Option must occur



within one year of completing one's undergraduate degree, providing the applicant meets the same requirements for admissions as for regular students.

The Advanced Credit Option is open to students who were undergraduates in the Materials Engineering program at McMaster University who graduated with an overall average (CGPA) of at least B. The Advanced Credit Option allows graduate credit for one 600-level course taken during their final undergraduate year. The Advanced Credit Option may not be used in conjunction with the Accelerated Option.

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For 'Materials Science and Engineering, Ph.D.'

Students entering the Ph.D. program in Materials Science and Engineering are required to successfully complete at least 12 units (4 half-courses) of course work, which includes the mandatory seminar course MATLS 702 (3 units). Courses at the 700 level are offered as either a half course (3 units) or a quarter course (1.5 units), whereas courses offered at the 600-level are offered as half courses (3 units). Only one 600-level course is permitted for graduate credit. Only one non-technical half course (3 units) is permitted for graduate credit with written approval from the Supervisor.

The Advanced Credit Option is open to students who were undergraduates in the Materials Engineering program at McMaster University who graduated with an overall average (CGPA) of at least B and will be pursuing direct-entry PhD program. The Advanced Credit Option allows graduate credit for one 600-level course taken during their final undergraduate year.

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Contact information for the recommended change:

Name: Alisha Digba Email: digbaa1@mcmaster.ca Date submitted:

If you have any questions regarding this form, please contact the Assistant Secretary, School of Graduate Studies, cbryce@mcmaster.ca

Recommendation for Change in Graduate Curriculum – For Change(s) Involving Degree Program Requirements / Procedures / Milestones

NOTE: All new changes since the previous GCPC meetings are noted in **Purple**

Please read the following notes before completing this form:

1. This form must be completed for all changes involving degree program requirements/procedures. All sections of this form must be completed.
2. An electronic version of this form (must be in MS WORD not PDF) should be emailed to the Assistant Secretary, School of Graduate Studies (cbryce@mcmaster.ca).
3. A representative from the department is **required to attend** the Faculty Curriculum and Policy Committee meeting during which this recommendation for change in graduate curriculum will be discussed.

DEPARTMENT	W Booth Sep		
NAME OF PROGRAM and PLAN	Engineering in Manufacturing Engineering, M.E.M.E		
DEGREE	M.Eng		
NATURE OF RECOMMENDATION (PLEASE CHECK APPROPRIATE BOX)			
Is this change a result of an IQAP review? <input type="checkbox"/> Yes <input type="checkbox"/> No			
Creation of a New Milestone <input type="checkbox"/>			
Change in Admission Requirements	<input type="checkbox"/>	Change in Comprehensive Examination Procedure	Change in Course/Program Requirements <input checked="" type="checkbox"/>
Change in the Description of a section of the Graduate Calendar	<input checked="" type="checkbox"/>	EXPLAIN:	
Other Changes:	Explain:		

Describe the existing requirement/procedure:

This is the current recommended list of Technical Elective Courses in Biomanufacturing stream of MEME.

Recommended technical elective courses are:

- SEP 6BI3 – Bioinformatics (3 units)
- SEP 6BS3 – Biotechnology Regulations (3 units)
- SEP 729 – Manufacturing Systems (3 units)
- SEP 749 – Biomedical Engineering (3 units)
- SEP 766 – Membrane-Based Bioseparation (3 units)
- BIOMED 799 – Independent Study in Biomedical Engineering (3 units)
- Other elective courses available.
- Adding 776 and 731 to MEME-Biomanufacturing, which are existing Discrete Manufacturing courses

Adding SEP 7xx as professional development course for both MEME and MEME Bio streams

Provide a detailed description of the Recommended Change (*Attach additional pages if space is not sufficient.*)

- Adding courses 776 and 731 to MEME-Biomanufacturing recommended technical elective list. These are existing Discrete Manufacturing courses, and we would like them to be available to MEME-Bio students.
- Add SEP 7xx, course title 'The Rise of Intelligent Machines: Ethics, Society, and the Future', as a Professional Development course for MEME programs



Rationale for the Recommended Change (How does the requirement fit into the department's program and/or tie to existing Program Learning Outcomes from the program's IQAP cyclical review?):

These courses has been moved to MEST Automation stream as they were deemed more appropriate there

Adding courses 776 and 731 to MEME-Bio. These are existing Discrete Manufacturing courses, and we would like them to be available to MEME-Bio students.

AI and autonomous systems are transforming industries, economies, and societies at an unprecedented pace. Students in the MEME and MEST programs must be equipped not only with technical expertise but also with a deep understanding of the ethical, societal, and policy implications of intelligent machines. This course fills a crucial gap by providing an interdisciplinary exploration of the intersection between AI, ethics, and governance. This course aligns with the school's mission to prepare engineers for leadership roles in an AI-driven world, by offering a unique blend of technology, policy, and ethics. Through lectures, invited talks, case studies, and student-led presentations, this course fosters critical thinking, problem-solving, and ethical decision-making, key competencies for tomorrow's engineers and technology leaders navigating a rapidly evolving landscape.

Provide implementation date: (*Implementation date should be at the beginning of the academic year*)

Fall 2025

Are there any other details of the recommended change that the curriculum and policy committee should be aware of? If yes, please explain:



No

Provide a description of the recommended change to be included in the calendar (please include a tracked changes version of the calendar section affected if applicable):

Program Description

The Master of Engineering in Manufacturing Engineering is a 24 month program for full time students with an accelerated path to complete the program in 12 months of study. Part time students will normally be expected to complete the program in 3 years, one term, (40 months). The program attracts highly motivated students seeking advanced training in the discrete manufacturing. Students design their own program of studies by selecting (with approval of their academic advisor) courses of interest to them. Applications for admission to the program are made through the W Booth School of Engineering Practice and Technology. Applicants will be required to complete an online interview.

The program accepts full-time and part-time students.

In addition to the general requirements for entry into a graduate program in Engineering, students must hold a degree in Engineering or Technology with at least a B average (equivalent to a McMaster 8.0/12 GPA) in the penultimate and final years.

Delivery of the program includes a strong emphasis on project-based experience within the Manufacturing Industry, which is obtained through an industry-based project and through projects defined within courses. Requirements for these are outlined below. Due to the strong practical orientation of the project components of the program, successful completion requires that students have strong interpersonal and communication skills. Students completing the Program on a course-only basis will be required to complete 10 courses from the approved list of courses. Course selection must be done in consultation with the program lead.

Students completing the Program via course and project work will be required to complete eight courses from the approved list of courses and also successfully complete the M.Eng. project. Course and project selection must be done in consultation with the program lead.

McMaster undergraduate students may receive advanced standing for up to two 400-level courses taken at the 600-level (note that a maximum of two 600-level courses can count towards a SEPT graduate program) with the approval of the Associate Dean of Graduate Studies.

Project



Students wishing to pursue the course plus project-based option must submit a project proposal for approval by both the faculty lead as well as the Associate Director of Graduate Studies in SEPT. If the project is not approved by either individual, students will be reverted to the course based option. Students are encouraged to develop their own ideas and find industrial sponsors. Projects are ideally undertaken at local companies but may be conducted at locations inside Canada or abroad with the Program Lead's approval and provided that none of the work on the project was done prior to admission into the program. Project groups or individuals will have an industry-based supervisor (stakeholder) with whom the student team can discuss progress, arrange trials, etc. Students will also have an academic supervisor who will normally have expertise in the subject area. It is expected that the teams will meet with their supervisors on a regular basis to discuss their progress.

The project team will orally defend their final project report to an examination committee comprised of their academic supervisor and the second reader (faculty member).

Streams

Students enrolling in the MEME program can tailor their program of studies according to their career interests. Students can choose from the following streams:

- Discrete Manufacturing
- Biomanufacturing and Industrial Biotechnology

Each stream has a set of core courses and a set of recommended elective courses. Students can take maximum of 2 half courses (one term courses) at 600 level. Courses can be selected from WBooth SEPT, Chemical, Materials or Mechanical Engineering departments. Students wishing to take an elective course outside of the recommended electives need to obtain a permission from their graduate advisor.

Students should note that not all courses are offered every year.

Discrete Manufacturing Courses

Students enrolling in the program can tailor their program of studies according to their career interests. Students can take maximum of 2 half courses (one term courses) at 600 level. Courses can be selected from WBooth SEPT, Chemical, Materials or Mechanical Engineering departments. Students wishing to take an elective course outside of the recommended electives need to obtain a permission from their program lead.



Students should note that not all courses are offered every year.

There are 2 pathways towards the degree:

8 courses (24 units) + project (6 units)

- 2 or 3 professional development courses
- 3 to 4 core courses
- 1 to 2 technical elective courses
- 2 project courses

Students pursuing this option, in addition to taking 8 courses specified above, must register for the project-courses:

- [MANUF 701 / Project, Part I](#)
- [MANUF 701 / Project, Part II](#)

10 courses (30 units)

- 2 or 3 professional development courses
- 4 to 6 core courses
- 1 to 3 technical elective courses

Professional Development Courses

Professional Development courses in MEng of Manufacturing Engineering, are listed below:

- [SEP 6TC3 / Technical Communications](#)
- [SEP 725 / Practical Project Management for Today's Business Environment](#)
- [SEP 760 / Design Thinking](#)
- [SEP 773 / Leadership for Innovation](#)
- [SEP 6X03 / Livable Cities, the Built and Natural Environment](#)
- [SEP 6EP3 / Entrepreneurial Thinking & Innovation](#)
- [SEP 6MK3 / Fundamentals of Marketing](#)
- [SEP 709 / Emerging Issues, Technology and Public Policy](#)
- [SEP 710 / International Governance and Environmental Sustainability](#)



- [SEP 770 / Total Sustainability Management](#)
- SEP 7xx The Rise of Intelligent Machines Ethics, Society, and the Future

Core Courses

The following are core courses:

- [SEP 6I03 / Sustainable Manufacturing Processes](#) /MATLS 6I03
- [SEP 726 / Discrete Manufacturing Processes I](#)
- [SEP 727 / Discrete Manufacturing Processes II](#)
- [SEP 738 / Artificial Intelligence Methods in Advanced Manufacturing](#)
- [MECH ENG 729 / Manufacturing Systems](#) /SEP 729
- [CHEM ENG 720 / Lean Six Sigma for Engineers](#) /SEP 731
- [SEP 757 / Rapid Prototyping](#) /MECH ENG 759
- [SEP 780 / Advanced Robotics and Automation](#)

Technical Elective Courses

Recommended technical elective courses are:

- [MATLS 6T03 / Properties and Processing of Composites](#) SEP 6T03
- [SEP 767 / Multivariate Statistical Methods for Big Data Analysis and Process Improvement](#)
- [SEP 718 / Industrial Automation](#)
- [SEP 776 / Manufacturing Systems 2 - System Engineering, Process Integration and Simulation](#)
- [SEP 777 / Cyber-Physical Systems and Industry 4.0](#)
- ~~[SEP 736 / Railway Electrification Infrastructure and Technology](#)~~
- ~~[SEP 756 / Future electric networks, simulation challenges, and automation](#)~~
- ~~[SEP 762 / Introduction to Railway Engineering](#)~~



- ~~SEP 797 / System Assurance~~
- ~~SEP 792 / Railway Signaling and Train Control~~
- Other elective courses available.

Biomanufacturing and Industrial Biotechnology Courses

Students enrolling in the program can tailor their program of studies according to their career interests. Students can take maximum of 2 half courses (one term courses) at 600 level. Courses can be selected from WBooth SEPT, Chemical, Materials or Mechanical Engineering departments. Students wishing to take an elective course outside of the recommended electives need to obtain a permission from their program lead.

Students should note that not all courses are offered every year.

There are 2 pathways towards the degree:

- 8 courses (24 units) + project (6 units)
 - 2 mandatory courses
 - 2 or 3 professional development courses
 - 2 to 3 core courses
 - 0 to 1 technical elective courses
 -

Students pursuing this option, in addition to taking 8 courses specified above, must register for the project-courses:

- [MANUF 701 / Project, Part I](#)
- [MANUF 701 / Project, Part II](#)
- 10 courses (30 units)
 - 2 mandatory courses
 - 2 or 3 professional development courses
 - 3 to 5 core courses



- 0 to 2 technical elective courses

Professional Development Courses

Professional Development courses in MEng of Manufacturing Engineering, are listed below:

- [SEP 6TC3 / Technical Communications](#)
- [SEP 6X03 / Livable Cities, the Built and Natural Environment](#)
- [SEP 6EP3 / Entrepreneurial Thinking & Innovation](#)
- [SEP 6MK3 / Fundamentals of Marketing](#)
- [SEP 709 / Emerging Issues, Technology and Public Policy](#)
- [SEP 710 / International Governance and Environmental Sustainability](#)
- [SEP 725 / Practical Project Management for Today's Business Environment](#)
- [SEP 760 / Design Thinking](#)
- [SEP 770 / Total Sustainability Management](#)
- [SEP 773 / Leadership for Innovation](#)
- SEP 7xx The Rise of Intelligent Machines Ethics, Society, and the Future

Core Courses

The following are core courses:

2 required core courses:

- [SEP 744 / Biomanufacturing](#)
- [SEP 767 / Multivariate Statistical Methods for Big Data Analysis and Process Improvement](#)
-

Other core courses:

- [SEP 764 / Novel therapeutics and drug delivery systems](#)
- [SEP 745 / Bioassays and Biosensors in Biomanufacturing](#)



- [SEP 743 / Animal Cell Culture Engineering](#)
- [SEP 765 / Current Good Manufacturing Practice Downstream Operations](#)
- [SEP 712 / The Application of Computation Modelling for Biomanufacturing](#)

Technical Elective Courses

Recommended technical elective courses are:

- [CHEM ENG 720 / Lean Six Sigma for Engineers /SEP 731](#)
- [SEP 749 / Biomedical Engineering](#)
- [SEP 766 / Membrane-Based Bioseparation](#)
- [SEP 776 / Manufacturing Systems 2 - System Engineering, Process Integration and Simulation](#)
- [BIOMED 799 / Independent Study in Biomedical Engineering](#)
- [SEP 6BI3 / Bioinformatics](#)
- [SEP 6BS3 / Ethics and Biotechnology Regulations](#)
- [SEP 729 / Manufacturing Systems](#)

Contact information for the recommended change:

Name: **Zhen Gao** Email: gaozhen@mcmaster.ca Date submitted: March 2025

If you have any questions regarding this form, please contact the Assistant Secretary, School of Graduate Studies, cbryce@mcmaster.ca

Recommendation for Change in Graduate Curriculum – For Change(s) Involving Degree Program Requirements / Procedures / Milestones

NOTE: All new changes since the previous GCPC meetings are noted in **PURPLE**

Please read the following notes before completing this form:

1. This form must be completed for all changes involving degree program requirements/procedures. All sections of this form must be completed.
2. An electronic version of this form (must be in MS WORD not PDF) should be emailed to the Assistant Secretary, School of Graduate Studies (cbryce@mcmaster.ca).
3. A representative from the department is **required to attend** the Faculty Curriculum and Policy Committee meeting during which this recommendation for change in graduate curriculum will be discussed.

DEPARTMENT	SEPT		
NAME OF PROGRAM and PLAN	System & Technology		
DEGREE	Master of Engineering		
NATURE OF RECOMMENDATION (PLEASE CHECK APPROPRIATE BOX)			
Is this change a result of an IQAP review? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No			
Creation of a New Milestone <input type="checkbox"/>			
Change in Admission Requirements		Change in Comprehensive Examination Procedure	Change in Course/Program Requirements X
Change in the Description of a section of the Graduate Calendar	X	EXPLAIN:	
Other Changes:	Explain:		



Describe the existing requirement/procedure:

The Master of Engineering Systems and Technology (MEST) Program at W Booth School of Engineering Practice and Technology currently offers four streams:

- **Automation & Smart Systems**
- **Automotive Stream**
- **Digital Manufacturing**
- **Process Systems**
- The **Automation** stream has low enrollment, leading to difficulty in offering core courses every semester.
- We have new courses relevant to **Railway Systems** which have seen increasing interest, and there is a significant demand in the railway industry for graduates with expertise in this field.
- Adding SEP 6XX3– Battery Energy Storage Systems as 600 level courses to AUTOTECH 4BE3
- Adding SEP 7xx The Rise of Intelligent Machines: Ethics, Society, and the Future as a professional development course

Provide a detailed description of the Recommended Change (*Attach additional pages if space is not sufficient.*)

To address the low enrollment in the Automation stream and leverage the high demand for railway system expertise, we propose integrating railway system courses into the existing Automotive stream. This change aims to offer students a broader range of core course options and to align the stream with emerging industry needs.

Recommended Changes:

1. **Integrate Railway System Courses into the Automotive Stream:**
 - **Current Core Courses:** Focus primarily on automotive engineering.
 1. SEP 6AE3 / Internal Combustion Engines
 2. SEP 6DV3 / Vehicle Dynamics
 3. SEP 711 / Electric Powertrain Components Design
 4. SEP 722 / Electric Drive Vehicles / MECH ENG 760 / Electric Drive Vehicles
 5. SEP 724 / Intelligent Transportation Systems
 6. SEP 734 / Issues in Vehicle Productions
 7. SEP 740 / Deep Learning
 8. SEP 742 / Visual Perception for Autonomous Vehicles
 9. SEP 775 / Introduction to Computational Natural Language Processing
 10. SEP 798 / Management and Control of Electric Vehicle Batteries
 - **Proposed additional Core Courses:**
 1. SEP 736 / Railway Electrification Infrastructure and Technology



2. **SEP 756 / Future Electric Networks, Simulation Challenges, and Automation**
3. **SEP 762 / Introduction to Railway Engineering**
4. **SEP 797 / System Assurance**
5. **SEP 6XX3 / Smart Cities and Communities (pending GCPC approval)**
6. **SEP 792 / Signaling**
7. **SEP 7XX / Railroad Track (pending GCPC approval)**
2. **Remove core courses:**
 - **SEP 716**
3. Adding SEP 6XX3– Battery Energy Storage Systems. This course supports the department's focus on advanced energy systems, aligning with key Program Learning Outcomes (PLOs).
4. Add SEP 7xx, course title 'The Rise of Intelligent Machines: Ethics, Society, and the Future', as a Professional Development course for MEST programs.

Rationale for the Recommended Change (How does the requirement fit into the department's program and/or tie to existing Program Learning Outcomes from the program's IQAP cyclical review?):

Benefits of the Proposed Changes:

1. **Increased Enrollment and Course Offering Flexibility:**
 - o By integrating railway system courses, the Automotive and Railway stream will attract students with diverse interests and improve overall enrollment.
 - o Offering a range of core courses will provide students with more options and flexibility, addressing the current limitations in course availability.
2. **Alignment with Industry Demand:**
 - o The inclusion of railway system courses meets the growing industry demand for expertise in railway technology and Automotive and Railway systems.
 - o This will enhance the employability of graduates by equipping them with relevant skills for emerging job markets.
 - o .
3. **Removal of 716:**

Course has not been offered in several years. With addition of new courses, we do not have the capacity to offer this in the future.
4. Adding SEP 6XX3– Battery Energy Storage Systems. This course supports the department's focus on advanced energy systems, aligning with key Program Learning Outcomes (PLOs).
5. AI and autonomous systems are transforming industries, economies, and societies at an unprecedented pace. Students in the MEME and MEST programs must be equipped not only with technical expertise but also with a deep understanding of the ethical, societal, and policy implications of intelligent machines. This course fills a crucial gap by providing an interdisciplinary exploration of the intersection between AI, ethics, and governance. This course aligns with the school's mission to prepare engineers for leadership roles in an AI-



driven world, by offering a unique blend of technology, policy, and ethics. Through lectures, invited talks, case studies, and student-led presentations, this course fosters critical thinking, problem-solving, and ethical decision-making, key competencies for tomorrow's engineers and technology leaders navigating a rapidly evolving landscape.

Provide implementation date: (Implementation date should be at the beginning of the academic year)

Sep 2025

Are there any other details of the recommended change that the curriculum and policy committee should be aware of? If yes, please explain:

No

Provide a detailed description of the Recommended Change (Attach additional pages if space is not sufficient.)

Systems and Technology, M.Eng.

← Return to: [Faculty of Engineering](#)

The Master of Engineering in Systems and Technology is a 24-month program for full time students with an accelerated path to complete the program in 12 months of study. Part time students will normally be expected to complete the program in 3 years, one term (40 months). The program attracts highly motivated students seeking advanced training in the area of cyber-physical systems. Students design their own program of studies by selecting (with the approval of their academic advisor) courses of interest to them in one of the following streams: (i) Automation and Smart Systems, (ii) Automotive Stream, and (iii) Digital Manufacturing. Application for admission to the program is made through the W Booth School of Engineering Practice and Technology. The program accepts full-time and part-time students.

In addition to the general requirements for entry into a graduate program in Engineering, students must hold a Bachelors degree in Engineering, Technology, Sciences, or Software with at least a B average (equivalent to a McMaster 8.0/12 GPA) in the penultimate and final years.

Delivery of the program includes a strong emphasis on project-based experience within the Manufacturing Industry, which is obtained through an industry-based project during the coursework portion of the program. Requirements for these are outlined below. Due to the strong practical orientation of the project components of the program, successful completion requires that students have strong interpersonal and communication skills. Applicants will be required to complete an online interview.

Students completing the Program on a course-only basis will be required to complete 10 courses from the approved list of courses. Course selection must be done in consultation with the program lead.

Students completing the Program through course and project work will be required to complete eight courses from the approved list of courses, plus successful completion of the project. Course and project selection must be done in consultation with the program lead.

McMaster students may receive advanced standing for up to two 400-level courses taken at the 600-level (note that a maximum of **two** 600-level courses can count towards a SEPT graduate program) with the approval of the Associate Dean of Graduate Studies.

Project

Students wishing to pursue the project-based option must submit a project proposal for approval by both the faculty lead as well as the Associate Director of Graduate Studies in SEPT. If the project is not approved by either individual, students will be reverted to the course-based stream. Students are encouraged to develop their own ideas and find industrial sponsors. Projects are ideally undertaken at local companies but may be conducted at locations inside Canada or abroad with the Program Lead's approval and provided that none of the work on the project was done prior to admission into the program. Project groups or individuals will have an industry-based supervisor (stakeholder) with whom the student team can discuss progress, arrange trials etc. Students will also have an academic supervisor who will normally have some expertise in the subject area. It is expected that the teams will meet with their supervisors on a regular basis to discuss their progress.

The project team will orally defend their final project report to an examination committee comprised of their academic supervisor and the second reader (faculty member).



Curriculum

Students enrolling in the program choose their courses in one of the following streams:

- Automation and Smart Systems,
- Automotive Stream

- Digital Manufacturing
- Process Systems

Each stream has a set of core courses and a set of recommended elective courses. Students can take a maximum of 2 half courses (one term courses) at the 600 level.

Students wishing to take an elective course outside of the recommended electives need to obtain written permission from their graduate advisor and by the Associate Dean of Graduate Studies if outside of the program list.

Students have to complete the minimum required number of core courses in order to complete the program. There are 2 pathways towards the degree:

- 8 courses (24 units) + project (6 units)
 - 1 required course
 - 2 or 3 professional development courses
 - 3 to 4 core courses
 - 0 to 1 technical elective courses

Students pursuing this option, in addition to taking 8 courses specified above, must register for the project courses:

- [SEP 799 / M.Eng. Project in Systems and Technology Part 1](#)
- [SEP 799 / M.Eng. Project in Systems and Technology Part 2](#)

- 10 courses (30 units)
 - 1 required course
 - 2 or 3 professional development courses
 - 4 to 6 core courses
 - 0 to 2 technical elective courses

Students should note that not all courses are offered every year.

Required core courses for all streams:

- [SEP 769 / Cyber Physical Systems](#)

Professional Development Courses

Professional Development courses, common to all streams in MEng S&T, are listed below:

- [SEP 6EP3 / Entrepreneurial Thinking & Innovation](#)
- [SEP 6MK3 / Fundamentals of Marketing](#)
- [SEP 6TC3 / Technical Communications](#)
- [SEP 6X03 / Livable Cities, the Built and Natural Environment](#)
- [SEP 705 / Green Engineering, Sustainability and Public Policy](#)
- [SEP 709 / Emerging Issues, Technology and Public Policy](#)
- [SEP 710 / International Governance and Environmental Sustainability](#)
- [SEP 725 / Practical Project Management for Today's Business Environment](#)
- [SEP 760 / Design Thinking](#)
- [SEP 770 / Total Sustainability Management](#)
- [SEP 773 / Leadership for Innovation](#)
- SEP 7xx The Rise of Intelligent Machines Ethics, Society, and the Future

Courses- Automotive Stream

Core Courses

- [SEP 6AE3 / Internal Combustion Engines](#)
- [SEP 6DV3 / Vehicle Dynamics](#)
- [SEP 6XX3-Battery Energy Storage Systems](#)
- [SEP 711 / Electric Powertrain Components Design](#)
- [SEP 716 / Automotive Safety Design](#)
- [SEP 722 / Electric Drive Vehicles / MECH ENG 760 / Electric Drive Vehicles](#)
- [SEP 724 / Intelligent Transportation Systems](#)
- [SEP 734 / Issues in Vehicle Productions](#)
- [SEP 736 / Railway Electrification Infrastructure and Technology](#)
- [SEP 740 / Deep Learning](#)
- [SEP 742 / Visual Perception for Autonomous Vehicles](#)
- [SEP 775 / Introduction to Computational Natural Language Processing](#)
- [SEP 798 / Management and Control of Electric Vehicle Batteries](#)
- [SEP 756 / Future Electric Networks, Simulation Challenges, and Automation](#)
- [SEP 762 / Introduction to Railway Engineering](#)
- [SEP 797 / System Assurance](#)
- [SEP 6XX3 / Smart Cities and Communities \(pending GCPC approval\)](#)
- [SEP 792 / Signaling](#)
- [SEP 7XX / Railroad Track \(pending GCPC approval\)](#)

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Recommended Technical Electives

- [MECH ENG 6Z03 / CAD/CAM/CAE](#)
- [SEP 780 / Advanced Robotics and Automation](#)
- [SEP 783 / Sensors and Actuators](#)
- [SEP 791 / Augmented Reality, Virtual Reality and Mixed Reality](#)

Courses- Automation and Smart Systems

Core Courses

- [SEP 713 / Cloud Computing](#)
- [SEP 728 / Internet of Things \(IoT\) and industrial Internet of Things \(IoT\) Systems](#)
- [SEP 752 / Systems Modeling and Optimization](#)
- [SEP 767 / Multivariate Statistical Methods for Big Data Analysis and Process Improvement / CHEM ENG 765 / Multivariate Statistical Methods for Big Data Analysis and Process Improvement](#)
- [SEP 780 / Advanced Robotics and Automation](#)
- [SEP 785 / Machine Learning](#)
- [SEP 791 / Augmented Reality, Virtual Reality and Mixed Reality](#)
- [CAS 771 / Introduction to Big Data Systems and Applications](#)
- [SEP 740 / Deep Learning](#)
- [SEP 775 / Introduction to Computational Natural Language Processing](#)
- [SEP 742 / Visual Perception for Autonomous Vehicles](#)
- [SEP 758 / Software Design Tools and Methods](#)
- [SEP 759 / Prototyping Web and Mobile Applications](#)

Recommended Technical Electives

- [SEP 718 / Industrial Automation](#)
- [SEP 723 / Industrial Components, Networks, and Interoperability / MECH ENG 761 / Industrial Components, Networks, and Interoperability](#)
- [SEP 783 / Sensors and Actuators](#)
- [SEP 6CS3 / Computer Security](#)
- [SEP 6DA3 / Data Analytics and Big Data](#)
- [SEP 6DM3 / Data Mining](#)

Courses- Digital Manufacturing

Core Courses

- [SEP 718 / Industrial Automation](#)

- [SEP 723 / Industrial Components, Networks, and Interoperability](#) / [MECH ENG 761 / Industrial Components, Networks, and Interoperability](#)
- [SEP 728 / Internet of Things \(IoT\) and industrial Internet of Things \(IoT\) Systems](#)
- [SEP 735 / ADDITIVE MANUFACTURING](#) / [MECH ENG 735 / Additive Manufacturing](#)
- [SEP 740 / Deep Learning](#)
- [SEP 752 / Systems Modeling and Optimization](#)
- [SEP 758 / Software Design Tools and Methods](#)
- [SEP 759 / Prototyping Web and Mobile Applications](#)
- [SEP 780 / Advanced Robotics and Automation](#)
- [SEP 783 / Sensors and Actuators](#)
- [SEP 791 / Augmented Reality, Virtual Reality and Mixed Reality](#)

Recommended Technical Electives

- [SEP 6FM3 / Computer Integrated Manufacturing \(CIM\) and Flexible Manufacturing](#)
- [SEP 742 / Visual Perception for Autonomous Vehicles](#)
- [SEP 767 / Multivariate Statistical Methods for Big Data Analysis and Process Improvement](#) / [CHEM ENG 765 / Multivariate Statistical Methods for Big Data Analysis and Process Improvement](#)
- [SEP 775 / Introduction to Computational Natural Language Processing](#)
- [SEP 785 / Machine Learning](#)

Courses - Process Systems Stream

Core Courses

- [SEP 750 / Model Predictive Control Design and Implementation](#)
- [SEP 751 / Process Design and Control for Operability](#) [CHEM ENG 764 / Process Control and Design for Operability](#)
- [SEP 752 / Systems Modeling and Optimization](#)
- [SEP 767 / Multivariate Statistical Methods for Big Data Analysis and Process Improvement](#)
- [SEP 718 / Industrial Automation](#)
- [SEP 783 / Sensors and Actuators](#)
- [SEP 739 / Distributed Computing for Process Control](#)
- [SEP 740 / Deep Learning](#)

Recommended Technical Electives

- [CHEM ENG 773 / Advanced Concepts of Polymer Extrusion](#)
- [CHEM ENG 740 / Advanced PSE Tools and Methods](#)
- [SEP 6IT3 / Internet Technologies and Databases](#)



Moreover, a maximum of two courses can be selected from the following list as technical electives

Electrical Engineering

- [ECE 710 / Engineering Optimization](#)
- [ECE 732 / Non-linear Control Systems](#)
- [ECE 736 / 3D Image Processing and Computer Vision](#)
- [ECE 744 / System-on-a-Chip \(SOC\) Design and Test: Part I - Methods](#)
- [ECE 778 / Introduction to Nanotechnology](#)

Software Engineering

- [SFWR ENG 6HC3 / The Human Computer Interface](#)

Computer Science

- [COMP SCI 6F03 / Distributed Computer Systems](#)
- [COMP SCI 6TE3 / Continuous Optimization](#)

Computing and Software

- [CAS 771 / Introduction to Big Data Systems and Applications](#)

Contact information for the recommended change:

Name: Marjan Alavi Email: alavis2@mcmaster.ca Date submitted: Feb 2025

If you have any questions regarding this form, please contact the Assistant Secretary, School of Graduate Studies, cbryce@mcmaster.ca

**Recommendation for Change in Graduate Curriculum – For Change(s) Involving
Degree Program Requirements / Procedures / Milestones**

NOTE: All new
changes since the
previous GCPC
meetings are noted
in **Blue**

Please read the following notes before completing this form:

1. This form must be completed for all changes involving degree program requirements/procedures. All sections of this form must be completed.
2. An electronic version of this form (must be in MS WORD not PDF) should be emailed to the Assistant Secretary, School of Graduate Studies (cbryce@mcmaster.ca).
3. A representative from the department is **required to attend** the Faculty Curriculum and Policy Committee meeting during which this recommendation for change in graduate curriculum will be discussed.

DEPARTMENT	W Booth School of Engineering Practice and Technology		
NAME OF PROGRAM and PLAN	Engineering Entrepreneurship and Innovation, M.E.E.I.		
DEGREE	Master's in engineering (M Eng)		
NATURE OF RECOMMENDATION (PLEASE CHECK APPROPRIATE BOX)			
Is this change a result of an IQAP review? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No			
Creation of a New Milestone <input type="checkbox"/>			
Change in Admission Requirements	<input type="checkbox"/>	Change in Comprehensive Examination Procedure	Change in Course/Program Requirements
			Y
Change in the Description of a section of the Graduate Calendar	X	EXPLAIN: See below	
Other Changes:	Explain:		



Describe the existing requirement/procedure:

The current set of course courses does not have a course on (1) project management, (2) Organizational Change Management and (3) Organizational Behaviour and Human Resources

Provide a detailed description of the Recommended Change (*Attach additional pages if space is not sufficient.*)

We propose to introduce three new courses.

New Core Course: SEP 725 Practical Project Management for Today's Business Environment

New Elective Course: Organizational Change Management

New Elective Course: Organizational Behaviour and Human Resources

Changes:

- Move Sep 770 Total Sustainability Management to elective
- Rename Sep 790 Emerging Technologies for Engineering Enterprise Innovation to Engineering Innovation Project -1
- Change Full-time and part time require to match other Sep programs
- Remove Sept 795 as we added 2 project courses to this program
- [Allow MEEI students to count 600-level courses toward their program requirements.](#)
- [Add 600-level equivalents \(SEP 6MK3, SEP 6PM3, SEP 6EP3\) to the 700-level courses, providing students with the option to take either version to fulfill their requirements](#)

Rationale for the Recommended Change (How does the requirement fit into the department's program and/or tie to existing Program Learning Outcomes from the program's IQAP cyclical review?):

The new core course SEP 725 will help be immensely helpful for students to plan and execute corporate innovation successfully.

The two new electives will help students engage in corporate innovation and corporate strategy with mastery over organizational change management, and human resource management.

Moving Sep 770 from core to elective, and instead introducing SEP 725 as a core course aligns with the program's revised focus on intrapreneurship.



Remove Sept 795 as we added 2 project courses to this program

Change Full-time and part time require to match other Sep programs

Allowing students to take 600-level courses or receive credit for work completed during their undergraduate studies incentivizes them to pursue graduate studies within the department by offering a seamless pathway. Additionally, adding the 600-level equivalents (SEP 6MK3, SEP 6PM3, SEP 6EP3) to the 700-level courses provides greater flexibility in course selection while maintaining academic rigor. These changes align with Program Learning Outcomes, enhances student preparedness, and supports enrollment continuity in the SEPT graduate program.

Provide implementation date: (*Implementation date should be at the beginning of the academic year*)

The changes will be implemented in Fall 2025

Are there any other details of the recommended change that the curriculum and policy committee should be aware of? If yes, please explain:

No

Provide a description of the recommended change to be included in the calendar (please include a tracked changes version of the calendar section affected if applicable):

The Master of Engineering Entrepreneurship and Innovation program is a fast-paced program that will provide new and seasoned engineering professionals with the modern skills and insights needed to confidently engage in corporate innovation and bring technology innovation to market. Successful graduates receive the MEng degree.

Admission

Applications for admission will be made directly through the W Booth School of Engineering Practice and Technology. In addition to the general requirements for entry into a graduate program in Engineering, candidates applying to the Master of Engineering Entrepreneurship and Innovation program must hold an Honours Bachelor's degree in engineering or closely



related discipline (i.e. science, technology, math), with at least a B- average (equivalent to a McMaster 7.0 GPA out of 12) in the final year in all courses.

~~The program is intended for full-time students and the nominal program duration is 16 months. Part-time students will normally be expected to complete the program in three years and one term (40 months).~~

~~Candidates may be enrolled on a full- or part-time basis. Full-time students will complete the degree in 24 months with an accelerated path to complete in twelve consecutive months. Students are admitted for September or January. Part-time students will normally be expected to complete the program in three years and one term (40 months).~~

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McMaster undergraduate students may receive advanced standing for up to two 400-level courses taken at the 600-level (note that a maximum of two 600-level courses can count towards a SEPT graduate program) with the approval of the Associate Dean of Graduate Studies.

Courses

Students in the MEEI program must complete 10 courses (30 units).

7 core courses (21 units)

2 technical electives (6 units)

1 cross-disciplinary elective (3 units)

Core Courses

The core program consists of seven mandatory 3-unit courses:

**Students may apply a maximum of two 600-level courses toward their program requirements*

SEP 793 / Entrepreneurial Opportunity Identification

OR

SEP 6EP3 / Entrepreneurial Thinking & Innovation



SEP 773 / Leadership for Innovation

SEP 753 / ~~Enterprise Opportunity Development~~ Financial Decision Making

SEP 755 / ~~Business Launch and Development~~ Marketing Analytics

OR

SEP 6MK3 / Fundamentals of Marketing

SEP 790 / Engineering Innovation Project -1

SEP 770 / Total Sustainability Management

SEP 794 / Engineering Innovation Project -2

~~SEP 790 / Emerging Technologies for Engineering Enterprise Innovation~~

~~-SEP 725 Practical Project Management for Today's Business Environment~~

OR

SEP 6PM3 / Project Management

~~Those students who have exceptional technical backgrounds may consult the Program Lead to request an exemption for SEP 790. If approved, the student will choose an additional technical or approved cross-disciplinary elective to replace SEP 790.~~

Technical Electives

All students in the Master of Engineering Entrepreneurship and Innovation program must complete 6 units of elective courses. Students may choose any course in the Faculty of Engineering as an elective.

~~Students with an exceptional entrepreneurship project may obtain permission from the Program Lead to complete the following course towards 3 units of their elective requirements.~~



[SEP 795 / Entrepreneurship Project](#)

Cross-Disciplinary Elective Course

All students in the Master of Engineering Entrepreneurship and Innovation program are required to complete one half course (3 units) which should be selected from the following approved cross-disciplinary elective list.

SEP 701 / Theory and Practice of Policy Analysis: Frameworks and Models

SEP 709 / Emerging Issues, Technology and Public Policy

SEP 777 / Cyber-Physical Systems and Industry 4.0

SEP 729 / Manufacturing Systems

SEP 731 / Lean Six Sigma for Engineering

SEP 760 / Design Thinking

[Sept 770 Total Sustainability Management](#)

[SEP 7XXX Organizational Change Management](#)

[SEP 7XXX Organizational Behaviour and Human Resources](#)

Innovation and Entrepreneurship Projects

An essential element in the MEEI/MTEI program is an Innovation project (SEP 794). Building on key concepts and outcomes of the core course progression, students will work in groups to develop market-aligned and technologically innovative new venture concepts. The project can be derived from several important sources:

Inventions and intellectual property developed by McMaster researchers

Innovation initiatives from sponsoring organizations from the community

Original concepts or inventions from students.

[Corporate innovation challenges currently prevalent in an industry](#)

The project will allow students to experience the full cycle modern engineering and technology innovation including:



Assessing and characterizing markets and technology spaces

Developing high and unique value propositions for promising technologies

Thorough market research, competitive research, and IP management

Proof of Concept and Minimum viable product definitions

Framing a promising new business with either entrepreneurial or intrapreneurial intent

Essential financial and operational models for new ventures

~~Through the program, student groups who exhibit exceptional potential, through either the SEP 794 / Engineering Innovation Project course or other course activities, may be approved to take the elective SEP 795 / Entrepreneurship Project course elective. This intensive course provides an immersive opportunity for the project team to convert their project concepts into viable ventures that will be ready for either incubation via McMaster's Forge organization or to enter global pitch competitions. Key activities of this process include:~~

~~Rigorous proof of concept in business concept and critical technical elements.~~

~~Detailed, credible operational, financial, and marketing plans suitable for a new venture launch.~~

~~Intensive pitch preparations for competitions and even investment discussions with external parties.~~

Contact information for the recommended change:

Name: Zhen Gao Email: gaozhen@mcmaster.ca Date submitted: October 2024

If you have any questions regarding this form, please contact the Assistant Secretary, School of Graduate Studies, cbryce@mcmaster.ca

Recommendation for Change in Graduate Curriculum – For Change(s) Involving Degree Program Requirements / Procedures / Milestones

NOTE: All new changes since the previous GCPC meetings are noted in **Blue**

Please read the following notes before completing this form:

1. This form must be completed for all changes involving degree program requirements/procedures. All sections of this form must be completed.
2. An electronic version of this form (must be in MS WORD not PDF) should be emailed to the Assistant Secretary, School of Graduate Studies (cbryce@mcmaster.ca).
3. A representative from the department is **required to attend** the Faculty Curriculum and Policy Committee meeting during which this recommendation for change in graduate curriculum will be discussed.

DEPARTMENT	W Booth School of Engineering Practice and Technology		
NAME OF PROGRAM and PLAN	Technology Entrepreneurship and Innovation, M.T.E.I.		
DEGREE	Master's of Technology (M Tech)		
NATURE OF RECOMMENDATION (PLEASE CHECK APPROPRIATE BOX)			
Is this change a result of an IQAP review? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No			
Creation of a New Milestone <input type="checkbox"/>			
Change in Admission Requirements	<input type="checkbox"/>	Change in Comprehensive Examination Procedure	Change in Course/Program Requirements
			Y
Change in the Description of a section of the Graduate Calendar	X	EXPLAIN: See below	
Other Changes:	Explain:		



Describe the existing requirement/procedure:

The current set of course courses does not have a course on (1) project management, (2) Organizational Change Management and (3) Organizational Behaviour and Human Resources

Provide a detailed description of the Recommended Change (*Attach additional pages if space is not sufficient.*)

We propose to introduce three new courses.

New Core Course: SEP 725 Practical Project Management for Today's Business Environment

New Elective Course: Organizational Change Management

New Elective Course: Organizational Behaviour and Human Resources

Changes:

- Move Sep 770 Total Sustainability Management to elective
- Rename Sep 790 Emerging Technologies for Engineering Enterprise Innovation to Engineering Innovation Project -1
- Change Full-time and part time require to match other Sep program
- Remove Sept 795 as we added 2 project courses to this program
- Allow MEEI students to count 600-level courses toward their program requirements.
- Add 600-level equivalents (SEP 6MK3, SEP 6PM3, SEP 6EP3) to the 700-level courses, providing students with the option to take either version to fulfill their requirements

Rationale for the Recommended Change (How does the requirement fit into the department's program and/or tie to existing Program Learning Outcomes from the program's IQAP cyclical review?):

The new core course SEP 725 will help be immensely helpful for students to plan and execute corporate innovation successfully.

The two new electives will help students engage in corporate innovation and corporate strategy with mastery over organizational change management, and human resource management.



Moving Sep 770 from core to elective, and instead introducing SEP 725 as a core course aligns with the program's revised focus on intrapreneurship.

Remove Sept 795 as we added 2 project courses to this program

Change Full-time and part time require to match other Sep programs

Allowing students to take 600-level courses or receive credit for work completed during their undergraduate studies incentivizes them to pursue graduate studies within the department by offering a seamless pathway. Additionally, adding the 600-level equivalents (SEP 6MK3, SEP 6PM3, SEP 6EP3) to the 700-level courses provides greater flexibility in course selection while maintaining academic rigor. These changes align with Program Learning Outcomes, enhances student preparedness, and supports enrollment continuity in the SEPT graduate program.

Provide implementation date: (*Implementation date should be at the beginning of the academic year*)

The changes will be implemented in Fall 2025

Are there any other details of the recommended change that the curriculum and policy committee should be aware of? If yes, please explain:

No

Provide a description of the recommended change to be included in the calendar (please include a tracked changes version of the calendar section affected if applicable):

The Master of Technology Entrepreneurship and Innovation is a fast-paced program that will provide new and seasoned engineering professionals with the modern skills and insights needed to confidently bring technology innovation to market. Successful graduates receive the MTech degree.

Admission

While students in the Technology Entrepreneurship and Innovation program are not expected to have any engineering or scientific background, they are expected to embrace



creativity and innovation. Some basic familiarity with technology is expected, but the required technological depth will depend on the project itself and will be evaluated on a case-by-case basis. Considerable emphasis will be placed on team-based experiential learning in which all members of the team will learn from each other as they complete the project.

Applications for admission will be made directly through the W Booth School of Engineering Practice and Technology. In addition to the general requirements for entry into a graduate program in Engineering, candidates applying to the Master of Technology Entrepreneurship and Innovation program must hold an Honours Bachelor's degree from any discipline, with at least a B- average (equivalent to a McMaster 7.0 GPA out of 12) students in the final year in all courses in the discipline, or relating to the discipline, in which the applicant proposes to do graduate work.

~~The program is intended for full-time students and the nominal program duration is 16 months.~~

~~*Candidates may be enrolled on a full- or part-time basis. Full-time students will complete the degree in 24 months with an accelerated path to complete in twelve consecutive months. Students are admitted for September or January. Part-time students will normally be expected to complete the program in three years and one term (40 months).*~~

McMaster undergraduate students may receive advanced standing for up to two 400-level courses taken at the 600-level (note that a maximum of two 600-level courses can count towards a SEPT graduate program) with the approval of the Associate Dean of Graduate Studies.

Courses

Students in the MTEI program must complete 10 courses (30 units).

- 7 core courses (21 units)
- 2 technical electives (6 units)
- 1 cross-disciplinary elective (3 units)

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The core program consists of seven mandatory 3-unit courses:

*Students may apply a maximum of two 600-level courses toward their program requirements

SEP 793 / Entrepreneurial Opportunity Identification

OR

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SEP 773 / Leadership for Innovation

SEP 753 / ~~Enterprise Opportunity Development~~ Financial Decision Making

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OR

SEP 6MK3 / Fundamentals of Marketing

SEP 790 / Engineering Innovation Project -1

~~SEP 770 / Total Sustainability Management~~

SEP 794 / Engineering Innovation Project -2

~~SEP 790 / Emerging Technologies for Engineering Enterprise Innovation~~

~~SEP 725 Practical Project Management for Today's Business Environment~~

OR

SEP 6PM3 / Project Management

~~Those students who have exceptional technical backgrounds may consult the Program Lead to request an exemption for SEP 790. If approved, the student will choose an additional technical or approved cross-disciplinary elective to replace SEP 790.~~

Technical Electives

All students in the Master of Technology Entrepreneurship and Innovation must complete 6 units of elective courses. Students may choose any course in the Faculty of Engineering as an elective.

~~Students with an exceptional entrepreneurship project may obtain permission from the Program Lead to complete the following course towards 3 units of their elective requirements.~~

~~SEP 795 / Entrepreneurship Project~~

Cross-Disciplinary Elective Course

All students in the Master of Technology Entrepreneurship and Innovation program are required to complete one half course (3 units) which should be selected from the following approved cross-disciplinary elective list.

SEP 701 / Theory and Practice of Policy Analysis: Frameworks and Models

SEP 709 / Emerging Issues, Technology and Public Policy

SEP 777 / Cyber-Physical Systems and Industry 4.0

SEP 729 / Manufacturing Systems

SEP 731 / Lean Six Sigma for Engineering

SEP 760 / Design Thinking

[Sept 770 Total Sustainability Management](#)

[SEP 7XXX Organizational Change Management](#)

[SEP 7XXX Organizational Behaviour and Human Resources](#)

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Inventions and intellectual property developed by McMaster researchers

Innovation initiatives from sponsoring organizations from the community

Original concepts or inventions from students.



Corporate innovation challenges currently prevalent in an industry

The project will allow students to experience the full cycle modern engineering and technology innovation including:

Assessing and characterizing markets and technology spaces

Developing high and unique value propositions for promising technologies

Thorough market research, competitive research, and IP management

Proof of Concept and Minimum viable product definitions

Framing a promising new business with either entrepreneurial or intrapreneurial intent

Essential financial and operational models for new ventures

~~Through the program, student groups who exhibit exceptional potential, through either the SEP 794 / Engineering Innovation Project course or other course activities, may be approved to take the elective SEP 795 / Entrepreneurship Project course elective. This intensive course provides an immersive opportunity for the project team to convert their project concepts into viable ventures that will be ready for either incubation via McMaster's Forge organization or to enter global pitch competitions. Key activities of this process include:~~

~~Rigorous proof of concept in business concept and critical technical elements.~~

~~Detailed, credible operational, financial, and marketing plans suitable for a new venture launch.~~

~~Intensive pitch preparations for competitions and even investment discussions with external parties.~~

Contact information for the recommended change:

Name: Zhen Gao Email: gaozhen@mcmaster.ca Date submitted: February 2025



SCHOOL OF
GRADUATE STUDIES

Gilmour Hall, Room 212
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If you have any questions regarding this form, please contact the Assistant Secretary, School of Graduate Studies, cbryce@mcmaster.ca

To : Graduate Council

From : Christina Bryce
Assistant Graduate Secretary

At its meeting on March 13th the Faculty of Health Sciences Graduate Policy and Curriculum Committee approved the following graduate curriculum recommendations.

Please note that these recommendations were approved by the Faculty of Health Sciences.

For Approval of Graduate Council:

- **Biomedical Discovery and Commercialization**
 - **Change to Program Requirements**
- **Biomedical Innovation**
 - **Addition of a Part-time Option**
- **Child Life and Pediatric Psychosocial Care**
 - **Change to Calendar Copy**
- **Global Health***
 - **Change to Course Requirements**
- **Global Surgery**
 - **New Program Calendar Copy**
- **Health Policy***
 - **Change to Course Requirements**
- **Medical Sciences**
 - **Change to Course Requirements**
- **Public Health**
 - **Change to Admission Requirements and Calendar Copy**
- **For Information of Graduate Council:**
 - **Biomedical Discovery and Commercialization**
 - **New Course**
 - 700 Career Plan and Employability Preparation
 - **Child Life and Pediatric Psychosocial Care**
 - **Change to Course Delivery**
 - 700 Child Life Residency 1



- 701 Pediatric Psychosocial Care Residency 1
- **Global Surgery**
 - **New Courses**
 - 721 Fundamentals of Global Surgery
 - 722 Contemporary Issues in Global Surgery
 - 723 Program Planning, Monitoring, & Evaluation in Global Surgery
 - 724 Special Populations and Patient Perspectives in Global Surgery
- **Health Policy***
 - **Change to Course Title**
 1. 711 Doctoral Seminar in Health Policy
 - **New Course**
 1. 712 Doctoral Seminar in Health Policy II
- **Health Research Methodology**
 - **Change to Prerequisites**
 - 730 Introduction to Research Methods for Randomized Controlled Trials
 - 751 Observational and Analytical Research Methods
- **Medical Sciences**
 - **Course Cancellations**
- **Occupational Therapy**
 - **New Course**
 1. 756 Capstone Course - Advancing OT Practice Knowledge
- **Psychotherapy**
 - **Change to Course Title and Description**
 1. 701 Introduction to Mental Health for and Wellness
- **Speech Language Pathology**
 - **Change to Course Description**
 1. 712 Clinical Skills Lab I

*Also approved by the Faculties of Business and Social Sciences

Recommendation for Change in Graduate Curriculum – For Change(s) Involving Degree Program Requirements / Procedures / Milestones

Please read the following notes before completing this form:

1. This form must be completed for all changes involving degree program requirements/procedures. All sections of this form must be completed.
2. An electronic version of this form (must be in MS WORD not PDF) should be emailed to the Assistant Secretary, School of Graduate Studies (cbryce@mcmaster.ca).
3. A representative from the department is **required to attend** the Faculty Curriculum and Policy Committee meeting during which this recommendation for change in graduate curriculum will be discussed.

DEPARTMENT	Biochemistry and Biomedical Sciences		
NAME OF PROGRAM and PLAN	Biomedical Discovery and Commercialization		
DEGREE	MBDC		
NATURE OF RECOMMENDATION (PLEASE CHECK APPROPRIATE BOX)			
Is this change a result of an IQAP review? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No			
Creation of a New Milestone <input type="checkbox"/>			
Change in Admission Requirements	<input type="checkbox"/>	Change in Comprehensive Examination Procedure	Change in Course/Program Requirements <input checked="" type="checkbox"/>
Change in the Description of a section of the Graduate Calendar	<input type="checkbox"/>	EXPLAIN:	
Other Changes:	<input checked="" type="checkbox"/>	Explain: We would like to convert the existing Milestone into a required graduate-level course.	
Describe the existing requirement/procedure:			
Learners in the MBDC program must complete a Career Plan and Employability Preparation Milestone as a degree requirement.			



Provide a detailed description of the Recommended Change (*Attach additional pages if space is not sufficient.*)

We would like to change the completion of the Milestone requirement to completion of a newly proposed course, BIOMEDDC 700, which was formerly the milestone requirement, but is now a course with a Pass/Fail evaluation. The new course details can be seen in on the "Course Change" form. The Milestone will need to be removed and replaced with BIOMEDDC 700.

Rationale for the Recommended Change (How does the requirement fit into the department's program and/or tie to existing Program Learning Outcomes from the program's IQAP cyclical review?):

There are 3 main reasons for the recommended change. 1. The MBDC program requires that students complete an internship. We looked at other programs that have a co-op component and noted that their career preparation courses are actual pass/fail course requirements, not a milestone, so to align with other co-op programs on campus, we want to add this course to the program requirements. 2. We want to add this course to the program, so it appears as a course on the transcript, instead of a milestone, so that future employers better understand its meaning, as some employers we've encountered are unsure what a "Milestone" is. 3. Finally, we wanted to increase student engagement with this content, which is vital for their success in securing an internship. By attaching an evaluation to the content (Pass/Fail), we anticipate that student's will be better engaged and make more effort to participate in this content that is critical for their success in the program.

Provide implementation date: (*Implementation date should be at the beginning of the academic year*)

September, 2025

Are there any other details of the recommended change that the curriculum and policy committee should be aware of? If yes, please explain:

No



Provide a description of the recommended change to be included in the calendar (please include a tracked changes version of the calendar section affected if applicable):

Please see attached document "Milestones Calendar Description".

Contact information for the recommended change:

Name: Sara Andres Email: andressn@mcmaster.ca Date submitted: March 6, 2025

If you have any questions regarding this form, please contact the Assistant Secretary, School of Graduate Studies, cbryce@mcmaster.ca

Current Graduate Calendar Description of Milestone and changes to be made

In the graduate calendar, Biomedical Discovery and Commercialization, M.B.D.C, please make the following changes to account for the new course description:

Under “Additional Information”:

“The community internship provides students with an invaluable work-integrated learning opportunity. Emphasis is placed on the learning gains associated with a structured integration of theory and practice and the building of a professional network. Students have the option of securing their own internship placements, subject to the approval of the BDC Program Office. NOTE: as the majority of internship placements are expected to be in the GTA, students will be required to travel/and or relocate during their internship placement.

~~In addition to completing the required courses, students will also be required to complete the Career Plan and Employability Preparation Milestone. The milestone will provide students with pre-employment career skills and strategies for securing an internship within the health/life sciences, pharmaceutical, and biotechnology industries. Students will evaluate their personal strengths, values and goals to create a career plan. Employability strategies, including the creation of a targeted job application portfolio, active job search techniques, networking with industry, and building interviewing skills, will establish career development skills. Students will directly apply the knowledge they gain to their interactions with Hiring Managers and Recruiters for the purposes of securing an internship.”~~

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Under “Course Requirements”:

Fall

BIOMEDDC 700 / Career Plan and Employability Preparation

This course will provide students with pre-employment career skills and strategies for securing an internship within the health/life sciences, pharmaceutical, and biotechnology industries. Students will evaluate their personal strengths, values and goals to create a career plan. Employability strategies, including the creation of a targeted job application portfolio, active job search techniques, networking with industry, building interviewing skills and professional acumen, will establish career development skills. Students will directly apply the knowledge they gain to their interactions with Hiring Managers and Recruiters for the purposes of securing an internship.

Recommendation for Change in Graduate Curriculum – For Change(s) Involving Degree Program Requirements / Procedures / Milestones

Please read the following notes before completing this form:

1. This form must be completed for all changes involving degree program requirements/procedures. All sections of this form must be completed.
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DEPARTMENT	Surgery		
NAME OF PROGRAM and PLAN	Program Code : GHSMI Academic Plan: Biomedical Innovation CRP		
DEGREE	Master of Biomedical Innovation		
NATURE OF RECOMMENDATION (PLEASE CHECK APPROPRIATE BOX)			
Is this change a result of an IQAP review? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No			
Creation of a New Milestone <input type="checkbox"/>			
Change in Admission Requirements		Change in Comprehensive Examination Procedure	Change in Course/Program Requirements
Change in the Description of a section of the Graduate Calendar		EXPLAIN:	
Other Changes:	Explain: Development of a Part Time option for the Master of Biomedical Innovation Program(MBI) completed over two years as opposed to the current one year full time program.		



Describe the existing requirement/procedure:

The MBI is currently only offered as a full time one year option, with the expectation that most students will undertake the full year innovation project as part of a student innovation team.

Provide a detailed description of the Recommended Change (*Attach additional pages if space is not sufficient.*)

The Part Time option will cover exactly the same courses and learning outcomes as the Full Time option, and over the two year period students will attend four Bootcamps, the same number as the Full Time students. The program schematic for the Part Time option is attached. While Part Time students will likely be graduate research program students, particularly PhD and Post-Doctoral students, they will have the same clinical immersion experience at the beginning of their program as Full Time cohort students in order to allow them to fully understand the principles of needs driven innovation. However, unlike the Full Time students who work in innovation teams, Part Time students will generally proceed through the MBI as individuals developing their projects. Students in the two-year Part Time program option will pay the same overall tuition for their degree as the Full Time students.

Rationale for the Recommended Change (How does the requirement fit into the department's program and/or tie to existing Program Learning Outcomes from the program's IQAP cyclical review?):

The current one year Full Time MBI has attracted a wide variety of applicants from undergraduate programs such as iBioMed, Life Sciences, Health Sciences and Bioengineering as well as some practicing Health Professionals, early entrepreneurs and engineers. Innovation projects have mostly involved the "Med Tech" and Digital/software space. In order to attract research trained FHS graduate students from the large "Biotech" research space of this Faculty towards considering the MBI as a means of learning how to commercialize their research, a number of FHS researchers have suggested that a Part Time degree option would be preferable to the Full Time option. This would allow a PhD student to develop their research, while concurrently learning the innovation process.



Provide implementation date: (*Implementation date should be at the beginning of the academic year*). September 2025

Are there any other details of the recommended change that the curriculum and policy committee should be aware of? If yes, please explain:

The Part Time option would not be offered exclusively to FHS research graduate students, or to those only interested in a Biotech innovation, but it is anticipated that this particular group of individuals would find this option most attractive.

Provide a description of the recommended change to be included in the calendar (please include a tracked changes version of the calendar section affected if applicable):

Details concerning the two-year part time option now included. See attached track-changed document.

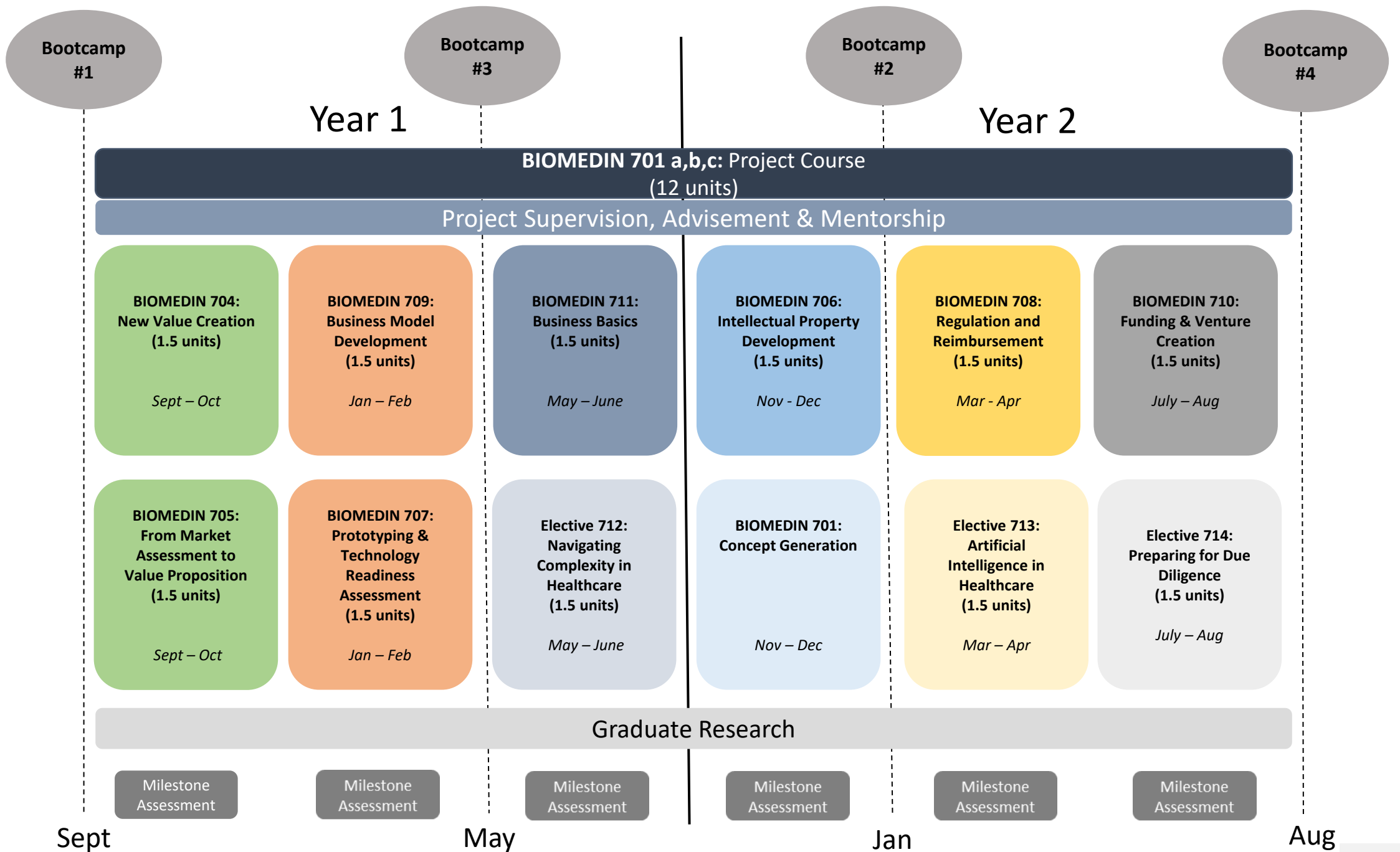
Contact information for the recommended change:

Name: Dr Alan J Neville

Email: neville@mcmaster.ca

Date submitted: 20/2/25

If you have any questions regarding this form, please contact the Assistant Secretary, School of Graduate Studies, cbryce@mcmaster.ca



Biomedical Innovation

Department of Surgery, Faculty of Health Sciences

Location: MDCL 3013

Acting Director: Alan Neville

Email: mbi@mcmaster.ca

Website: mbi.mcmaster.ca

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Program Overview

The Master of Biomedical Innovation (MBI) program is [offered as both a one-year full time and a two-year part time](#), project-oriented graduate program focused on bridging the gap between device and health system technology development and its transfer into biomedical markets. By linking the theory and practice of the biomedical innovation process, it will deliver a systematic but responsive approach to the critical, emerging discipline of innovation and entrepreneurship (I&E). Graduates with an MBI degree will have the knowledge and skills needed to seamlessly foster innovative biomedical approaches to current and future health challenges from the earliest stages (identification of real-life healthcare problems/needs, prototype development and testing) into practical, market-ready ventures.

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The project and course-based curriculum will be anchored by opportunities for immersive experiences and a series of intensive bootcamps that will guide learners through the biomedical innovation and entrepreneurship process. Learners will apply the theories and entrepreneurship competencies acquired throughout the curriculum to a program-long, venture-oriented project course. The MBI will provide opportunities to identify a biomedical problem to work on and support for those who already have a project in mind. Working in either a clinical or non-clinical environment, depending on the nature of the project, learners will complete a series of milestones that guide the creation of a novel biomedical solution and the formation of an early-stage biomedical venture. Whether a recent graduate or a seasoned professional wanting to break into a new industry, the MBI provides a unique opportunity to pursue innovation and entrepreneurship to impact health care.

Programs

[Biomedical Innovation, MBI](#)

Admission

Admission and program requirements conform to the general University regulations at the front of this Calendar. For additional information regarding the MBI application (e.g., important deadlines and how to apply online) please refer to the following website:

<https://healthinnovation.mcmaster.ca/degree-programs/mbi/>

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Program Requirements

The [full-time](#) MBI requires three terms to complete. The curriculum across the 12-month period will be divided into three phases. [The part-time program is spread over two years with six terms.](#) The project and course-based curriculum will be anchored by a series of intensive bootcamps.

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Core Courses:

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BIOMEDIN 701 A, B, C / Multi-Term Project Course

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BIOMEDIN 704 / New Value Creation

BIOMEDIN 705 / From Market Assessment to Value Proposition

BIOMEDIN 706 / Intellectual Property

BIOMEDIN 707 / Prototyping & Technology Readiness Assessment

BIOMEDIN 708 / Regulation & Reimbursement

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BIOMEDIN 709 / Business Model Development

BIOMEDIN 710 / Funding & Venture Creation

BIOMEDIN 711 / Business Basics

Elective Courses:

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BIOMEDIN 712 / Navigating Complexity: Implementing Innovation in Healthcare

BIOMEDIN 713 / Artificial Intelligence in Healthcare: Foundations & Applications

[BIOMEDIN 714 / Preparing for Due Diligence](#)

Additional Information

The MBI program will accommodate learners who enter the program with or without an existing idea for an innovation project. For all learners, the experiential, project-based course (BIOMEDIN 701 - A, B, C) will give students the opportunity to apply concepts from courses and bootcamps to their innovation project, over the 12-month program. All learners will have access to personalized coaching, mentorship, and leadership development throughout the entirety of the program to ensure milestone completion and project progress, and to facilitate project scope modifications where necessary to meet these requirements.

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Learners will be brought together in-person during four, week-long bootcamps to leverage networking, immersive experiences, and guest speakers. Bootcamps will include course work and activities where learners will be expected to apply knowledge from the courses through case studies, group discussions, or other assignments. The final Bootcamp will [include take the form of](#) a pitch competition, where each team will present progress of their innovation project to investors, stakeholders, and incubators/accelerators.

Course Offerings:

[Biomedical Innovation Courses](#)

BIOMEDIN 701 A, B, C / Multi-Term Project Course

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BIOMEDIN 704 / New Value Creation

BIOMEDIN 705 / From Market Assessment to Value Proposition

BIOMEDIN 706 / Intellectual Property

BIOMEDIN 707 / Prototyping & Technology Readiness Assessment

BIOMEDIN 708 / Regulation & Reimbursement

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BIOMEDIN 709 / Business Model Development

BIOMEDIN 710 / Funding & Venture Creation

BIOMEDIN 711 / Business Basics

**RECOMMENDATION FOR CHANGE IN GRADUATE CURRICULUM - FOR CHANGE(S)
INVOLVING DEGREE PROGRAM REQUIREMENTS / PROCEDURES / MILESTONES****IMPORTANT: PLEASE READ THE FOLLOWING NOTES BEFORE COMPLETING THIS FORM:**

1. This form must be completed for **ALL** changes involving degree program requirements/procedures. **All** sections of this form **must** be completed.
2. An electronic version of this form (must be in MS WORD **not** PDF) should be emailed to the Assistant Secretary, School of Graduate Studies (cbryce@mcmaster.ca).
3. A representative from the department is **required to attend** the Faculty Curriculum and Policy Committee meeting during which this recommendation for change in graduate curriculum will be discussed.

DEPARTMENT	Pediatrics		
NAME OF PROGRAM and PLAN	Child Life and Pediatric Psychosocial Care		
DEGREE	MSc. Child Life and Pediatric Psychosocial Care		
NATURE OF RECOMMENDATION (PLEASE CHECK APPROPRIATE BOX)			
Is this change a result of an IQAP review? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No			
CREATION OF NEW MILESTONE <input type="checkbox"/>			
CHANGE IN ADMISSION REQUIREMENTS	<input type="checkbox"/>	CHANGE IN COMPREHENSIVE EXAMINATION PROCEDURE	<input type="checkbox"/>
CHANGE IN THE DESCRIPTION OF A SECTION IN THE GRADUATE CALENDAR	<input checked="" type="checkbox"/>	EXPLAIN: The tracked changed sections highlight the request to change the CLPPC 700 Child Life Residency 1 (for Stream 1) and CLPPC 701 Pediatric Psychosocial Care Residency 1 courses (for Stream 2) to virtual offerings. By doing so, Stream 2 will no longer require FHS PAL distribution and participation barriers will be reduced for both Streams of learners. There is also an edit to reflect a name change of our professional association previously missed.	

OTHER CHANGES		EXPLAIN:	
DESCRIBE THE <u>EXISTING</u> REQUIREMENT/PROCEDURE: These current CLPPC 700 and 701 courses require students to be on campus for an intensive 4-day residency period. As such, students participate in all aspects in person for these courses. According to the IRCC, due to the in-Canada portion ("even [though] the in-Canada portion is less than six months"), all international students are required to have a study permit, despite being required in Canada for this very limited period.			

PROVIDE A DETAILED DESCRIPTION OF THE RECOMMENDED CHANGE (<i>Attach additional pages if space is not sufficient.</i>) The edits being brought forward highlight the proposed change to offer the CLPPC 700 and CLPPC 701 courses in a virtual format rather than in an intensive on campus 4-day period to circumvent any study permit delays and reduce the overall number of FHS PALs required.
RATIONALE FOR THE RECOMMENDED CHANGE (How does the requirement fit into the department's program and/or tie to existing Program Learning Outcomes from the program's IQAP cyclical review?): This recommended change will create more equitable access to all learners offered admission to this program. Stream 2s would no longer require study permits or PALs therefore leaving more for other FHS learners. Stream 1s will still require study permits due to their full-time in-Canada portions required in the fall and winter terms in Year 2 of their degrees, however this change will provide greater time for this to be acquired with the ongoing delays potentially impacting a late August arrival on campus. The 700 and 701 courses have been offered virtually in the past due to COVID restrictions. These experiences have enabled reflection and evaluation of approaches previously used in addition to new creative solutions targeted to maintain engaged learning, achievement of learning outcomes and foster the development of a community of practice as learners begin their graduate studies.
PROVIDE IMPLEMENTATION DATE: (<i>Implementation date should be at the beginning of the academic year</i>) New graduate calendar and Fall 2025.
ARE THERE ANY OTHER DETAILS OF THE RECOMMENDED CHANGE THAT THE CURRICULUM AND POLICY COMMITTEE SHOULD BE AWARE OF? IF YES, EXPLAIN. No.
PROVIDE A DESCRIPTION OF THE RECOMMENDED CHANGE TO BE INCLUDED IN THE CALENDAR (please include a tracked changes version of the calendar section affected if applicable):

Only the related sections from the graduate calendar have been included

MSc degree – Stream 1 Option

Course requirements

Students will be required to successfully complete graduate course work in addition to clinical internships and clinical skills seminars. All courses are required, with the exception of course CLPPC 720 which is offered to students eligible for remediation. The 24-month program schedule is as follows:

First Year Fall Term:

- CLPPC 700/Child Life Residency 1
- CLPPC 702/The Child, Youth and Family in Healthcare
- CLPPC 703/Research Methods in Pediatric Psychosocial Care

First Year Winter Term:

- CLPPC 706/Pediatric Psychosocial Assessment
- CLPPC 705/Grief, Loss and Bereavement in Childhood and Adolescence
- CLPPC 707/Evaluating Evidence: An Approach to Critical Evaluation of the Literature

First Year Summer Term:

- CLPPC 709/Vulnerability in Childhood and Adolescence
- CLPPC 708/Child Life: Foundations of Play
- CLPPC 712/Professional Ethics*

Second Year Fall Term:

- CLPPC 710/ Child Life Residency 2
- CLPPC 715/Child Life Clinical Internship 1 (360 hours)
- CLPPC 718/Child Life Clinical Skills Seminar 1

Second Year Winter Term:

- CLPPC 716/Child Life Clinical Internship 2 (360 hours)
- CLPPC 719/Child Life Clinical Skills Seminar 2

Second Year Summer Term:

- CLPPC 717/Program Planning and Evaluation
- CLPPC 713/Independent Master's Project

All courses are offered online with the exception of the mandatory [CLPPC 710](#) on-campus residency ~~2 week~~-courses, and clinical internships.

Required Online Modules

Online modules must also be taken by all graduate students:

- SGS 101/ Academic Research Integrity and Ethics
- SGS 201/ Accessibility for Ontarians with Disabilities act (AODA)

These modules must be completed within the first month of a student's first term in Year 1.

Students are required to successfully complete the above graduate course work in addition to clinical internships and clinical skills seminars. All are required, with the exception of course 720 which is offered to students eligible for remediation.

Clinical Internship Requirements

In addition to the required coursework, students in Stream 1 will be required to successfully complete two twelve-week internships to establish minimum entry-level competence within the scope of child life practice across identified domains. Internships and competency areas follow the criteria set forth by the [Association of Child Life Professionals \(ACLPG\)](#). Clinical internships will be evaluated utilizing an internship evaluation tool designed to assess skills and knowledge base reflective of the [CLC-Child Life Competencies](#), and the Child Life Professional Certification Exam Classification System. It will be utilized a minimum of twice per internship with the clinical preceptors in each internship, and the faculty Internship Coordinator/Clinical Educator to assess student progress and professional competencies. Internship locations at children's hospitals, general hospitals, and/or community settings vary each year, and may occur in different regions and cities. Students are responsible for their own transportation and all associated costs in order to meet this program requirement.

Health Sciences Graduate programs with clinical courses requires that all clinical activities associated with such courses must be successfully achieved for attainment of a passing grade in the course. Unsatisfactory standing or serious deficits in matters related to work in clinical settings (e.g. patient safety, ethical behaviour, professional competence), or professionalism when interacting with patients and families may result in termination of the clinical internship. In most situations termination of the clinical placement constitutes a failure and will result in the student receiving a grade of F in the Clinical Internship course and may result in dismissal from the program. Students will receive a Program Handbook, and Clinical Education Handbook which provide additional information and details regarding procedures, guidelines and requirements. In the event of a discrepancy between these documents and the Graduate Calendar, the Graduate Calendar represents the official policy.

MSc degree - Stream 2 Option

Course requirements

Complete with at least a B- standing 6 core and 3 elective graduate courses. Stream 2 students will also be required to complete the Pediatric Psychosocial Care Milestone. This milestone will provide students with the opportunity to engage in 3 interactive virtual workshops and develop ways to integrate pediatric psychosocial simulation and debriefing within their roles and in interprofessional education with others. Each learner will collate an e-portfolio with their reflections and assessment components. A 4th virtual session will be scheduled with the Centre for Simulation-Based Learning to participate in standardized patient scenarios to apply and integrate clinical skills and clinical reasoning within the presented scenarios on psychosocial topics.

- CLPPC 701/Pediatric Psychosocial Care Residency 1
- CLPPC 703/ Research Methods in Pediatric Psychosocial Care
- CLPPC 707/Evaluating Evidence: An Approach to Critical Evaluation of the Literature
- CLPPC 712/Professional Ethics
- CLPPC 704/Current Issues in Pediatric Psychosocial Care
- CLPPC 713/Independent Master's Project

Elective Options

- CLPPC 714/Special Topics in Pediatric Psychosocial Care
- RS 708 Clinical Reasoning in Rehabilitation

- RS 770 Leadership in Rehabilitation
- CLPPC 709/Vulnerability in Childhood and Adolescence
- CLPPC 706/Pediatric Psychosocial Assessment
- CLPPC 705/Grief, Loss & Bereavement in Childhood and Adolescence
- CLPPC 708/Child Life: Foundations of Play
- CLPPC 717/Program Planning and Evaluation
- CLPPC 702/The Child, Youth and Family in Healthcare
- CLPPC 721/Independent Study
- Other graduate elective(s) approved in advance by the program

All courses are offered online, ~~with the exception of the mandatory on-campus residency week course.~~

Course CLPPC 720 is only offered to students eligible for remediation.

CONTACT INFORMATION FOR THE RECOMMENDED CHANGE:

Name: Cathy Humphreys Email: humphrc@mcmaster.ca Extension: 22795 Date submitted: Nov. 2021

If you have any questions regarding this form, please contact the Assistant Secretary, School of Graduate Studies, cbryce@mcmaster.ca

SGS/2013

Recommendation for Change in Graduate Curriculum – For Change(s) Involving Degree Program Requirements / Procedures / Milestones

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DEPARTMENT	Global Health		
NAME OF PROGRAM and PLAN	Global Health		
DEGREE	MSc		
NATURE OF RECOMMENDATION (PLEASE CHECK APPROPRIATE BOX)			
Is this change a result of an IQAP review? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No			
Creation of a New Milestone <input type="checkbox"/>			
Change in Admission Requirements		Change in Comprehensive Examination Procedure	Change in Course/Program Requirements X
Change in the Description of a section of the Graduate Calendar	EXPLAIN: Revising the course offerings as some required courses are no longer offered and new course offerings have become available.		
Other Changes:	Explain: Removing required courses in Term 2 that are no longer offered. Adding recently approved Global Health courses to the required courses for Term 2. Adding relevant electives to list of approved elective courses.		



Describe the existing requirement/procedure:

In Term 2, students must select two courses from the selected field of study and one additional course from the elective offerings.

Provide a detailed description of the Recommended Change (*Attach additional pages if space is not sufficient.*)

Some of the required courses for the Global Health Management and Global Health: Disease Burden, Challenges and Changes fields of study in Term 2 are no longer offered and need to be removed from the Term 2 description. Additionally, two new Global Health courses approved within the last two years need to be included under the relevant fields of study in Term 2. The list of approved elective courses needs to be updated to encompass relevant elective offerings.

Rationale for the Recommended Change (How does the requirement fit into the department's program and/or tie to existing Program Learning Outcomes from the program's IQAP cyclical review?):

Changes are consistent with PLOs and reflect interdisciplinarity of Global Health.

Provide implementation date: (*Implementation date should be at the beginning of the academic year*)

September 2025

Are there any other details of the recommended change that the curriculum and policy committee should be aware of? If yes, please explain:

No.

Provide a description of the recommended change to be included in the calendar (please include a tracked changes version of the calendar section affected if applicable):



There is no change to the description of the Term 2 fields of study. The courses to be removed and added are outlined in the 'REVISED TEXT' section below.

Contact information for the recommended change:

Name: Deborah DiLiberto Email: diliberd@mcmaster.ca Date submitted: 31 Jan 2025

If you have any questions regarding this form, please contact the Assistant Secretary, School of Graduate Studies, cbryce@mcmaster.ca

EXISTING TEXT

Courses by Field (Term 2)

Global Health Management

- [BUSINESS C710 / Interdisciplinary Perspectives on Health Economics and Evaluation](#)
- [BUSINESS C715 / Health Care Funding and Resource Allocation](#)
- [BUSINESS C722 / Management of Population Health](#)
- [BUSINESS C740 / Interdisciplinary Perspectives on Health Care Marketing](#)

Global Health: Disease Burden, Challenges and Changes

- [GLOB HTH 707 / Global Burden of Disease](#)
- [MOL BIOL 6P03 / Medical Microbiology](#)
- [MED SCI 717 / Vaccines and Vaccine Immunology](#)
- [GLOB HTH 709 / Refugee Health Policies and Practice](#)

Globalization and Equity

- [GLOBALST 712 / International Trade and Development](#)
- [GLOBALST 777 / Global Governance](#)

- [GLOB HTH 708 / Challenges in Global Health Equity](#)
- [GLOB HTH 709 / Refugee Health Policies and Practice](#)
- [GLOBALST 704 / Global Social Governance](#)
- [GLOBALST 749 / Global Health Crises: An Interdisciplinary Perspective](#)
- [POL SCI 782 / Development Theory and Administration](#)

Elective Courses*

- [GLOB HTH 714 / Special Topics in Global Health](#)
- [GLOB HTH 715 / Independent Study I](#)
- [GLOB HTH 716 / Independent Study II](#)
- [GLOB HTH 717 / Circumpolar Health: a Global Health Perspective](#)
- [HTH RS M 770 / Mixed Methods Research Designs for Health Services and Policy Research](#)
- [PUBHLTH 706 / Introduction to Health and Public Health Economics](#)
- [BUSINESS C725 / Managing Health Communications](#)
- [BUSINESS C750 / Ethical and Legal Issues in Health Care](#)
- [ANTHROP 796 / Religion, Illness and Healing](#)
- [GLOBALST 725 / Political Economy of Global Climate Change](#)
- [GLOBALST 732 / Global Health and Environment Policy](#)
- [GEOG 734 / Qualitative Approaches to Health Geography](#)
- [HTH RS M 726 / The Science and Practice of Knowledge Translation: Foundations](#)

*Additional electives may be approved by the program to fulfill the elective requirement

REVISED TEXT

Courses by Field (Term 2)

Global Health Management

- [BUSINESS C710 / Interdisciplinary Perspectives on Health Economics and Evaluation](#)
- [BUSINESS C715 / Health Care Funding and Resource Allocation](#)
- [BUSINESS C722 / Management of Population Health](#)

- ~~[BUSINESS C740 / Interdisciplinary Perspectives on Health Care Marketing](#)~~

Global Health: Disease Burden, Challenges and Changes

- [GLOB HTH 707 / Global Burden of Disease](#)
- [GLOB HTH 709 / Refugee Health Policies and Practice](#)
- [GLOB HTH 717 / Circumpolar Health: A Global Health Perspective](#)
- [MOL BIOL 6P03 / Medical Microbiology](#)
- [MED SCI 717 / Vaccines and Vaccine Immunology](#)

Globalization and Equity

- ~~[GLOBALST 712 / International Trade and Development](#)~~
- [GLOB HTH 708 / Challenges in Global Health Equity](#)
- [GLOB HTH 709 / Refugee Health Policies and Practice](#)
- [GLOB HTH 718 / Planetary Health](#)
- [GLOBALST 704 / Global Social Governance](#)
- [GLOBALST 777 / Global Governance](#)

~~[GLOBALST 749 / Global Health Crises: An Interdisciplinary Perspective](#)~~

- ~~[POL SCI 782 / Development Theory and Administration](#)~~

Elective Courses*

- [GLOB HTH 714 / Special Topics in Global Health](#)
- [GLOB HTH 715 / Independent Study I](#)
- [GLOB HTH 716 / Independent Study II](#)
- [GLOB HTH 717 / Circumpolar Health: a Global Health Perspective](#)
- [GLOB HTH 718 / Planetary Health](#)
- [PUBHLTH 706 / Introduction to Health and Public Health Economics](#)
- [BIOLOGY 799 / Genetic Basis of Common Diseases](#)
- [BUSINESS C725 / Managing Health Communications](#)
- [BUSADMIN C735 / Developing Proposals for Health Leaders](#)
- [BUSINESS C750 / Ethical and Legal Issues in Health Care](#)
- [ANTHROP 706 / Bodies, Politics, Data](#)
- [ANTHROP 707 / Past Perspectives on Health](#)
- [ANTHROP 796 / Religion, Illness and Healing](#)
- [GLOBALST 701 / Topics in Global Studies 1](#)
- [GLOBALST 702 / Topics in Global Studies 2](#)
- [GLOBALST 703 / Acts of Global Citizenship](#)
- [GLOBALST 725 / Political Economy of Global Climate Change](#)
- [GLOBALST 732 / Global Health and Environment Policy](#)
- [GLOBALST 741 / Political Community and Statehood](#)
- [GEOG 734 / Qualitative Approaches to Health Geography](#)
- [HTH RS M 770 / Mixed Methods Research Designs for Health Services and Policy Research](#)

- [HTH RS M 726 / The Science and Practice of Knowledge Translation: Foundations](#)
- [HLTHAGE 713 / Critical Perspectives on Aging](#)
- [HLTHAGE 716 / Quantitative Research Methods](#)
- [HLTHPOL 706 / Intro to Health and Public Health Economics](#)
- [NURSING 745 / Qualitative Research Methods](#)
- [SOCSCI 708 / Critical Approaches to Community Based Research](#)

*Additional electives may be approved by the program to fulfill the elective requirement

Graduate Diploma in Global Surgery: Surgical Care Systems & Health Equity

The Graduate Diploma in Global Surgery: Surgical Care Systems & Health Equity emphasizes McMaster's commitment to advancing human and societal health and well-being locally and around the world. The program trains personnel from healthcare disciplines including physicians, nurses, and allied care providers, as well as innovators, advocates, and policy-influencers from any discipline who have a demonstrated interest in global surgery, surgical care systems and health equity. Learners will develop the knowledge, skills, and network needed to make important contributions to advancing global surgical care worldwide.

The diploma is offered asynchronously and online, offering maximum flexibility for working professionals, students or post-graduate trainees participating from anywhere in the world. The program is open to students with an undergraduate degree in any discipline and a demonstrated interest in global surgery, surgical care systems, and health equity.

The Graduate Diploma in Global Surgery builds on the strengths of the award-winning Global Health Graduate Program at McMaster University. Courses are taught by world-class faculty with experience and expertise providing surgical care and working in health care systems around the world. The program follows the McMaster Model of student-centered learning, emphasizing interdisciplinary learning in a global online setting. Learners will make the most of an innovative online curriculum combining a range of asynchronous content designed to develop their understanding, foster critical thinking, and develop practical skills through engaging learning activities.

Comprised of four courses, students complete coursework in Fundamentals of Global Surgery (GLOBHTH 721), Contemporary Issues in Global Surgery (GLOBHTH 722), Program Planning, Monitoring & Evaluation in Global Surgery (GLOBHTH 723), and Special Populations and Patient Perspectives in Global Surgery (GLOBHTH 724). Students develop a deep understanding of the global surgical landscape and learn to critically analyze a range of issues and research evidence related to global surgery and its intersections with planetary health, humanitarian contexts, and under-served populations. Students will also develop skills in program planning and evaluation, and working in diverse interprofessional teams to address global surgical issues among various populations and contexts.

Enquiries:

E-mail: askglobalhealth@mcmaster.ca

Website: <https://globalhealth.healthsci.mcmaster.ca/programs/global-surgery-diploma/>

Admission

Applicants need to meet the admission requirements for entry into Graduate Studies at McMaster University, including:

- Completion of a four-year honours undergraduate university (Bachelor's) degree (or equivalent) and a B+ average in the final year of undergraduate study. On a percentage scale, the B+ average equates to a 75 to 79% (8.5/12.0 on the McMaster grade point average scale)
- A demonstrated interest in global surgery, surgical care systems & health equity including relevant academic, professional, and lived experiences, how the program will contribute to their future plans, and what they will contribute to the program.
- A personal curriculum vitae (résumé) demonstrating background, education or experiences relating to interest in global surgery
- Two confidential academic letters of recommendation from instructors or supervisors most familiar with the academic or professional work deemed most relevant to the applicant's demonstrated interest in Global Surgery
- Applicants whose native language is not English must provide evidence of proficiency in the use of the English language. An official copy of your TOEFL score, or other evidence of competency in English is required. A minimum TOEFL (iBT) score of 92 (580 on the paper-based TOEFL test or 237 on the computer-based TOEFL test) is required. Students taking the IELTS test are required to achieve a minimum score of 6.5 with a minimum score of 5.5 in each category.

Meeting the minimum admissions requirements does not guarantee admission into the Graduate Diploma in Global Surgery: Surgical Care Systems & Health Equity. The admissions process is competitive.

Further details of the admission requirements and procedure are available at:
<https://globalhealth.healthsci.mcmaster.ca/programs/global-surgery-diploma/>

Requirements

Graduate Diploma in Global Surgery students complete the diploma online on a per course basis. The diploma is offered online and asynchronously enabling students to study from anywhere in the world. There is no requirement for students to be available on the McMaster campus. Students must have suitable access to internet and computing. To be awarded the Graduate Diploma in Global Surgery, students are required to complete the following four 3.0-unit online courses with minimum B- standing (70%).

GLOBHTH 721 / Fundamentals of Global Surgery

GLOBHTH 722 / Contemporary Issues in Global Surgery

GLOBHTH 723 / Program Planning, Monitoring & Evaluation in Global Surgery

Program Duration

Program duration is normally completed within one to two years. Students can take one or two courses per term based on the program schedule. Specific policies and procedures governing the Graduate Diploma in Global Surgery are provided on the website:

<https://globalhealth.healthsci.mcmaster.ca/programs/global-surgery-diploma/>

Recommendation for Change in Graduate Curriculum – For Change(s) Involving Degree Program Requirements / Procedures / Milestones

Please read the following notes before completing this form:

1. This form must be completed for all changes involving degree program requirements/procedures. All sections of this form must be completed.
2. An electronic version of this form (must be in MS WORD not PDF) should be emailed to the Assistant Secretary, School of Graduate Studies (cbryce@mcmaster.ca).
3. A representative from the department is **required to attend** the Faculty Curriculum and Policy Committee meeting during which this recommendation for change in graduate curriculum will be discussed.

DEPARTMENT	HEI		
NAME OF PROGRAM and PLAN	Health Policy		
DEGREE	PhD		
NATURE OF RECOMMENDATION (PLEASE CHECK APPROPRIATE BOX)			
Is this change a result of an IQAP review? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No			
Creation of a New Milestone <input type="checkbox"/>			
Change in Admission Requirements		Change in Comprehensive Examination Procedure	Change in Course/Program Requirements
Change in the Description of a section of the Graduate Calendar	X	EXPLAIN: Currently, HP PhD students take the three-credit course HLTHPOL 711 twice in their first year, once in the fall and again in the winter. For a variety of reasons, being able to separately identify the first and second of these as distinct courses, and to make clear that the winter HLTHPOL 711 requires the fall HLTHPOL 711 as a pre-requisite, has come to be useful. We, therefore, want to rename the winter term course to HLTHPOL 712 and make the fall term HLTHPOL 711 a pre-requisite for it. There is no substantive change in the material. This is only a change in the name (adding I and II suffixes) and	

		<p>changing/adding a new course number for the winter term.</p> <p>The motivation for this is threefold:</p> <ol style="list-style-type: none"> 1. Procedural clarity for students and faculty in the HP program 2. Potentially relevant in future: In support of the potential future part-time PhD in health policy, where differentiating between the material covered in each term may be important for a small number of students 3. In support of allowing non-Health Policy students into these courses. <p>This is one of a package of 3 forms similar to this one:</p> <ol style="list-style-type: none"> i) change to the degree requirements, ii) modification of the name of HLTHPOL 711 from “Doctoral Seminar in Health Policy” to “Doctoral Seminar in Health Policy I”, and introduction of HLTHPOL 712 “Doctoral Seminar in Health Policy II”.
Other Changes:	Explain:	
<p>Describe the existing requirement/procedure:</p> <p>Currently, HP PhD students take the three-credit course HLTHPOL 711 twice in their first year, once in the fall and again in the winter. For a variety of reasons, being able to separately identify the first and second of these as distinct courses, and to make clear that the winter HLTHPOL 711 requires the fall HLTHPOL 711 as a pre-requisite, has come to be useful. We, therefore, want to rename the winter term course to HLTHPOL 712 and make the fall term HLTHPOL 711 a pre-requisite for it. There is no substantive change in the material. This is only a change in the name (adding I and II suffixes) and changing/adding a new course number for the winter term.</p>		

Provide a detailed description of the Recommended Change (*Attach additional pages if space is not sufficient.*)

We, want to rename the winter term course to HLTHPOL 712 and make the fall term HLTHPOL 711 a pre-requisite for it. There is no substantive change in the material. This is only a change in the name (adding I and II suffixes) and changing/adding a new course number for the winter term. ~~2 terms of:~~

~~HLTH POL 711 / Doctoral Seminar in Health Policy~~

Rationale for the Recommended Change (How does the requirement fit into the department's program and/or tie to existing Program Learning Outcomes from the program's IQAP cyclical review?):

The motivation for this is threefold:

1. Procedural clarity for students and faculty in the HP program
2. Potentially relevant in future: In support of the potential future part-time PhD in health policy, where differentiating between the material covered in each term may be important for a small number of students
3. In support of allowing non-Health Policy students into these courses.

Provide implementation date: (*Implementation date should be at the beginning of the academic year*)

June 2025

Are there any other details of the recommended change that the curriculum and policy committee should be aware of? If yes, please explain:

NA

Provide a description of the recommended change to be included in the calendar (please include a tracked changes version of the calendar section affected if applicable):

Track change version

Course Requirements

...

Doctoral seminar

~~2 terms of:~~

~~HLTH POL 711 / Doctoral Seminar in Health Policy~~

1 term of HLTHPOL 711 / Doctoral Seminar in Health Policy I

1 term of HLTHPOL 712 / Doctoral Seminar in Health Policy II

Clean copy of new version

Course Requirements

...



Doctoral Seminar

1 term of HLTHPOL 711 / Doctoral Seminar in Health Policy I

1 term of HLTHPOL 712 / Doctoral Seminar in Health Policy II

Contact information for the recommended change:

Name: Arthur Sweetman Email: arthur.sweetman@mcmaster.ca

Date submitted:

Oct 3, 2024

If you have any questions regarding this form, please contact the Assistant Secretary, School of Graduate Studies, cbryce@mcmaster.ca

Recommendation for Change in Graduate Curriculum – For Change(s) Involving Degree Program Requirements / Procedures / Milestones

Please read the following notes before completing this form:

1. This form must be completed for all changes involving degree program requirements/procedures. All sections of this form must be completed.
2. An electronic version of this form (must be in MS WORD not PDF) should be emailed to the Assistant Secretary, School of Graduate Studies (cbryce@mcmaster.ca).
3. A representative from the department is **required to attend** the Faculty Curriculum and Policy Committee meeting during which this recommendation for change in graduate curriculum will be discussed.

DEPARTMENT	Faculty of Health Sciences				
NAME OF PROGRAM and PLAN	Medical Sciences MSc				
DEGREE	MEDSCI MSC				
NATURE OF RECOMMENDATION (PLEASE CHECK APPROPRIATE BOX)					
Is this change a result of an IQAP review? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No					
Creation of a New Milestone <input type="checkbox"/>					
Change in Admission Requirements	No	Change in Comprehensive Examination Procedure	No	Change in Course/Program Requirements	No
Change in the Description of a section of the Graduate Calendar	EXPLAIN: The Medical Sciences MSc course requirements in the Graduate Calendar currently do not specify that the 2 required courses for the MSc program must be 700 level courses as per section 2.6.4 of the Graduate Calendar under 'General Regulations.'				
Other Changes:	No	Explain: N/A			



Describe the existing requirement/procedure:

Section 2.6.4 under General Regulations in the Graduate Calendar, 'Course Requirement and Designations,' cites that "No program may allow more than one-third of their course requirements to be filled at the 600 level."

Medical Sciences MSc students are required to take 2 courses and due to the above policy, both courses must therefore be 700 level courses.

Provide a detailed description of the Recommended Change (*Attach additional pages if space is not sufficient.*)

Although the program requirement does not change and Medical Sciences MSc students must still complete two 700 level graduate courses to meet their program requirements, updated language in the Medical Sciences section of the Graduate Calendar is recommended for additional clarification.

Rationale for the Recommended Change (How does the requirement fit into the department's program and/or tie to existing Program Learning Outcomes from the program's IQAP cyclical review?):

The recommended change aligns the Medical Sciences program information in the Graduate Calendar with the General Regulations section.

Provide implementation date: (*Implementation date should be at the beginning of the academic year*)

2025-26 Academic Year (Fall 2025)

Are there any other details of the recommended change that the curriculum and policy committee should be aware of? If yes, please explain:

No

Provide a description of the recommended change to be included in the calendar (please include a tracked changes version of the calendar section affected if applicable):

The following is the recommended change in language for the [Medical Sciences MSc Degree Requirements](#) section of the Graduate Calendar. Please see the highlighted text in yellow below and the attached track changes Word file.



“The candidate must complete, with at least B- standing, at least one 700-level graduate half course in Medical Sciences, and one graduate-level half course in Medical Sciences or any other Faculty (with approval from the supervisory committee and Assistant Dean of Medical Sciences). **Medical Sciences MSc course requirements are expected to follow Section 2.6.4 of the Graduate Calendar.** The candidate is also required to present a thesis, which embodies the results of original research. In a final oral examination, the candidate will be required to defend the thesis.”

Contact information for the recommended change:

Name: Dr. Judy West-Mays Email: westmayj@mcmaster.ca Date submitted: March 3, 2025

If you have any questions regarding this form, please contact the Assistant Secretary, School of Graduate Studies, cbryce@mcmaster.ca

Medical Sciences, M.Sc.

M.Sc. Degree

Requirements

The requirements for the M.Sc. degree appear under the Regulations for the Master's degree near the beginning of this Calendar. A candidate for the M.Sc. degree is required to spend at least one calendar year in full-time study at McMaster University.

McMaster's Postgraduate Medical Education Program allows Clinician Investigator Program trainees have the opportunity to undertake a Master's or Ph.D. degree as a full-time student (please refer to the Handbook for CIP trainees and the HSGP Policy re CIP Applicants; separate applications are required for both).

The candidate must complete, with at least B- standing, at least one 700-level graduate half course in Medical Sciences, and one graduate-level half course in Medical Sciences or any other Faculty (with approval from the supervisory committee and Assistant Dean of Medical Sciences). [Medical Sciences MSc course requirements are expected to follow Section 2.6.4 of the Graduate Calendar.](#) The candidate is also required to present a thesis, which embodies the results of original research. In a final oral examination, the candidate will be required to defend the thesis.

Recommendation for Change in Graduate Curriculum – For Change(s) Involving Degree Program Requirements / Procedures / Milestones

Please read the following notes before completing this form:

1. This form must be completed for all changes involving degree program requirements/procedures. All sections of this form must be completed.
2. An electronic version of this form (must be in MS WORD not PDF) should be emailed to the Assistant Secretary, School of Graduate Studies (cbryce@mcmaster.ca).
3. A representative from the department is **required to attend** the Faculty Curriculum and Policy Committee meeting during which this recommendation for change in graduate curriculum will be discussed.

DEPARTMENT	HEI			
NAME OF PROGRAM and PLAN	Master of Public Health			
DEGREE	MPH			
NATURE OF RECOMMENDATION (PLEASE CHECK APPROPRIATE BOX)				
Is this change a result of an IQAP review? <input type="checkbox"/> Yes <input type="checkbox"/> No				
Creation of a New Milestone <input type="checkbox"/>				
Change in Admission Requirements	<input checked="" type="checkbox"/>	Change in Comprehensive Examination Procedure	<input type="checkbox"/>	Change in Course/Program Requirements
Change in the Description of a section of the Graduate Calendar	<input checked="" type="checkbox"/>	EXPLAIN: The calendar description for applications needs to be updated to align with our website and current practices (changes are in all caps and bolded or crossed out in attached document). Changes include: 1) changing requirements from a sciences background to include other relevant areas of study, since we are a multidisciplinary field; 2) We have also changed our practice of allowing a second letter of recommendation from an employer if the applicant has been out of an educational setting for 3, not 5, years.		



		https://academiccalendars.romcmaster.ca/preview_program.php?catoid=45&poid=23637
Other Changes:	Explain:	
Describe the existing requirement/procedure: See above		

Provide a detailed description of the Recommended Change (<i>Attach additional pages if space is not sufficient.</i>)
Rationale for the Recommended Change (How does the requirement fit into the department's program and/or tie to existing Program Learning Outcomes from the program's IQAP cyclical review?):
Provide implementation date: (<i>Implementation date should be at the beginning of the academic year</i>) September 2025
Are there any other details of the recommended change that the curriculum and policy committee should be aware of? If yes, please explain:
Provide a description of the recommended change to be included in the calendar (please include a tracked changes version of the calendar section affected if applicable): Here is the clean version for the graduate calendar (please see attached sheet for tracked changes)



Applications are encouraged from public health and health care professionals, physicians in post graduate residency programs, and undergraduates from health or other related programs.

Applicants need to meet the admission requirements for entry into Graduate Studies at McMaster University, including completion (or expected completion) of a 4 year undergraduate program in Sciences or other relevant programs (or equivalent, including Medicine). Applicants must also have completed a statistics or mathematics undergraduate course with B+ standing. Applicants are required to submit their CV, a personal letter of interest in the program (750 words) and ensure that two academic references are submitted to the program (applicants in practice for three or more years can substitute one from an employer).

Contact information for the recommended change:

Name: Elizabeth Alvarez Email: alvare@mcmaster.ca Date submitted: Mar 13, 2025

If you have any questions regarding this form, please contact the Assistant Secretary, School of Graduate Studies, cbryce@mcmaster.ca

March 6, 2025 - Supplement to Curriculum Changes – Program: MPH tracked changes from Graduate calendar:

https://academiccalendars.romcmaster.ca/preview_program.php?catoid=45&poid=23637

Applications are encouraged from public health and health care professionals, physicians in post graduate residency programs, and undergraduates from health **OR OTHER** related programs.

Applicants need to meet the admission requirements for entry into Graduate Studies at McMaster University, including completion (or expected completion) of a 4 year undergraduate program in Sciences **OR OTHER RELEVANT PROGRAMS** (or equivalent, including Medicine). Applicants must also have completed a statistics or mathematics undergraduate course with B+ standing. Applicants are required to submit their CV, a personal letter of interest in the program (750 words) and ensure that two **ACADEMIC** ~~letters of reference~~**S** are submitted to the program ~~(one must be an from academic references; (health professional applicants in practice for five~~ **THREE** ~~or more years can include~~ **SUBSTITUTE** ~~one from an employer) who has an academic appointment and who can speak to the applicant's academic ability.~~

To : Graduate Council

From : Christina Bryce
Assistant Graduate Secretary

Via e-ballot on November 19th, February 25th and via e-ballot on February 26th the Faculty of Humanities Graduate Curriculum and Policy Committee approved the following graduate curriculum recommendations.

Please note that these recommendations were approved by the Faculty of Humanities.

For Approval of Graduate Council:

- **Cognitive Science of Language**
 - **Change to Comprehensive Exam Procedure**
- **English and Cultural Studies**
 - **Change to Calendar Copy (M.A.)**
 - **Change to Course Requirements (Ph.D.)**
- **French**
 - **Change to Calendar Copy (M.A.)**
 - **Change to Program Requirements**
 - **Comprehensive Exam Procedure**
 - **Coursework**
 - **Doctoral Thesis Options**
 - **Language Requirement**
 - **Change to Milestones requirement**
 - **Thesis Proposal**
 - **Timeline**
- **Gender and Social Justice**
 - **Updates to Elective List**
- **Greek and Roman Studies**
 - **Change in Comprehensive Exam Procedure**
- **History**
 - **Change to Program Requirements and Comprehensive Exam Procedure**
- **Philosophy**
 - **Change to Admission Requirements (M.A.)**



- **Change to Calendar Copy and Course Requirements (M.A.)**
- **Change to Calendar Copy and Course Requirements (Ph.D.)**

For Information of Graduate Council:

- **Cognitive Science of Language**
 - **Change to Course Description and Units**
 - a. 712 Reading course (Linguistics)
 - b. 713 Reading course (Cognitive Science)
 - **Change to Course Title**
 - a. 6LC3 Advanced morphology and syntax
 - **Course Cancellation**
 - a. **714** Directed Reading course (Clinical and Applied Linguistics)
- **English and Cultural Studies**
 - **New Course**
 - 718 How to Use (and Build) Archives of Difficult Pasts: Theories, Methods, Praxis
 - **New Cross-listing and change to course description**
 - 776 Community Engaged Narrative Arts
 - **New Cross-listing and change to requisite**
 - 780 Engendering the (Queer, Trans, Non-Binary) Early Modern Stage: Then and Now
 - **New Cross-listings**
 - 752 Trans-Atlantic Indigeneity: Indigenous Literary Presence in Europe
 - 782 Seed Stories of Indigenous and Black Survivance
 - 757 Gender, Race, and Civility in Early Modern Europe
 - **Course Cancellations**
 - 758 Literature as Witness
 - 759 Victorian Natures
 - 765 Biopolitics: An Introduction
- **French**
 - **New Course**
 - 750 Readings in the Field of Specialization
- **Gender and Social Justice**
 - **Course Cancellations**
 - 702 Gender and Social Justice in Community
 - 706 From there to here: Refugee Women in the world and in our community
 - **Change to Course Level**

- 721 Social Justice Perspectives on Gender & Health
- **History**
 - **New Courses**
 - Digital Humanities
 - History of Children and Youth
 - **Change to Course Level**
 - 755 History, Heritage and Memory: How the Past is Used in Modern Western Culture
 - 757 THE BRITISH EMPIRE AND GLOBAL INTEGRATION, 1815-1960
- **Philosophy**
 - **Change to Course Title and Description**
 - 772 Design, Collaboration and Innovation in Philosophical Research

Recommendation for Change in Graduate Curriculum – For Change(s) Involving Degree Program Requirements / Procedures / Milestones

Please read the following notes before completing this form:

1. This form must be completed for all changes involving degree program requirements/procedures. All sections of this form must be completed.
2. An electronic version of this form (must be in MS WORD not PDF) should be emailed to the Assistant Secretary, School of Graduate Studies (cbryce@mcmaster.ca).
3. A representative from the department is **required to attend** the Faculty Curriculum and Policy Committee meeting during which this recommendation for change in graduate curriculum will be discussed.

DEPARTMENT		Linguistics and Languages			
NAME OF PROGRAM and PLAN		Cognitive Science of Language graduate program			
DEGREE	PhD				
NATURE OF RECOMMENDATION (PLEASE CHECK APPROPRIATE BOX)					
Is this change a result of an IQAP review? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No					
Creation of a New Milestone <input type="checkbox"/>					
Change in Admission Requirements		<input type="checkbox"/>	Change in Comprehensive Examination Procedure	<input checked="" type="checkbox"/>	Change in Course/Program Requirements
Change in the Description of a section of the Graduate Calendar			EXPLAIN:		
Other Changes:		Explain:			



Describe the existing requirement/procedure:

The Comprehensive Examination is intended to ensure that the student develops competence in a subfield of Cognitive Science of Language beyond the focus of the thesis. In consultation with the supervisory committee, the student will identify a topic for the Comprehensive that is distinct from the thesis topic.

In most cases, the Director of the Comprehensive will not be the thesis supervisor. The student and the Comprehensive Director agree in writing on the nature of the deliverable for the Comprehensive and on interim and final deadlines. At a minimum, the Comprehensive consists of a written paper and oral examination of the topic of the paper. The paper may consist of a literature review, proposal for a research project, report of a research project, or report of a teaching project. The scope of the project should be such that it can reasonably be completed within one semester; the paper will usually be 20-30 pages long.

The Comprehensive Director identifies at least one other faculty member; together, the Director and these other faculty members constitute the Comprehensive Exam Committee. (Comprehensive Directors are encouraged to recruit Comprehensive Examiners from beyond the Department of Linguistics and Languages.) The Comprehensive Director advises the student on the preparation of the paper. The Comprehensive Exam Committee determines whether the paper is ready for an oral defense, and conduct the oral examination. The oral examination consists of a brief presentation by the student of the content of the paper followed by questions from the Committee.

The Comprehensive Exam must be successfully completed within 20 months of entering the PhD program.

Provide a detailed description of the Recommended Change (*Attach additional pages if space is not sufficient.*)

The recommended change is to allow greater flexibility in the content and deliverables of the comprehensive exam. One proposed change is to recommend the length of the written paper as 10-30 pages long. The second proposed change is to allow the comprehensive examination to consist of a community outreach, knowledge mobilization, or non-academic internship projects, in addition to the originally recommended contents of the comprehensive examination (e.g., research or teaching project, or literature review).



Rationale for the Recommended Change (How does the requirement fit into the department's program and/or tie to existing Program Learning Outcomes from the program's IQAP cyclical review?):

The rationale for the first proposed change (length reduction of the written part of the comprehensive exam) reflects the increasing frequency of the comprehensive projects that involve very substantial non-written portions (coding, experimental programming, knowledge mobilization delivery). To even out the workload and make the comprehensive examinations feasible to complete within one semester, we propose to allow shorter written reports.

The rationale for the second proposed change is the expansion that we observed in the types of projects that our PhD students engage in. To facilitate their engagement with industry, community, and other non-academic partners (and thus increase their post-degree employability), we propose extending the possible content of what constitutes a comprehensive examination.

Provide implementation date: (*Implementation date should be at the beginning of the academic year*)

September 2025

Are there any other details of the recommended change that the curriculum and policy committee should be aware of? If yes, please explain:

No

Provide a description of the recommended change to be included in the calendar (please include a tracked changes version of the calendar section affected if applicable):

The Comprehensive Examination is intended to ensure that the student develops competence in a subfield of Cognitive Science of Language beyond the focus of the thesis. In consultation with the supervisory committee, the student will identify a topic for the Comprehensive that is distinct from the thesis topic.



In most cases, the Director of the Comprehensive will not be the thesis supervisor. The student and the Comprehensive Director agree in writing on the nature of the deliverable for the Comprehensive and on interim and final deadlines. At a minimum, the Comprehensive consists of a written paper and oral examination of the topic of the paper. The paper may consist of a literature review, proposal for a research project, report of a research, teaching, community outreach, or knowledge mobilization project, or report of an internship or placement with a non-academic partner ~~teaching project~~. The scope of the project should be such that it can reasonably be completed within one semester; the paper will usually be 120-30 pages long.

The Comprehensive Director identifies at least one other faculty member; together, the Director and these other faculty members constitute the Comprehensive Exam Committee. (Comprehensive Directors are encouraged to recruit Comprehensive Examiners from beyond the Department of Linguistics and Languages.) The Comprehensive Director advises the student on the preparation of the paper. The Comprehensive Exam Committee determines whether the paper is ready for an oral defense, and conduct the oral examination. The oral examination consists of a brief presentation by the student of the content of the paper followed by questions from the Committee.

The Comprehensive Exam must be successfully completed within 20 months of entering the PhD program.

Contact information for the recommended change:

Name: Victor Kuperman Email: vickup@mcmaster.ca Date submitted: 2025-01-07

If you have any questions regarding this form, please contact the Assistant Secretary, School of Graduate Studies, cbryce@mcmaster.ca

Recommendation for Change in Graduate Curriculum – For Change(s) Involving Degree Program Requirements / Procedures / Milestones

Please read the following notes before completing this form:

1. This form must be completed for all changes involving degree program requirements/procedures. All sections of this form must be completed.
2. An electronic version of this form (must be in MS WORD not PDF) should be emailed to the Assistant Secretary, School of Graduate Studies (cbryce@mcmaster.ca).
3. A representative from the department is **required to attend** the Faculty Curriculum and Policy Committee meeting during which this recommendation for change in graduate curriculum will be discussed.

DEPARTMENT	English & Cultural Studies		
NAME OF PROGRAM and PLAN	English & Cultural Studies (ECS) Master's		
DEGREE	MA Course-based stream		
NATURE OF RECOMMENDATION (PLEASE CHECK APPROPRIATE BOX)			
Is this change a result of an IQAP review? <input type="checkbox"/> Yes <input type="checkbox"/> No			
Creation of a New Milestone <input type="checkbox"/>			
Change in Admission Requirements		Change in Comprehensive Examination Procedure	Change in Course/Program Requirements
Change in the Description of a section of the Graduate Calendar		EXPLAIN:	
Other Changes:	Explain:		



Describe the existing requirement/procedure:

Course-based stream: Students in the course-based stream complete six elective one-term graduate courses or their equivalent, with grades of at least B- in each, and one required core course (ECS 799), assessed on a pass/fail basis, ~~that extends across the winter and spring/summer terms.~~ ECS 799 acts as a hub for student-centred community and discussion regarding the Public Humanities, with a particular focus on writing with/in/for communities. Students in this course devise individual **independent** public-facing research or research-creation projects and present ~~their projects~~ at a summer colloquium ~~in early August.~~

additions/deletions

Provide a detailed description of the Recommended Change (*Attach additional pages if space is not sufficient.*)

Rationale for the Recommended Change (How does the requirement fit into the department's program and/or tie to existing Program Learning Outcomes from the program's IQAP cyclical review?):

This minor change in wording is designed to remove restrictive language that limits flexibility regarding course scheduling.

In keeping with current calendar wording, ECS has to date offered this 3-unit course spread over winter/spring/summer terms. For the 2025-26 academic year, we propose to pilot 799 as a spring/summer course, with readings and seminar meetings frontloaded in May/early June, project proposal planning and workshopping in early June, independent work on projects throughout July, and submission of projects with group colloquium the first week of August. This revised timing will help MA students succeed in their six graded courses in the fall and winter terms, and to focus on this pass/fail project-based course in the spring/summer (without concern that the work and time involved takes them away from graded coursework).

If this pilot works well, we may move to offering the course on this timeline on a regular basis; if not, the new calendar wording allows us to return to the winter/summer timing.

Provide implementation date: (*Implementation date should be at the beginning of the academic year*)

Fall 2025

Are there any other details of the recommended change that the curriculum and policy committee should be aware of? If yes, please explain:

Provide a description of the recommended change to be included in the calendar (please include a tracked changes version of the calendar section affected if applicable):

Contact information for the recommended change:

Name: Dr. Melinda Gough Email: goughm@mcmaster.ca Date submitted: January 2025

If you have any questions regarding this form, please contact the Assistant Secretary, School of Graduate Studies, cbryce@mcmaster.ca

Recommendation for Change in Graduate Curriculum – For Change(s) Involving Degree Program Requirements / Procedures / Milestones

Please read the following notes before completing this form:

1. This form must be completed for all changes involving degree program requirements/procedures. All sections of this form must be completed.
2. An electronic version of this form (must be in MS WORD not PDF) should be emailed to the Assistant Secretary, School of Graduate Studies (cbryce@mcmaster.ca).
3. A representative from the department is **required to attend** the Faculty Curriculum and Policy Committee meeting during which this recommendation for change in graduate curriculum will be discussed.

DEPARTMENT		English & Cultural Studies			
NAME OF PROGRAM and PLAN		English & Cultural Studies (ECS) PhD			
DEGREE	PhD				
NATURE OF RECOMMENDATION (PLEASE CHECK APPROPRIATE BOX)					
Is this change a result of an IQAP review? <input type="checkbox"/> Yes <input type="checkbox"/> No					
Creation of a New Milestone <input type="checkbox"/>					
Change in Admission Requirements		<input type="checkbox"/>	Change in Comprehensive Examination Procedure	<input type="checkbox"/>	Change in Course/Program Requirements
					X
Change in the Description of a section of the Graduate Calendar			EXPLAIN:		
Other Changes:		Explain:			



Describe the existing requirement/procedure:

Ph.D. candidates will successfully complete six graduate courses: five one-term graduate courses in Year 1 of the program, and the Doctoral Seminar, in year 2. Up to two one-term courses may be taken outside the department, subject to the permission of offering departments.

Provide a detailed description of the Recommended Change (*Attach additional pages if space is not sufficient.*)

Coursework:

Slight reduction in coursework will facilitate earlier transition to dissertation-related Year 1 milestones (short proposal, approval of comps reading list, comps reading/writing), while retaining key opportunities that Year 1 graduate courses provide for intellectual community and cohort building.

Added wording clarifies approval process for courses outside the department to count toward degree requirements.

Rationale for the Recommended Change (How does the requirement fit into the department's program and/or tie to existing Program Learning Outcomes from the program's IQAP cyclical review?):

Provide implementation date: (*Implementation date should be at the beginning of the academic year*)

Fall 2025

Are there any other details of the recommended change that the curriculum and policy committee should be aware of? If yes, please explain:

Provide a description of the recommended change to be included in the calendar (please include a tracked changes version of the calendar section affected if applicable):

Coursework:

Ph.D. candidates will successfully complete six **five** graduate courses: **five** ~~four~~ one-term graduate courses in Year 1 of the program, and the Doctoral Seminar, in Year 2. Up to two one-term courses

relevant to the student's research interests may be taken outside the department, subject to permission by the offering departments and the ECS Graduate Studies Committee.

(added text/deleted text)

Thesis Proposal

By March 1 of the first year of the program, students must identify an area of specialization and submit a preliminary thesis proposal (with bibliography) signed by a potential supervisor and reader for approval by the Graduate Studies Committee. With the guidance of their supervisory committee and their peers in the Year 2 Doctoral Seminar, students will develop a detailed thesis proposal. The detailed proposal, signed by members of the student's supervisory committee, is due by June 30 of the second year.

Comprehensive Examination

Students are required to take a Comprehensive Examination in an area related to their intended field of research specialization. This examination, which takes place in the second year of study, consists of two papers, a Field Survey and a Topic Paper, which will be defended in an oral examination. The Field Survey should show broad expertise in the wider field of knowledge the candidate's research will engage. The Topic Paper describes how the candidate's dissertation intervenes in that field and the particular contribution it will make. A reading list for the Comprehensive Examination must be approved by all members of the supervisory committee during the first year of the program. Both papers are researched and written concurrently by the candidate, and each should be between 25 and 30 double-spaced pages in length. The Oral Examination will follow within 10 days of submission. The candidate's performance in the Comprehensive Examination will be assessed on a pass/fail basis for the Field Survey, the Topic Paper, and the Oral Examination. Please check the English and Cultural Studies Requirement Handbook for additional details and due dates.

Contact information for the recommended change:

Name: Dr. Melinda Gough Email: goughm@mcmaster.ca Date submitted: January 2025

If you have any questions regarding this form, please contact the Assistant Secretary, School of Graduate Studies, cbryce@mcmaster.ca

Grad Calendar Programme Description:

Overall Programme Description Calendar Changes:

English and Cultural Studies, Ph.D

The Ph.D. ~~d~~egree ~~p~~rogram normally entails four years of study. The admission requirement is an M.A. with marks of at least A- in two thirds of their Masters level courses. In recent years, successful candidates typically achieved an average of A (at least 85%) in their upper-level undergraduate and M.A. coursework. The Graduate Studies Committee will give consideration to matching candidates' proposed projects with the research expertise of available faculty members.

Program Requirements

Coursework

Ph.D. candidates will successfully complete ~~six-five~~ graduate courses: ~~four~~ive one-term graduate courses in Year 1 of the program, and the Doctoral Seminar, in Year 2. Up to two one-term courses relevant to the student's research interests may be taken outside the department, subject to ~~the~~ permission by the~~of~~ offering departments and the ECS Graduate Studies Committee.

Thesis Proposal

By March 1 of the first year of the program, students must identify an area of specialization and submit a ~~1,000-1,200-word~~ preliminary thesis proposal (with bibliography) signed by a potential supervisor and reader for approval by the Graduate Studies Committee. With the guidance of their supervisory committee and their peers in the Year 2 Doctoral Seminar, students will develop a detailed thesis proposal ~~of 2,000 words and submit it. The detailed proposal, signed by members of the student's supervisory committee, is due~~ by June 30 of the second year, ~~along with signatures of their supervisory committee members, to the Graduate Studies Committee.~~

Comprehensive Examination

Students ~~in the program~~ are required to take a Comprehensive Examination in an area related to their intended field of research specialization. This examination, which takes place in the second year of study, consists of two papers, a Field Survey and a Topic Paper, which will be defended in an oral examination. The Field Survey should show broad expertise in the wider field of knowledge the candidate's research will engage. The Topic Paper describes how the candidate's dissertation intervenes in that field and the particular contribution it will make. A reading list for the Comprehensive Examination must approved by all members of the supervisory committee during the first year of the program. Both papers are ~~to be~~ researched and written concurrently by the candidate, and each should be between 25 and 30 double-spaced pages in length. The Oral Examination ~~of both papers~~ will follow within 10 days of submission. The candidate's performance in the Comprehensive Examination will be assessed on a pass/fail basis for the Field Survey, the Topic Paper, and the Oral Examination. Please check the English and Cultural Studies Requirement Handbook for additional details and due dates.

Doctoral Seminar

This course, completed in Year 2 of the program, focuses on practical elements of research and other aspects of professionalization in literary and cultural studies. Required for PhD students; pass/fail.

Thesis

During the third and fourth year of the program, the candidate will write a scholarly thesis normally of between 200 and 250 pages (not including bibliography), and will defend it at an Oral Examination.

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Recommendation for Change in Graduate Curriculum – For Change(s) Involving Degree Program Requirements / Procedures / Milestones

<u>Please read the following notes before completing this form:</u>			
1. This form must be completed for all changes involving degree program requirements/procedures. All sections of this form must be completed. 2. An electronic version of this form (must be in MS WORD not PDF) should be emailed to the Assistant Secretary, School of Graduate Studies (cbryce@mcmaster.ca). 3. A representative from the department is required to attend the Faculty Curriculum and Policy Committee meeting during which this recommendation for change in graduate curriculum will be discussed.			
DEPARTMENT		French	
NAME OF PROGRAM and PLAN		M.A. in French	
DEGREE	M.A. degree in French		
NATURE OF RECOMMENDATION (PLEASE CHECK APPROPRIATE BOX)			
Is this change a result of an IQAP review? <input type="checkbox"/> Yes <input type="checkbox"/> No			
Creation of a New Milestone <input type="checkbox"/>			
Change in Admission Requirements	<input type="checkbox"/>	Change in Comprehensive Examination Procedure	Change in Course/Program Requirements
Change in the Description of a section of the Graduate Calendar	X	EXPLAIN: Revising the languages in the “Additional Information” section of the Calendar for French M.A.	
Other Changes:	Explain:		

Describe the existing requirement/procedure:Additional Information

All M.A. students must pass the workshop on Instruments and Methods of Research in French Literary Studies (Pass/Fail). In addition, students are expected to participate in four other professionalization workshops offered during the academic year.

Provide a detailed description of the Recommended Change (*Attach additional pages if space is not sufficient.*)

Revising the language and the nature of the additional requirements. The name “Instruments and Methods of Research in French Literary Studies” has been changed to “Workshop on Bibliographic Research Tools and Methods”, and the expression “professional workshops” has been replaced by more specific description (please see the section “Provide a description of the recommended change to be included in the calendar” below).

Rationale for the Recommended Change (How does the requirement fit into the department’s program and/or tie to existing Program Learning Outcomes from the program’s IQAP cyclical review?):

We wish to align these requirements with the changes proposed in the corresponding section of the Ph.D. Program.

Provide implementation date: (*Implementation date should be at the beginning of the academic year*)

September 2025

Are there any other details of the recommended change that the curriculum and policy committee should be aware of? If yes, please explain:

n/a

Provide a description of the recommended change to be included in the calendar (please include a tracked changes version of the calendar section affected if applicable):

Additional Information

The current version:

All M.A. students must pass the workshop on Instruments and Methods of Research in French Literary Studies (Pass/Fail). In addition, students are expected to participate in four other professionalization workshops offered during the academic year.

The proposed version: All M.A. students must complete the Workshop on Bibliographic Research Tools and Methods (topics such as Omni search tool, formulating research questions, citation formats, citation management tools, Library services to graduate students), organized in collaboration with the Graduate Studies Librarian, Mills Library. To be completed in September after the admission to the program. Pass/Fail.

In addition, students must attend two conferences or events organized by the Department of French or other department or programs in the Faculty of Humanities, the Department of Indigenous Studies, the Wilson College of Leadership and Civic Engagement or the Sherman Centre for Digital Scholarship. 300 words report from the event must be submitted to the student's supervisor and to <fredept@mcmaster.ca>

Contact information for the recommended change:

Name: Elzbieta Grodek Email: grodeke@mcmaster.ca Date submitted: Jan. 28, 2025

If you have any questions regarding this form, please contact the Assistant Secretary, School of Graduate Studies, cbryce@mcmaster.ca



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[SEARCH](#) [MENU](#)

ACADEMIC CALENDARS

**McMaster
University**

School of Graduate Studies Calendar, 2024-2025

French, M.A.

M.A. Degree

The following streams are available for the M.A. in French on a full- or part-time basis. Admission requirements conform to the general University regulations. Applicants whose specialization is in linguistics, French or Francophone literatures and cultures, are encouraged to apply to the M.A. program. The M.A. degree normally requires a full year to complete.

Registration in three (3) graduate half courses in Term 1 is mandatory for all M.A. students, independent of the stream pursued.

A. M.A. with Project

The candidate is required to:

1. obtain a grade of at least B- in each of six half courses, one of which, FRENCH 705 Introduction to Literary and Critical Theory, is mandatory. Exceptionally, after consultation with the Department, one graduate course at the 700-level may be taken outside of the Department in a subject related to student's research. With the approval of the Graduate Program Committee a student may select a course of study under: FRENCH 730 Lectures Dirigees.
2. write in French, under the supervision of a member of the Department of French, a Major Research Paper (MRP)

normally amounting to 35-45 double-spaced typewritten pages (excluding bibliography). The paper must be on an approved subject, present solid research and critical analysis. The student must successfully defend this project at an oral examination conducted in French.

B. M.A. with Thesis

Admission to the M.A. thesis stream is not automatic with admission to the M.A. program. By the end of the first term and after submitting a formal request, students will require approval in writing from their prospective supervisor, submission of a formal thesis proposal and approval by the Departmental Graduate Studies Committee.

The candidate is required to:

1. obtain a grade of at least B- in each of four half courses, one of which, FRENCH 705 Introduction to Literary and Critical Theory, is mandatory. Exceptionally, after consultation with the Department, one graduate course at the 700-level may be taken outside of the Department in a subject related to a student's research. With the approval of the Graduate Program Committee a student may also select a course of study under: FRENCH 730 Lectures Dirigees.
2. write, under the supervision of a member of the Department of French, a thesis that would normally amount to 80-120 double-spaced typewritten pages. The thesis should be on an approved subject, embodying the results of original research and showing independent critical judgment. The student must successfully defend this thesis at an oral examination normally conducted in French.

Additional Information

~~All M.A. students must pass the workshop on Instruments and Methods of Research in French Literary Studies (Pass/Fail). In addition, students are expected to participate in four other professionalization workshops offered during the academic year.~~

All M.A. students must complete the Workshop on Bibliographic Research Tools and Methods (topics such as Omni search tool, formulating research questions, citation formats, citation management tools, Library services to graduate students), organized in collaboration with the Graduate Studies Librarian, Mills Library. To be completed in September after the admission to the program. Pass/Fail.

In addition, students must attend two conferences or events organized by the Department of French or other department or programs in the Faculty of Humanities, the Department of Indigenous Studies, the Wilson College of Leadership and Civic Engagement or the Sherman Centre for Digital Scholarship. 300 words report from the event must be submitted to the student's supervisor and to <fredept@mcmaster.ca>

All graduate students, including part time students, must also complete [coursesSGS 101](#) Academic Research Integrity and Ethics and [SGS 201](#) Accessibility for Ontarians with Disabilities Act (AODA). Please refer to section 2.6.5 for more information. A graduate student may not obtain a graduate degree at McMaster without having passed these courses.

◊ [FRENCH 730 / Lectures Dirigees](#)

Registration in Program

By January 15 of the academic year of initial registration, full-time M.A. students must declare their choice of Program A or B. Students opting for either program must have a thesis or MRP subject and a thesis or MRP committee approved by January 31. Part-time graduate students must declare their choice of Program A (M.A. with Thesis) or B (M.A. with MRP) on completion of four half courses and must, before registering in their final courses, have their thesis or MRP subject and examining committee approved by the Department.



[CONTACT TERMS &
CONDITIONS](#)

[PRIVACY POLICY](#)

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Recommendation for Change in Graduate Curriculum – For Change(s) Involving Degree Program Requirements / Procedures / Milestones

<u>Please read the following notes before completing this form:</u>				
<p>1. This form must be completed for all changes involving degree program requirements/procedures. All sections of this form must be completed.</p> <p>2. An electronic version of this form (must be in MS WORD not PDF) should be emailed to the Assistant Secretary, School of Graduate Studies (cbryce@mcmaster.ca).</p> <p>3. A representative from the department is required to attend the Faculty Curriculum and Policy Committee meeting during which this recommendation for change in graduate curriculum will be discussed.</p>				
DEPARTMENT		French		
NAME OF PROGRAM and PLAN		Ph.D. in French		
DEGREE	Doctor of Philosophy in French			
NATURE OF RECOMMENDATION (PLEASE CHECK APPROPRIATE BOX)				
Is this change a result of an IQAP review? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No				
Creation of a New Milestone <input type="checkbox"/>				
Change in Admission Requirements		Change in Comprehensive Examination Procedure	X	Change in Course/Program Requirements
Change in the Description of a section of the Graduate Calendar		X	EXPLAIN: The SGS Calendar "Comprehensive Field Examination" description will need to be revised if this change is approved.	
Other Changes:	Explain: 			

Describe the existing requirement/procedure:

All Ph.D. candidates must successfully complete 2 comprehensive examinations, normally within the first 20 months of the program. The first examination is literary in nature and requires a deep knowledge of primary sources, critical analysis methods and critical questions relevant to the field and to the researched topic. The second examination is of a theoretical or interdisciplinary nature. In each case, the students are given one week to write a 15-20 page (excluding bibliography) critical essay after choosing one of the three questions proposed by the committee. An oral defense follows the submission of the completed essay to the committee members.

Provide a detailed description of the Recommended Change (*Attach additional pages if space is not sufficient.*)

The Department is proposing that a single comprehensive examination (to take place for all Ph.D. students in June of Ph.D.1) replace our current arrangement. The new required course, FRENCH 750, will help to prepare the students for this examination through 8 to 12 in-depth sessions with the supervisor to explore key readings in the field. (See the form submitted to introduce new course FRENCH 750). The students will be given two weeks to write a 15-20 page (excluding bibliography) critical essay after choosing one of the three questions proposed by the committee. An oral defense will follow the submission of the completed essay to the committee members. The examination will be assessed on a pass/fail basis.

The option of publishing an article instead of writing the examination essay is removed.

Rationale for the Recommended Change (How does the requirement fit into the department's program and/or tie to existing Program Learning Outcomes from the program's IQAP cyclical review?):

This proposed single comprehensive examination will cover material and critical perspectives related to the student's research topic, discussed during FRENCH 750 course "Readings in the Fields of Specialization." Reducing two comprehensive examinations to one and aligning readings with the dissertation's topic are designed to expedite the student's progress through the program.

Provide implementation date: (*Implementation date should be at the beginning of the academic year*)

September 2025
<p>Are there any other details of the recommended change that the curriculum and policy committee should be aware of? If yes, please explain:</p> <p>No.</p>
<p>Provide a description of the recommended change to be included in the calendar (please include a tracked changes version of the calendar section affected if applicable):</p> <p>The section “Comprehensive Field Examination”:</p> <p>New Version :</p> <p>PhD candidates must take a comprehensive examination on key readings in their field of specialization in the spring of the first year of their PhD studies. Students will be given two weeks to write a 15-20 page critical essay to be submitted to their supervisory committee and an oral examination will follow. Candidates must display in-depth knowledge of their field as well as proving their proficiency in the French language. Candidates must obtain a passing grade. In the event of a failing grade, they will have one opportunity to retake the comprehensive field examination. The second and final attempt should occur within three months of the date of their first examination.</p>
<p>Contact information for the recommended change:</p> <p>Name: Dr. John Stout Email: stoutj@mcmaster.ca Date submitted: January 30, 2025</p>

If you have any questions regarding this form, please contact the Assistant Secretary, School of Graduate Studies, cbryce@mcmaster.ca

McMaster**0**

SEARCH MENU

ACADEMIC CALENDARS

**McMaster
University****School of Graduate Studies Calendar, 2024-2025****French, Ph.D.**

Ph.D. Degree

Admission

The Ph.D. Degree Program will normally be four years in length. Students will be admitted to the Ph.D. program with a completed M.A. in French literature or linguistics, or in a program deemed equivalent. Equivalence will be granted on a case by case basis in consultation with the School of Graduate Studies. Students must obtain a minimum B+ average or equivalent at the Master's level to be considered for admission. All applicants will be required to submit official transcripts, two letters of recommendation, and a detailed statement of interest. As a rule, part-time studies will not be an option at the Ph.D. level. However, in exceptional circumstances, permission to pursue the doctorate part-time might be granted, provided the student adheres to a rigorously scheduled plan of action for completion of all degree requirements within a reasonably limited timeframe.

Note: Applicants to the French Graduate programme are exempted from the TOEFL requirement.

Fields in the program

The Ph.D. program, "Francophonie et diversité", comprises the following three fields:

1. Francophone* Theories, Languages and Literatures of the 20th and 21st centuries.
2. Colonial and Post-Colonial Contexts in the Francophone World.
3. Discourse and Representation of the Ancien Regime and 19th Century.

Note: 'Francophone' includes France and other French-speaking countries and regions.

Program Requirements

The program will be four years in length. Within the first five months of residency, students will select a thesis supervisor who will in turn recommend, for the student's approval, at least two other colleagues - to a maximum of four - as members of the supervisory committee. The Graduate Studies Committee, normally comprised of the Graduate Chair, the Chair of the department, two faculty members and two students (one from the MA, one from the Ph.D. program), will also vet supervisory committees. During their third year of the program, students may elect to study or do research abroad, audit classes in other disciplines, at McMaster or at other universities, or participate in a field work/internship program in a Francophone region or country. To spend a period of time in a Francophone region or country, students must obtain the written approval of their committee and of the School of Graduate Studies.

Course Work

All PhD students must complete six half-courses (three units each) within the first year of the program. One of them, FRENCH 705 Introduction to Literary and Critical Theory is required.

Doctoral students who took a course similar to FRENCH 705 in their M.A. program at another university, may submit a syllabus and a reading list of such a course with a request that it be counted as an equivalent. If the permission is granted, they will take instead, as the sixth mandatory seminar, one of the following:

- ◊ another course offered by the department
- ◊ FRENCH 730 - Lectures Dirigées /Reading Course
- ◊ a course offered by another department if relevant to student's research

Doctoral students who took FRENCH 705 when completing their M. A. degree in French at McMaster will also substitute it by one of the courses from the list above.

The listing of all courses can be found in the following section of the SGS Calendar: [French Courses](#). Not all of the listed courses are offered every year.

All Ph.D. students must pass the workshop on Instruments and Methods of Research in French Literary Studies (Pass/Fail).

All graduate students, including part time students, must also complete courses [SGS 101](#) Academic Research Integrity and Ethics and [SGS 201](#) Accessibility for Ontarians with Disabilities Act (AODA). Please refer to section 2.6.5 for more information. A graduate student may not obtain a graduate degree at McMaster without having passed these courses.

Milestones

MILESTONES In addition to the Course Work, the Learning Portfolio milestone will be required with four parts to the milestone. Once successfully completed, it will appear on the student's transcript. A minimum of four milestones must be successfully completed before the end of the second year of the Ph.D. program. These milestones are considered formal components of the student's academic progress. They will normally be assessed at the time of the student's supervisory committee meeting at the end of the second year.

Admissible activities for the obtention of the "Milestones" requirement are as follows:

1. Participation in four professional workshops organized by the Department of French
2. Successful completion of course EDU 750/751 (Please note: This course can also be taken to replace the language requirement. Under no circumstances can EDU 750/751 count both as a Milestone and as a replacement for the language requirement.)
3. Participation in four activities of the Sherman Centre for Digital Scholarship (e.g. the workshop "Introduction to Digital Scholarship" from the series "Demystifying Digital Scholarship", talks from the series "Graduate

Symposium", talks by an invited speaker).

4. Participation in four activities of the Indigenous Studies Program (e.g. public lectures, Indigenous Graduate Students Symposium, events organized by the Six Nations of the Grand River community).

5. Participation in four activities organized by any of the following programs or institutes: MacPherson Institute for Leadership, Innovation & Excellence in Teaching, Gender Studies and Feminist Research Program, Peace Studies, the Institute on Globalization & the Human Condition.

NB. For points 3-5: proof of participation will be presented to the student's supervisory committee through a one-page reflective statement

6. Presentation of a paper at the annual French Department Students' Colloquium

7. Presentation of a paper at the annual French Department Conference Series

8. Peer-reviewed publication in French

9. Peer-reviewed published or exhibited creative works in French

10. Presentation of the candidate's research for the Hamilton Francophone community (for example in high schools or on a radio program)

11. Submission of a Course Description / Course Outline

12. Submission of a Teaching Philosophy

NB. For points 11-12: in consultation with MacPherson Institute.

13. Submission of a Research Statement

14. Submission of a Grant Application

NB. For points 13-14: these documents must be approved by the student's supervisory committee. Ph.D. students are encouraged to present their Milestones to their supervisory committee using the e-Learning Portfolio.

Language Requirement

Candidates will successfully pass a proficiency examination in a language other than English or French, consisting of translation into French or English of an approximately one-page text. The choice of language should be made by the candidate in consultation with her/his supervisory committee. With the approval of the Department of French Graduate Studies Committee and the candidate's supervisory committee, this language requirement may be substituted by:

- ◊ Successful completion of a 6-unit undergraduate language course, intermediate or advance level, with a minimum grade of B+
- ◊ Successful completion of the course EDU 750/751 Principles and Practices of University Teaching offered by MIIETL (MacPherson Institute for Innovation & Excellence in Teaching and Learning). The description of the course may be found in the following section of the SGS Calendar: Faculty of Humanities - French - French Courses.
- ◊ Successful completion of a three-unit, doctoral-level course in another discipline relevant to the candidate's research topic.

This requirement may be fulfilled at any time before completion of the degree.

Comprehensive Field Examinations

~~Ph.D. candidates in consultation with their supervisory committee will choose two areas of concentration. The first will be literary in nature and it will require a deep knowledge of primary sources, critical analysis methods and criti-~~

real questions relevant to the field and to the researched topic. The second area of concentration will be theoretical or interdisciplinary. Students will be asked to demonstrate knowledge of either (a) theoretical frameworks relevant to their research (e.g. postcolonialism, gender studies and queer theory, psychoanalytic criticism, narratology, semiotics, reader response criticism) or (b) interdisciplinary affiliations between literature and other fields relevant to their research (e.g. philosophy, medicine, film, arts, material culture). Candidates will submit an extensive bibliography for each area of concentration and will be assessed by way of a written examination. Candidates will be given one week to complete a 15-20 page paper, excluding bibliography, for each area. The written examination will be followed by an oral defence. Full-time students will write these examinations within the first twenty months of their program, that is, before the end of April of their second year of residency, assuming the student began residency in September of the first year. These exams are intended as opening stages of the doctoral dissertation. For each examination, candidates must prove their proficiency in the French language and their competence in their selected areas of specialization. They must display in-depth knowledge, not only of the primary texts, but also of the existing scholarship in their areas of concentration. Candidates must obtain a passing grade. In the event of a failing grade, candidates will have one opportunity to rewrite their examinations. This second and final attempt should occur within three months of the date of their first examination. In place of a comprehensive examination paper, students will have the choice to write an original article that will be submitted to a recognized, peer-reviewed journal in their field. The article will be a minimum length of 7000 words.

PhD candidates must take a comprehensive examination on key readings in their field of specialization in the spring of the first year of their PhD studies. Students will be given two weeks to write a 15-20 page critical essay to be submitted to their supervisory committee and an oral examination will follow. Candidates must display in-depth knowledge of their field as well as proving their proficiency in the French language. Candidates must obtain a passing grade. In the event of a failing grade, they will have one opportunity to retain the comprehensive field examination. The second and final attempt should occur within three months of the date of their first examination.

Thesis Proposal

Students will prepare a 20-25 page (excluding the bibliography) thesis proposal in consultation with their thesis supervisor. This project will then be presented and examined by the candidate's supervisory committee. An oral defence of the project, conducted by the supervisory committee, must be successfully completed before the candidate can proceed with research and preparation of the thesis manuscript. This requirement should be completed within the first 24 months of the candidate's program.

Doctoral Thesis

During the third or fourth year of the program, candidates will write a scholarly thesis of approximately 250 pages (including notes and bibliography), and will defend it at an Oral Examination. The oral examination of the thesis will normally be conducted in French.

Required courses

- [FRENCH 705 / Introduction to Literary and Critical Theory](#)

Timeline

First Year

- Completion of 6 half courses within 12 months of start date
- Completion of a research methodology workshop

- Selection of thesis supervisor and supervisory committee (as soon as possible and within the first 5 months of study, before the end of January at the latest)
- Two areas of concentration to be determined in conjunction with committee members
- Submission of the First Year Progress Report (before the 12th month)

Second Year

- Comprehensive exams or publishable articles to be completed within the first 20 months of the program. If the article option is chosen, the article will be submitted to a recognized, peer-review journal in the relevant field.

- A 25-page (excluding the bibliography) thesis proposal to be completed and defended orally within the first 24 months
- Submission of Annual Progress Report (before the 24th month)

Third Year

- Submission of draft chapters of the thesis
- Potential study/research/internship in a Francophone country or in a country related to student's research
- Submission of Annual Progress Report (before the 36th month)

Fourth Year

Submission of the final draft of the thesis; the thesis defence; uploading of the final, electronic version of the thesis to the MacSphere



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CONDITIONS

PRIVACY POLICY

1280 Main Street West. Hamilton, Ontario L8S 4L8. (905) 525-9140

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Recommendation for Change in Graduate Curriculum – For Change(s) Involving Degree Program Requirements / Procedures / Milestones

Please read the following notes before completing this form:			
1. This form must be completed for all changes involving degree program requirements/procedures. All sections of this form must be completed.			
2. An electronic version of this form (must be in MS WORD not PDF) should be emailed to the Assistant Secretary, School of Graduate Studies (cbryce@mcmaster.ca).			
3. A representative from the department is required to attend the Faculty Curriculum and Policy Committee meeting during which this recommendation for change in graduate curriculum will be discussed.			
DEPARTMENT	French		
NAME OF PROGRAM and PLAN	Ph.D. in French		
DEGREE	Doctor of Philosophy in French		
NATURE OF RECOMMENDATION (PLEASE CHECK APPROPRIATE BOX)			
Is this change a result of an IQAP review? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No			
Creation of a New Milestone <input type="checkbox"/>			
Change in Admission Requirements		Change in Comprehensive Examination Procedure	Change in Course/Program Requirements X
Change in the Description of a section of the Graduate Calendar	X	Updated description of the course work.	
Other Changes:	No.	Explain:	
Describe the existing requirement/procedure:			
Students admitted to the French PhD program “Francophonie et diversité” must take six three-unit seminars, including FRENCH 705, during their first year in the program.			

Provide a detailed description of the Recommended Change (*Attach additional pages if space is not sufficient.*)

During their first year in the program, each incoming Ph.D. student will take 5 three-unit seminars: FRENCH 705, the new FRENCH 750, and three 700-level seminars. Ph.D. students will be allowed to take 600-level courses by permission of the department.

Rationale for the Recommended Change (How does the requirement fit into the department's program and/or tie to existing Program Learning Outcomes from the program's IQAP cyclical review?):

The purpose of this change is to streamline the requirements in response to the August 2024 report "Shortening the Ph.D." and to the report submitted by French Ph.D. students after their meeting with the lead of the "Shortening the Ph.D." project.

Provide implementation date: (*Implementation date should be at the beginning of the academic year*)

September 2025

Are there any other details of the recommended change that the curriculum and policy committee should be aware of? If yes, please explain:

No.

Provide a description of the recommended change to be included in the calendar (please include a tracked changes version of the calendar section affected if applicable):

Course Work

All PhD students must complete five half-courses (three units each) within the first year of the program. Two of them are required, FRENCH 705: Introduction to Literary and Critical Theory and FRENCH 750: Readings in Fields of Specialization. The other three half-courses will all be 700-level courses. Students in the first year of their Ph.D. studies may take a 600-level course in place of one of these three 700-level courses with permission of the Department.

Doctoral students who took a course similar to FRENCH 705 in their M.A. program at another university, may submit a syllabus and a reading list of such a course with a request that it be

counted as an equivalent. If the permission is granted, they will take instead, as the fifth mandatory seminar, one of the following:

- another course offered by the department
- FRENCH 730 - *Lectures Dirigées* /Reading Course
- a course offered by another department if relevant to student's research and by written permission of the department

Doctoral students who took FRENCH 705 when completing their M. A. degree in French at McMaster will also substitute it by one of the courses from the list above.

The listing of all courses can be found in the following section of the SGS Calendar: [French Courses](#). Not all of the listed courses are offered every year.

All Ph.D. students must complete the Workshop on Bibliographic Research Tools and Methods, organized in collaboration with the Graduate Studies Librarian, Mills Library. To be completed in September after the admission to the program. Pass/Fail.

All graduate students, including part time students, must also complete courses [SGS 101](#) Academic Research Integrity and Ethics and [SGS 201](#) Accessibility for Ontarians with Disabilities Act (AODA). Please refer to section 2.6.5 for more information. A graduate student may not obtain a graduate degree at McMaster without having passed these courses.

Contact information for the recommended change:

Name: Dr. John Stout Email: stoutj@mcmaster.ca Date submitted: January 30, 2025

If you have any questions regarding this form, please contact the Assistant Secretary, School of Graduate Studies, cbryce@mcmaster.ca



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SEARCH MENU

ACADEMIC CALENDARS

**McMaster
University**

School of Graduate Studies Calendar, 2024-2025

French, Ph.D.

Ph.D. Degree

Admission

The Ph.D. Degree Program will normally be four years in length. Students will be admitted to the Ph.D. program with a completed M.A. in French literature or linguistics, or in a program deemed equivalent. Equivalence will be granted on a case by case basis in consultation with the School of Graduate Studies. Students must obtain a minimum B+ average or equivalent at the Master's level to be considered for admission. All applicants will be required to submit official transcripts, two letters of recommendation, and a detailed statement of interest. As a rule, part-time studies will not be an option at the Ph.D. level. However, in exceptional circumstances, permission to pursue the doctorate part-time might be granted, provided the student adheres to a rigorously scheduled plan of action for completion of all degree requirements within a reasonably limited timeframe.

Note: Applicants to the French Graduate programme are exempted from the TOEFL requirement.

Fields in the program

The Ph.D. program, "Francophonie et diversité", comprises the following three fields:

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Program: French, Ph.D. - McMaster University - Modern Campus Catalog™

1. Francophone* Theories, Languages and Literatures of the 20th and 21st centuries.
2. Colonial and Post-Colonial Contexts in the Francophone World.
3. Discourse and Representation of the Ancien Regime and 19th Century.

Note: 'Francophone' includes France and other French-speaking countries and regions.

Program Requirements

The program will be four years in length. Within the first five months of residency, students will select a thesis supervisor who will in turn recommend, for the student's approval, at least two other colleagues - to a maximum of four - as members of the supervisory committee. The Graduate Studies Committee, normally comprised of the Graduate Chair, the Chair of the department, two faculty members and two students (one from the MA, one from the Ph.D. program), will also vet supervisory committees. During their third year of the program, students may elect to study or do research abroad, audit classes in other disciplines, at McMaster or at other universities, or participate in a field work/internship program in a Francophone region or country. To spend a period of time in a Francophone region or country, students must obtain the written approval of their committee and of the School of Graduate Studies.

Course Work

All PhD students must complete ~~six~~ **five** half-courses (three units each) within the first year of the program. ~~One~~ **Two** of them **are required**, FRENCH 705: Introduction to Literary and Critical Theory ~~is required and~~ **FRENCH 750: Readings in Fields of Specialization. The other three half-courses will all be 700-level courses. Students in the first year of their PhD studies may take a 600-level course in place of one of these three 700-level courses with permission of the Department.**

Doctoral students who took a course similar to FRENCH 705 in their M.A. program at another university, may submit a syllabus and a reading list of such a course with a request that it be counted as an equivalent. If the permission is granted, they will take instead, as the ~~sixth~~ **fifth** mandatory seminar, one of the following:

- another course offered by the department
- FRENCH 730 - Lectures Dirigées /Reading Course
- a course offered by another department if relevant to student's research **and by written permission from the department**

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Doctoral students who took FRENCH 705 when completing their M.A. degree in French at McMaster will also substitute it by one of the courses from the list above.

The listing of all courses can be found in the following section of the SGS Calendar: [French Courses](#). Not all of the listed courses are offered every year.

All Ph.D. students must pass the workshop on Instruments and Methods of Research in French Literary Studies (Pass/Fail).

All Ph.D. students must complete the Workshop on Bibliographic Research Tools and Methods, organized in collaboration with the Graduate Studies Librarian, Mills Library. To be completed in September after the admission to the program. Pass/Fail.

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All graduate students, including part time students, must also complete courses [SGS 101](#) Academic Research Integrity and Ethics and [SGS 201](#) Accessibility for Ontarians with Disabilities Act (AODA). Please refer to section 2.6.5 for more information. A graduate student may not obtain a graduate degree at McMaster without having passed these courses.

Milestones

MILESTONES In addition to the Course Work, the Learning Portfolio milestone will be required with four parts to the milestone. Once successfully completed, it will appear on the student's transcript. A minimum of four milestones must be successfully completed before the end of the second year of the Ph.D. program. These milestones are considered formal components of the student's academic progress. They will normally be assessed at the time of the student's supervisory committee meeting at the end of the second year.

Admissible activities for the obtention of the "Milestones" requirement are as follows:

1/28/25, 2:08 PM

Program: French, Ph.D. - McMaster University - Modern Campus Catalog™

1. Participation in four professional workshops organized by the Department of French
2. Successful completion of course EDU 750/751 (Please note: This course can also be taken to replace the language requirement. Under no circumstances can EDU 750/751 count both as a Milestone and as a replacement for the language requirement.)
3. Participation in four activities of the Sherman Centre for Digital Scholarship (e.g. the workshop "Introduction to Digital Scholarship" from the series "Demystifying Digital Scholarship", talks from the series "Graduate

Symposium", talks by an invited speaker).

4. Participation in four activities of the Indigenous Studies Program (e.g. public lectures, Indigenous Graduate Students Symposium, events organized by the Six Nations of the Grand River community).
5. Participation in four activities organized by any of the following programs or institutes: MacPherson Institute for Leadership, Innovation & Excellence in Teaching, Gender Studies and Feminist Research Program, Peace Studies, the Institute on Globalization & the Human Condition.

NB. For points 3-5: proof of participation will be presented to the student's supervisory committee through a one-page reflective statement

6. Presentation of a paper at the annual French Department Students' Colloquium
7. Presentation of a paper at the annual French Department Conference Series
8. Peer-reviewed publication in French
9. Peer-reviewed published or exhibited creative works in French
10. Presentation of the candidate's research for the Hamilton Francophone community (for example in high schools or on a radio program)
11. Submission of a Course Description / Course Outline
12. Submission of a Teaching Philosophy

NB. For points 11-12: in consultation with MacPherson Institute.

13. Submission of a Research Statement
14. Submission of a Grant Application

NB. For points 13-14: these documents must be approved by the student's supervisory committee. Ph.D. students are encouraged to present their Milestones to their supervisory committee using the E-Learning Portfolio.

Language Requirement

Candidates will successfully pass a proficiency examination in a language other than English or French, consisting of translation into French or English of an approximately one-page text. The choice of language should be made by the candidate in consultation with her/his supervisory committee. With the approval of the Department of French Graduate Studies Committee and the candidate's supervisory committee, this language requirement may be substituted by:

- ° Successful completion of a 6-unit undergraduate language course, intermediate or advance level, with a minimum grade of B+
- ° Successful completion of the course EDU 750/751 Principles and Practices of University Teaching offered by MIIETL (MacPherson Institute for Innovation & Excellence in Teaching and Learning). The description of the course may be found in the following section of the SGS Calendar: Faculty of Humanities - French - French Courses.
- ° Successful completion of a three-unit, doctoral-level course in another discipline relevant to the candidate's research topic.

This requirement may be fulfilled at any time before completion of the degree.

Comprehensive Field Examinations

Ph.D. candidates in consultation with their supervisory committee will choose two areas of concentration. The first will be literary in nature and it will require a deep knowledge of primary sources, critical analysis methods and criti-

cal questions relevant to the field and to the researched topic. The second area of concentration will be theoretical or interdisciplinary. Students will be asked to demonstrate knowledge of either (a) theoretical frameworks relevant to their research (e.g. postcolonialism, genre studies and queer theory, psychoanalytic criticism, narratology, semiotics, reader response criticism) or (b) interdisciplinary affiliations between literature and other fields relevant to their research (e.g. philosophy, medicine, film, arts, material culture). Candidates will submit an extensive bibliography for each area of concentration and will be assessed by way of a written examination. Candidates will be given one week to complete a 15-20 page paper, excluding bibliography, for each area. The written examination will be followed by an oral defence. Full-time students will write these examinations within the first twenty months of their program, that is, before the end of April of their second year of residency, assuming the student began residency in September of the first year. These exams are intended as opening stages of the doctoral dissertation. For each examination, candidates must prove their proficiency in the French language and their competence in their selected areas of specialization. They must display in-depth knowledge, not only of the primary texts, but also of the existing scholarship in their areas of concentration. Candidates must obtain a passing grade. In the event of a failing grade, candidates will have one opportunity to rewrite their examinations. This second and final attempt should occur within three months of the date of their first examination. In place of a comprehensive examination paper, students will have the choice to write an original article that will be submitted to a recognized, peer-reviewed journal in their field. The article will be a minimum length of 7000 words.

Thesis Proposal

Students will prepare a 20-25 page (excluding the bibliography) thesis proposal in consultation with their thesis supervisor. This project will then be presented and examined by the candidate's supervisory committee. An oral defence of the project, conducted by the supervisory committee, must be successfully completed before the candidate can proceed with research and preparation of the thesis manuscript. This requirement should be completed within the first 24 months of the candidate's program.

Doctoral Thesis

During the third or fourth year of the program, candidates will write a scholarly thesis of approximately 250 pages (including notes and bibliography), and will defend it at an Oral Examination. The oral examination of the thesis will normally be conducted in French.

Required courses

- [FRENCH 705 / Introduction to Literary and Critical Theory](#)

Timeline

First Year

- Completion of 6 half courses within 12 months of start date
- Completion of a research methodology workshop
- Selection of thesis supervisor and supervisory committee (as soon as possible and within the first 5 months of study, before the end of January at the latest)
- Two areas of concentration to be determined in conjunction with committee members
- Submission of the First Year Progress Report (before the 12th month)

Second Year

- Comprehensive exams or publishable articles to be completed within the first 20 months of the program. If the article option is chosen, the article will be submitted to a recognized, peer-review journal in the relevant field.

- A 25-page (excluding the bibliography) thesis proposal to be completed and defended orally within the first 24 months
- Submission of Annual Progress Report (before the 24th month)

Third Year

- Submission of draft chapters of the thesis
- Potential study/research/internship in a Francophone country or in a country related to student's research
- Submission of Annual Progress Report (before the 36th month)

Fourth Year

Submission of the final draft of the thesis; the thesis defence; uploading of the final, electronic version of the thesis to the MacSphere



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[PRIVACY POLICY](#)

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Recommendation for Change in Graduate Curriculum – For Change(s) Involving Degree Program Requirements / Procedures / Milestones

Please read the following notes before completing this form:

1. This form must be completed for all changes involving degree program requirements/procedures. All sections of this form must be completed.
2. An electronic version of this form (must be in MS WORD not PDF) should be emailed to the Assistant Secretary, School of Graduate Studies (cbryce@mcmaster.ca).
3. A representative from the department is **required to attend** the Faculty Curriculum and Policy Committee meeting during which this recommendation for change in graduate curriculum will be discussed.

DEPARTMENT	French		
NAME OF PROGRAM and PLAN	Ph.D. in French		
DEGREE	Doctor of Philosophy in French		
NATURE OF RECOMMENDATION (PLEASE CHECK APPROPRIATE BOX)			
Is this change a result of an IQAP review? <input type="checkbox"/> Yes <input type="checkbox"/> No			
Creation of a New Milestone <input type="checkbox"/>			
Change in Admission Requirements		Change in Comprehensive Examination Procedure	Change in Course/Program Requirements
Change in the Description of a section of the Graduate Calendar	X	EXPLAIN: Introduction of the “sandwich thesis” option.	
Other Changes:	Explain:		



Describe the existing requirement/procedure:

Currently, the only doctoral thesis option is a monograph of approximately 250 pages (including notes and bibliography).

Provide a detailed description of the Recommended Change (*Attach additional pages if space is not sufficient.*)

Students who enter the Department of French Ph.D. as of September 2025 will have the option of completing their degree via the “sandwich thesis” format. Please see the relevant pages of the SGS document “Guide for the Preparation of Master’s and Doctoral Theses” (specifically Section 1.3 on page 4 of the Guide and Sections 5.1 to 5.11 on pages 10 to 13 of the Guide) for a description of the “sandwich thesis.”

Rationale for the Recommended Change (How does the requirement fit into the department’s program and/or tie to existing Program Learning Outcomes from the program’s IQAP cyclical review?):

Introducing “sandwich thesis” as an alternate format will give students more flexibility while promoting and recognizing students’ publishing activities.

Provide implementation date: (*Implementation date should be at the beginning of the academic year*)

September 2025

Are there any other details of the recommended change that the curriculum and policy committee should be aware of? If yes, please explain:

n/a

Provide a description of the recommended change to be included in the calendar (please include a tracked changes version of the calendar section affected if applicable):



Current version:

Doctoral Thesis

~~During the third or fourth year of the program, candidates will write a scholarly thesis of approximately 250 pages (including notes and bibliography), and will defend it at an Oral Examination. The oral examination of the thesis will normally be conducted in French.~~

New version:

The candidate will complete a thesis in one of the two following forms:

- A traditional thesis which will be approximately 250 pages (not including bibliography); and will be defended at an Oral Examination. The oral examination will normally be conducted in French.
- A sandwich thesis, which in accordance with McMaster's Thesis Preparation Guide, must consist of a minimum of three scholarly works on a united theme, previously published, submitted for peer review, or prepared for publication but not yet submitted; these works must be accompanied by substantial introductory and concluding chapters, addressing the theoretical approaches that unify and inform the research. The typical length of a sandwich thesis will be about 200 pages, plus bibliography.

Contact information for the recommended change:

Name:

Email:

Date submitted:

Dr. John Stout

stoutj@mcmaster.ca

January 30, 2025

If you have any questions regarding this form, please contact the Assistant Secretary, School of Graduate Studies, cbryce@mcmaster.ca

Recommendation for Change in Graduate Curriculum – For Change(s) Involving Degree Program Requirements / Procedures / Milestones

<u>Please read the following notes before completing this form:</u>				
<p>1. This form must be completed for all changes involving degree program requirements/procedures. All sections of this form must be completed.</p> <p>2. An electronic version of this form (must be in MS WORD not PDF) should be emailed to the Assistant Secretary, School of Graduate Studies (cbryce@mcmaster.ca).</p> <p>3. A representative from the department is required to attend the Faculty Curriculum and Policy Committee meeting during which this recommendation for change in graduate curriculum will be discussed.</p>				
DEPARTMENT	French			
NAME OF PROGRAM and PLAN	Ph.D. in French			
DEGREE	Doctor of Philosophy in French			
NATURE OF RECOMMENDATION (PLEASE CHECK APPROPRIATE BOX)				
Is this change a result of an IQAP review? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No				
Creation of a New Milestone <input type="checkbox"/>				
Change in Admission Requirements		Change in Comprehensive Examination Procedure		Change in Course/Program Requirements X
Change in the Description of a section of the Graduate Calendar	X	EXPLAIN: The sentences included under the rubric "Language Requirement" in the French, Ph.D. Section of the SGS Calendar will need to be deleted if the proposed change is approved.		
Other Changes:	Explain: 			

Describe the existing requirement/procedure:

Candidates in the Ph.D. program in French need to pass a proficiency examination in a third language (i.e., other than French or English) during their doctoral studies in the program. The Department is proposing to remove this requirement.

Provide a detailed description of the Recommended Change (*Attach additional pages if space is not sufficient.*)

Students enrolled in the French Ph.D. program will no longer have to pass a proficiency test in a third language.

Rationale for the Recommended Change (How does the requirement fit into the department's program and/or tie to existing Program Learning Outcomes from the program's IQAP cyclical review?):

Most readings in French Ph.D. program are in French or in English. On the other hand, the availability of AI generated translation tools makes various languages accessible. If a third language is required for research purposes, the decision concerning proficiency testing will be taken by the supervisor and the student and submitted in written form to the Graduate Chair.

Provide implementation date: (*Implementation date should be at the beginning of the academic year*)

September 2025

Are there any other details of the recommended change that the curriculum and policy committee should be aware of? If yes, please explain:

No

Provide a description of the recommended change to be included in the calendar (please include a tracked changes version of the calendar section affected if applicable):

The entire section “Language Requirement” in the description of Ph.D. in French to be removed:

Contact information for the recommended change:

Date submitted:

Dr. John Stout – stoutj@mcmaster.ca

January 30, 2025

If you have any questions regarding this form, please contact the Assistant Secretary, School of Graduate Studies, cbryce@mcmaster.ca

McMaster**0**

SEARCH MENU

ACADEMIC CALENDARS

**McMaster
University****School of Graduate Studies Calendar, 2024-2025****French, Ph.D.**

Ph.D. Degree

Admission

The Ph.D. Degree Program will normally be four years in length. Students will be admitted to the Ph.D. program with a completed M.A. in French literature or linguistics, or in a program deemed equivalent. Equivalence will be granted on a case by case basis in consultation with the School of Graduate Studies. Students must obtain a minimum B+ average or equivalent at the Master's level to be considered for admission. All applicants will be required to submit official transcripts, two letters of recommendation, and a detailed statement of interest. As a rule, part-time studies will not be an option at the Ph.D. level. However, in exceptional circumstances, permission to pursue the doctorate part-time might be granted, provided the student adheres to a rigorously scheduled plan of action for completion of all degree requirements within a reasonably limited timeframe.

Note: Applicants to the French Graduate programme are exempted from the TOEFL requirement.

Fields in the program

The Ph.D. program, "Francophonie et diversité", comprises the following three fields:

1. Francophone* Theories, Languages and Literatures of the 20th and 21st centuries.
2. Colonial and Post-Colonial Contexts in the Francophone World.
3. Discourse and Representation of the Ancien Regime and 19th Century.

Note: 'Francophone' includes France and other French-speaking countries and regions.

Program Requirements

The program will be four years in length. Within the first five months of residency, students will select a thesis supervisor who will in turn recommend, for the student's approval, at least two other colleagues - to a maximum of four - as members of the supervisory committee. The Graduate Studies Committee, normally comprised of the Graduate Chair, the Chair of the department, two faculty members and two students (one from the MA, one from the Ph.D. program), will also vet supervisory committees. During their third year of the program, students may elect to study or do research abroad, audit classes in other disciplines, at McMaster or at other universities, or participate in a field work/internship program in a Francophone region or country. To spend a period of time in a Francophone region or country, students must obtain the written approval of their committee and of the School of Graduate Studies.

Course Work

All PhD students must complete six half-courses (three units each) within the first year of the program. One of them, FRENCH 705 Introduction to Literary and Critical Theory is required.

Doctoral students who took a course similar to FRENCH 705 in their M.A. program at another university, may submit a syllabus and a reading list of such a course with a request that it be counted as an equivalent. If the permission is granted, they will take instead, as the sixth mandatory seminar, one of the following:

- ◊ another course offered by the department
- ◊ FRENCH 730 - Lectures Dirigées /Reading Course
- ◊ a course offered by another department if relevant to student's research

Doctoral students who took FRENCH 705 when completing their M. A. degree in French at McMaster will also substitute it by one of the courses from the list above.

The listing of all courses can be found in the following section of the SGS Calendar: [French Courses](#). Not all of the listed courses are offered every year.

All Ph.D. students must pass the workshop on Instruments and Methods of Research in French Literary Studies (Pass/Fail).

All graduate students, including part time students, must also complete courses [SGS 101](#) Academic Research Integrity and Ethics and [SGS 201](#) Accessibility for Ontarians with Disabilities Act (AODA). Please refer to section 2.6.5 for more information. A graduate student may not obtain a graduate degree at McMaster without having passed these courses.

Milestones

MILESTONES In addition to the Course Work, the Learning Portfolio milestone will be required with four parts to the milestone. Once successfully completed, it will appear on the student's transcript. A minimum of four milestones must be successfully completed before the end of the second year of the Ph.D. program. These milestones are considered formal components of the student's academic progress. They will normally be assessed at the time of the student's supervisory committee meeting at the end of the second year.

Admissible activities for the obtention of the "Milestones" requirement are as follows:

1. Participation in four professional workshops organized by the Department of French
2. Successful completion of course EDU 750/751 (Please note: This course can also be taken to replace the language requirement. Under no circumstances can EDU 750/751 count both as a Milestone and as a replacement for the language requirement.)
3. Participation in four activities of the Sherman Centre for Digital Scholarship (e.g. the workshop "Introduction to Digital Scholarship" from the series "Demystifying Digital Scholarship", talks from the series "Graduate

Symposium", talks by an invited speaker).

4. Participation in four activities of the Indigenous Studies Program (e.g. public lectures, Indigenous Graduate Students Symposium, events organized by the Six Nations of the Grand River community).

5. Participation in four activities organized by any of the following programs or institutes: MacPherson Institute for Leadership, Innovation & Excellence in Teaching, Gender Studies and Feminist Research Program, Peace Studies, the Institute on Globalization & the Human Condition.

NB. For points 3-5: proof of participation will be presented to the student's supervisory committee through a one-page reflective statement

6. Presentation of a paper at the annual French Department Students' Colloquium

7. Presentation of a paper at the annual French Department Conference Series

8. Peer-reviewed publication in French

9. Peer-reviewed published or exhibited creative works in French

10. Presentation of the candidate's research for the Hamilton Francophone community (for example in high schools or on a radio program)

11. Submission of a Course Description / Course Outline

12. Submission of a Teaching Philosophy

NB. For points 11-12: in consultation with MacPherson Institute.

13. Submission of a Research Statement

14. Submission of a Grant Application

NB. For points 13-14: these documents must be approved by the student's supervisory committee. Ph.D. students are encouraged to present their Milestones to their supervisory committee using the e-Learning Portfolio.

Language Requirement

~~Candidates will successfully pass a proficiency examination in a language other than English or French, consisting of translation into French or English of an approximately one page text. The choice of language should be made by the candidate in consultation with her/his supervisory committee. With the approval of the Department of French Graduate Studies Committee and the candidate's supervisory committee, this language requirement may be substituted by:~~

~~◊ Successful completion of a 6-unit undergraduate language course, intermediate or advance level, with a minimum grade of B+~~

~~◊ Successful completion of the course EDU 750/751 Principles and Practices of University Teaching offered by MHETL (MacPherson Institute for Innovation & Excellence in Teaching and Learning). The description of the course may be found in the following section of the SGS Calendar: Faculty of Humanities—French—French Courses.~~

~~◊ Successful completion of a three-unit, doctoral level course in another discipline relevant to the candidate's research topic.~~

~~This requirement may be fulfilled at any time before completion of the degree.~~

Comprehensive Field Examinations

Ph.D. candidates in consultation with their supervisory committee will choose two areas of concentration. The first will be literary in nature and it will require a deep knowledge of primary sources, critical analysis methods and criti-

cal questions relevant to the field and to the researched topic. The second area of concentration will be theoretical or interdisciplinary. Students will be asked to demonstrate knowledge of either (a) theoretical frameworks relevant to their research (e.g. postcolonialism, gender studies and queer theory, psychoanalytic criticism, narratology, semiotics, reader response criticism) or (b) interdisciplinary affiliations between literature and other fields relevant to their research (e.g. philosophy, medicine, film, arts, material culture). Candidates will submit an extensive bibliography for each area of concentration and will be assessed by way of a written examination. Candidates will be given one week to complete a 15-20 page paper, excluding bibliography, for each area. The written examination will be followed by an oral defence. Full-time students will write these examinations within the first twenty months of their program, that is, before the end of April of their second year of residency, assuming the student began residency in September of the first year. These exams are intended as opening stages of the doctoral dissertation. For each examination, candidates must prove their proficiency in the French language and their competence in their selected areas of specialization. They must display in-depth knowledge, not only of the primary texts, but also of the existing scholarship in their areas of concentration. Candidates must obtain a passing grade. In the event of a failing grade, candidates will have one opportunity to rewrite their examinations. This second and final attempt should occur within three months of the date of their first examination. In place of a comprehensive examination paper, students will have the choice to write an original article that will be submitted to a recognized, peer-reviewed journal in their field. The article will be a minimum length of 7000 words.

Thesis Proposal

Students will prepare a 20-25 page (excluding the bibliography) thesis proposal in consultation with their thesis supervisor. This project will then be presented and examined by the candidate's supervisory committee. An oral defence of the project, conducted by the supervisory committee, must be successfully completed before the candidate can proceed with research and preparation of the thesis manuscript. This requirement should be completed within the first 24 months of the candidate's program.

Doctoral Thesis

During the third or fourth year of the program, candidates will write a scholarly thesis of approximately 250 pages (including notes and bibliography), and will defend it at an Oral Examination. The oral examination of the thesis will normally be conducted in French.

Required courses

- [FRENCH 705 / Introduction to Literary and Critical Theory](#)

Timeline

First Year

- Completion of 6 half courses within 12 months of start date
- Completion of a research methodology workshop
- Selection of thesis supervisor and supervisory committee (as soon as possible and within the first 5 months of study, before the end of January at the latest)
- Two areas of concentration to be determined in conjunction with committee members
- Submission of the First Year Progress Report (before the 12th month)

Second Year

- Comprehensive exams or publishable articles to be completed within the first 20 months of the program. If the article option is chosen, the article will be submitted to a recognized, peer-review journal in the relevant field.

- A 25-page (excluding the bibliography) thesis proposal to be completed and defended orally within the first 24 months
- Submission of Annual Progress Report (before the 24th month)

Third Year

- Submission of draft chapters of the thesis
- Potential study/research/internship in a Francophone country or in a country related to student's research
- Submission of Annual Progress Report (before the 36th month)

Fourth Year

Submission of the final draft of the thesis; the thesis defence; uploading of the final, electronic version of the thesis to the MacSphere



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Recommendation for Change in Graduate Curriculum – For Change(s) Involving Degree Program Requirements / Procedures / Milestones

Please read the following notes before completing this form:

1. This form must be completed for all changes involving degree program requirements/procedures. All sections of this form must be completed.
2. An electronic version of this form (must be in MS WORD not PDF) should be emailed to the Assistant Secretary, School of Graduate Studies (cbryce@mcmaster.ca).
3. A representative from the department is **required to attend** the Faculty Curriculum and Policy Committee meeting during which this recommendation for change in graduate curriculum will be discussed.

DEPARTMENT	French		
NAME OF PROGRAM and PLAN	Ph.D. in French		
DEGREE	Doctor of Philosophy in French		
NATURE OF RECOMMENDATION (PLEASE CHECK APPROPRIATE BOX)			
Is this change a result of an IQAP review? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No			
Creation of a New Milestone <input type="checkbox"/>			
Change in Admission Requirements	<input type="checkbox"/>	Change in Comprehensive Examination Procedure	Change in Course/Program Requirements <input checked="" type="checkbox"/>
Change in the Description of a section of the Graduate Calendar	<input checked="" type="checkbox"/>	EXPLAIN: Introduction of <i>Éléments de formation professionnelle</i> requirement to replace former « Milestones » requirement.	
Other Changes:	Explain: 		



Describe the existing requirement/procedure:

In addition to course work, comprehensive examinations and thesis proposal submission and defense, students are required to complete within the first 24 months in the program a set of “professional milestones” from a list of eligible activities to be assessed during the supervisory committee meeting and to appear on the student’s transcript.

Provide a detailed description of the Recommended Change (*Attach additional pages if space is not sufficient.*)

The current list of “professional milestones” to be replaced by three Pass/Fail requirements as described in the section “Provide a description of the recommended change to be included in the calendar” below.

Rationale for the Recommended Change (How does the requirement fit into the department’s program and/or tie to existing Program Learning Outcomes from the program’s IQAP cyclical review?):

This form is a counterpart to the form requesting a removal of the current “professional milestones”. The rationale in both cases converges:

In the report that French Ph.D. students submitted to the Department after meeting with the lead of the “Shortening Ph.D. in Humanities” project and follow-up discussions, the “professional milestones” received mixed comments: appreciated by some, perceived as superfluous by others.

Instead of updating the list of eligible activities in the existing requirement (e.g. MacPherson’s EDU 750/751 is now a microcredential and needs to be removed from the list; some referenced programs changed their names and need to be updated), we propose that this requirement be cancelled in its current form and replaced by a shortened version *Éléments de formation professionnelle*.

Provide implementation date: (*Implementation date should be at the beginning of the academic year*)

September 2025

Are there any other details of the recommended change that the curriculum and policy committee should be aware of? If yes, please explain:

n/a



Provide a description of the recommended change to be included in the calendar (please include a tracked changes version of the calendar section affected if applicable):

In addition to the course work, the following three requirements must be successfully completed within the indicated deadlines:

1. Workshops on Methodology of Ph.D. Research and Writing (topics such as program requirements, dissertation components, presenting a paper, publishing). Four to five 2-hour meetings over Ph.D. 1. Hosted by the Department of French. To be completed within the first 12 months in the program. Pass/Fail.
2. Workshop on Bibliographic Research Tools and Methods (topics such as Omni search tool, formulating research questions, citation formats, citation management tools, Library services to graduate students). Organized in collaboration with the Graduate Studies Librarian, Mills Library. To be completed in September of the first year in the program. Pass/Fail.
3. Presentation of a paper at an annual conference of French graduate students, normally in May. At least once over the course of the four-year Ph.D. studies. To be completed within the 48 months in the program. Pass/Fail.

Contact information for the recommended change:

Name: Elzbieta Grodek Email: grodeke@mcmaster.ca Date submitted: Jan. 28, 2024

If you have any questions regarding this form, please contact the Assistant Secretary, School of Graduate Studies, cbryce@mcmaster.ca

Recommendation for Change in Graduate Curriculum – For Change(s) Involving Degree Program Requirements / Procedures / Milestones

<u>Please read the following notes before completing this form:</u>			
<p>1. This form must be completed for all changes involving degree program requirements/procedures. All sections of this form must be completed.</p> <p>2. An electronic version of this form (must be in MS WORD not PDF) should be emailed to the Assistant Secretary, School of Graduate Studies (cbryce@mcmaster.ca).</p> <p>3. A representative from the department is required to attend the Faculty Curriculum and Policy Committee meeting during which this recommendation for change in graduate curriculum will be discussed.</p>			
DEPARTMENT	French		
NAME OF PROGRAM and PLAN	Ph.D. in French		
DEGREE	Doctor of Philosophy in French		
NATURE OF RECOMMENDATION (PLEASE CHECK APPROPRIATE BOX)			
Is this change a result of an IQAP review? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No			
Creation of a New Milestone <input type="checkbox"/>			
Change in Admission Requirements	<input type="checkbox"/>	Change in Comprehensive Examination Procedure	<input type="checkbox"/>
		Change in Course/Program Requirements	<input checked="" type="checkbox"/>
Change in the Description of a section of the Graduate Calendar	<input checked="" type="checkbox"/>	EXPLAIN: The section on the Thesis Proposal of the SGS Calendar for French Ph.D. will need to be altered if this change proposed by the Department is accepted.	
Other Changes:	Explain: 		

Describe the existing requirement/procedure:

Students in the Ph.D. program must write a 20-25 page (excluding bibliography) thesis proposal to be presented to the student's committee, followed by an oral defense. Thesis proposal is to be completed and defended orally within the first 24 months in the program.

Provide a detailed description of the Recommended Change (*Attach additional pages if space is not sufficient.*)

With a reduction in the number of comprehensive exams from two to one, students are expected to advance faster through the milestones of the program. They will present their thesis proposal to the committee in early December of Ph.D.2. The oral defense of the thesis proposal will then take place in mid-January.

Rationale for the Recommended Change (How does the requirement fit into the department's program and/or tie to existing Program Learning Outcomes from the program's IQAP cyclical review?):

The Faculty-wide project to shorten and reimagine the Ph.D. is the main motivating factor behind this change resulting from redesigning French Ph.D.1 requirements.

Provide implementation date: (*Implementation date should be at the beginning of the academic year*)

September 2025

Are there any other details of the recommended change that the curriculum and policy committee should be aware of? If yes, please explain:

No.

Provide a description of the recommended change to be included in the calendar (please include a tracked changes version of the calendar section affected if applicable):

Thesis Proposal

Students will prepare a 20-25 page (excluding the bibliography) thesis proposal in consultation with their thesis supervisor. This project will then be presented and examined by the candidate's

supervisory committee. An oral defence of the project, conducted by the supervisory committee, must be successfully completed within the first 17 months of the candidate's program.

Contact information for the recommended change:

Name: Dr. John Stout Email: stoutj@mcmaster.ca Date submitted: January 30, 2025

If you have any questions regarding this form, please contact the Assistant Secretary, School of Graduate Studies, cbryce@mcmaster.ca

McMaster**0**

SEARCH MENU

ACADEMIC CALENDARS

**McMaster
University****School of Graduate Studies Calendar, 2024-2025****French, Ph.D.**

Ph.D. Degree

Admission

The Ph.D. Degree Program will normally be four years in length. Students will be admitted to the Ph.D. program with a completed M.A. in French literature or linguistics, or in a program deemed equivalent. Equivalence will be granted on a case by case basis in consultation with the School of Graduate Studies. Students must obtain a minimum B+ average or equivalent at the Master's level to be considered for admission. All applicants will be required to submit official transcripts, two letters of recommendation, and a detailed statement of interest. As a rule, part-time studies will not be an option at the Ph.D. level. However, in exceptional circumstances, permission to pursue the doctorate part-time might be granted, provided the student adheres to a rigorously scheduled plan of action for completion of all degree requirements within a reasonably limited timeframe.

Applicants to the French Graduate programme are exempted from the TOEFL requirement.

Fields in the program

The Ph.D. program, "Francophonie et diversité", comprises the following three fields:

1. Francophone* Theories, Languages and Literatures of the 20th and 21st centuries.
2. Colonial and Post-Colonial Contexts in the Francophone World.
3. Discourse and Representation of the Ancien Regime and 19th Century.

Note: 'Francophone' includes France and other French-speaking countries and regions.

Program Requirements

The program will be four years in length. Within the first five months of residency, students will select a thesis supervisor who will in turn recommend, for the student's approval, at least two other colleagues - to a maximum of four - as members of the supervisory committee. The Graduate Studies Committee, normally comprised of the Graduate Chair, the Chair of the department, two faculty members and two students (one from the MA, one from the Ph.D. program), will also vet supervisory committees. During their third year of the program, students may elect to study or do research abroad, audit classes in other disciplines, at McMaster or at other universities, or participate in a field work/internship program in a Francophone region or country. To spend a period of time in a Francophone region or country, students must obtain the written approval of their committee and of the School of Graduate Studies.

Course Work

All PhD students must complete six half-courses (three units each) within the first year of the program. One of them, FRENCH 705 Introduction to Literary and Critical Theory is required.

Doctoral students who took a course similar to FRENCH 705 in their M.A. program at another university, may submit a syllabus and a reading list of such a course with a request that it be counted as an equivalent. If the permission is granted, they will take instead, as the sixth mandatory seminar, one of the following:

- ◊ another course offered by the department
- ◊ FRENCH 730 - Lectures Dirigées /Reading Course
- ◊ a course offered by another department if relevant to student's research

Doctoral students who took FRENCH 705 when completing their M. A. degree in French at McMaster will also substitute it by one of the courses from the list above.

The listing of all courses can be found in the following section of the SGS Calendar: [French Courses](#). Not all of the listed courses are offered every year.

All Ph.D. students must pass the workshop on Instruments and Methods of Research in French Literary Studies (Pass/Fail).

All graduate students, including part time students, must also complete courses [SGS 101](#) Academic Research Integrity and Ethics and [SGS 201](#) Accessibility for Ontarians with Disabilities Act (AODA). Please refer to section 2.6.5 for more information. A graduate student may not obtain a graduate degree at McMaster without having passed these courses.

Milestones

MILESTONES In addition to the Course Work, the Learning Portfolio milestone will be required with four parts to the milestone. Once successfully completed, it will appear on the student's transcript. A minimum of four milestones must be successfully completed before the end of the second year of the Ph.D. program. These milestones are considered formal components of the student's academic progress. They will normally be assessed at the time of the student's supervisory committee meeting at the end of the second year.

Admissible activities for the obtention of the "Milestones" requirement are as follows:

1. Participation in four professional workshops organized by the Department of French
2. Successful completion of course EDU 750/751 (Please note: This course can also be taken to replace the language requirement. Under no circumstances can EDU 750/751 count both as a Milestone and as a replacement for the language requirement.)
3. Participation in four activities of the Sherman Centre for Digital Scholarship (e.g. the workshop "Introduction to Digital Scholarship" from the series "Demystifying Digital Scholarship", talks from the series "Graduate

Symposium", talks by an invited speaker).

4. Participation in four activities of the Indigenous Studies Program (e.g. public lectures, Indigenous Graduate Students Symposium, events organized by the Six Nations of the Grand River community).

5. Participation in four activities organized by any of the following programs or institutes: MacPherson Institute for Leadership, Innovation & Excellence in Teaching, Gender Studies and Feminist Research Program, Peace Studies, the Institute on Globalization & the Human Condition.

NB. For points 3-5: proof of participation will be presented to the student's supervisory committee through a one-page reflective statement

6. Presentation of a paper at the annual French Department Students' Colloquium

7. Presentation of a paper at the annual French Department Conference Series

8. Peer-reviewed publication in French

9. Peer-reviewed published or exhibited creative works in French

10. Presentation of the candidate's research for the Hamilton Francophone community (for example in high schools or on a radio program)

11. Submission of a Course Description / Course Outline

12. Submission of a Teaching Philosophy

NB. For points 11-12: in consultation with MacPherson Institute.

13. Submission of a Research Statement

14. Submission of a Grant Application

NB. For points 13-14: these documents must be approved by the student's supervisory committee. Ph.D. students are encouraged to present their Milestones to their supervisory committee using the e-Learning Portfolio.

Language Requirement

Candidates will successfully pass a proficiency examination in a language other than English or French, consisting of translation into French or English of an approximately one-page text. The choice of language should be made by the candidate in consultation with her/his supervisory committee. With the approval of the Department of French Graduate Studies Committee and the candidate's supervisory committee, this language requirement may be substituted by:

- ◊ Successful completion of a 6-unit undergraduate language course, intermediate or advance level, with a minimum grade of B+
- ◊ Successful completion of the course EDU 750/751 Principles and Practices of University Teaching offered by MIIETL (MacPherson Institute for Innovation & Excellence in Teaching and Learning). The description of the course may be found in the following section of the SGS Calendar: Faculty of Humanities - French - French Courses.
- ◊ Successful completion of a three-unit, doctoral-level course in another discipline relevant to the candidate's research topic.

This requirement may be fulfilled at any time before completion of the degree.

Comprehensive Field Examinations

Ph.D. candidates in consultation with their supervisory committee will choose two areas of concentration. The first will be literary in nature and it will require a deep knowledge of primary sources, critical analysis methods and criti-

cal questions relevant to the field and to the researched topic. The second area of concentration will be theoretical or interdisciplinary. Students will be asked to demonstrate knowledge of either (a) theoretical frameworks relevant to their research (e.g. postcolonialism, gender studies and queer theory, psychoanalytic criticism, narratology, semiotics, reader response criticism) or (b) interdisciplinary affiliations between literature and other fields relevant to their research (e.g. philosophy, medicine, film, arts, material culture). Candidates will submit an extensive bibliography for each area of concentration and will be assessed by way of a written examination. Candidates will be given one week to complete a 15-20 page paper, excluding bibliography, for each area. The written examination will be followed by an oral defence. Full-time students will write these examinations within the first twenty months of their program, that is, before the end of April of their second year of residency, assuming the student began residency in September of the first year. These exams are intended as opening stages of the doctoral dissertation. For each examination, candidates must prove their proficiency in the French language and their competence in their selected areas of specialization. They must display in-depth knowledge, not only of the primary texts, but also of the existing scholarship in their areas of concentration. Candidates must obtain a passing grade. In the event of a failing grade, candidates will have one opportunity to rewrite their examinations. This second and final attempt should occur within three months of the date of their first examination. In place of a comprehensive examination paper, students will have the choice to write an original article that will be submitted to a recognized, peer-reviewed journal in their field. The article will be a minimum length of 7000 words.

Thesis Proposal

Students will prepare a 20-25 page (excluding the bibliography) thesis proposal in consultation with their thesis supervisor. This project will then be presented and examined by the candidate's supervisory committee. An oral defence of the project, conducted by the supervisory committee, must be successfully ~~completed before the candidate can proceed with research and preparation of the thesis manuscript. This requirement should be~~ completed within the first 24 17 months of the candidate's program.

Doctoral Thesis

During the third or fourth year of the program, candidates will write a scholarly thesis of approximately 250 pages (including notes and bibliography), and will defend it at an Oral Examination. The oral examination of the thesis will normally be conducted in French.

Required courses

- [FRENCH 705 / Introduction to Literary and Critical Theory](#)

Timeline

First Year

- Completion of 6 half courses within 12 months of start date
- Completion of a research methodology workshop
- Selection of thesis supervisor and supervisory committee (as soon as possible and within the first 5 months of study, before the end of January at the latest)
- Two areas of concentration to be determined in conjunction with committee members
- Submission of the First Year Progress Report (before the 12th month)

Second Year

- Comprehensive exams or publishable articles to be completed within the first 20 months of the program. If the article option is chosen, the article will be submitted to a recognized, peer-review journal in the relevant field.



- A 25-page (excluding the bibliography) thesis proposal to be completed and defended orally within the first 24 months
- Submission of Annual Progress Report (before the 24th month)

Third Year

- Submission of draft chapters of the thesis
- Potential study/research/internship in a Francophone country or in a country related to student's research
- Submission of Annual Progress Report (before the 36th month)

Fourth Year

Submission of the final draft of the thesis; the thesis defence; uploading of the final, electronic version of the thesis to the MacSphere



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Recommendation for Change in Graduate Curriculum – For Change(s) Involving Degree Program Requirements / Procedures / Milestones

Please read the following notes before completing this form:			
<p>1. This form must be completed for all changes involving degree program requirements/procedures. All sections of this form must be completed.</p> <p>2. An electronic version of this form (must be in MS WORD not PDF) should be emailed to the Assistant Secretary, School of Graduate Studies (cbryce@mcmaster.ca).</p> <p>3. A representative from the department is required to attend the Faculty Curriculum and Policy Committee meeting during which this recommendation for change in graduate curriculum will be discussed.</p>			
DEPARTMENT	French		
NAME OF PROGRAM and PLAN	PhD in French		
DEGREE	Doctor of Philosophy in French		
NATURE OF RECOMMENDATION (PLEASE CHECK APPROPRIATE BOX)			
Is this change a result of an IQAP review? <input type="checkbox"/> Yes <input type="checkbox"/> No			
Creation of a New Milestone <input type="checkbox"/>			
Change in Admission Requirements	<input type="checkbox"/>	Change in Comprehensive Examination Procedure	Change in Course/Program Requirements <input checked="" type="checkbox"/>
Change in the Description of a section of the Graduate Calendar	<input checked="" type="checkbox"/>	EXPLAIN: We are changing the Timeline for Ph.D.1 and Ph.D.2 students to complete certain requirements as we make changes to our Ph.D. program.	
Other Changes:	Explain:		

Describe the existing requirement/procedure:

Students must complete 6 half courses, including FRENCH 705, in the first year of their PhD studies in our department. They must take, and pass, two separate comprehensive field examinations during the second year of their PhD studies.

Provide a detailed description of the Recommended Change (*Attach additional pages if space is not sufficient.*)

Students entering the PhD program in “Francophonie and Diversity” as of September 2025 will take 5 700-level half courses during Ph.D.1 including the two required courses FRENCH 705 and FRENCH 750. They must also take and pass a comprehensive field examination in the third term of their Ph.D. studies. The Timeline for Ph.D.3 and Ph.D. 4 remains unchanged.

Rationale for the Recommended Change (How does the requirement fit into the department’s program and/or tie to existing Program Learning Outcomes from the program’s IQAP cyclical review?):

We are proposing this change as part of our efforts to help our students complete their Ph.D. studies more quickly, in response to the report on shortening the Ph.D. submitted to the Faculty of Humanities in August, 2024.

Provide implementation date: (*Implementation date should be at the beginning of the academic year*)

September 2025

Are there any other details of the recommended change that the curriculum and policy committee should be aware of? If yes, please explain:

No.

Provide a description of the recommended change to be included in the calendar (please include a tracked changes version of the calendar section affected if applicable):

Timeline**First Year**

- Completion of 5 half courses within 10 months of start date
- Completion of a Workshop on Bibliographic research Tools and Methods
- Completion of the Workshop on Methodology of Ph.D. Research and Writing
- Selection of thesis supervisor and supervisory committee (as soon as possible and within the first 5 months of study, before the end of January at the latest)
- Comprehensive field examination to be taken in the third term of the first year of their PhD studies
- Submission of First Year Progress Report (before the 12th month)

Second Year

- A 20-25-page (excluding the bibliography) thesis proposal to be completed by early December, followed by an oral defense in mid-January
- Submission of draft chapters of the thesis
- Submission of Annual Progress Report (before the 24th month)

Third Year

- Submission of draft chapters of the thesis
- Potential study/research/internship in a Francophone country or in a country related to student's research
- Submission of Annual Progress Report (before the 36th month)

Fourth Year

- Submission of draft chapters of the thesis
- Submission of the final draft of the thesis
- The thesis defence
- Uploading of the final, electronic version of the thesis to the MacSphere

Contact information for the recommended change:

Name: **Dr. John Stout.** Email: stoutj@mcmaster.ca Date submitted: **January 30, 2025**

If you have any questions regarding this form, please contact the Assistant Secretary, School of Graduate Studies, cbryce@mcmaster.ca

McMaster**0**

SEARCH MENU

ACADEMIC CALENDARS

**McMaster
University****School of Graduate Studies Calendar, 2024-2025****French, Ph.D.**

Ph.D. Degree

Admission

The Ph.D. Degree Program will normally be four years in length. Students will be admitted to the Ph.D. program with a completed M.A. in French literature or linguistics, or in a program deemed equivalent. Equivalence will be granted on a case by case basis in consultation with the School of Graduate Studies. Students must obtain a minimum B+ average or equivalent at the Master's level to be considered for admission. All applicants will be required to submit official transcripts, two letters of recommendation, and a detailed statement of interest. As a rule, part-time studies will not be an option at the Ph.D. level. However, in exceptional circumstances, permission to pursue the doctorate part-time might be granted, provided the student adheres to a rigorously scheduled plan of action for completion of all degree requirements within a reasonably limited timeframe.

Applicants to the French Graduate programme are exempted from the TOEFL requirement.

Fields in the program

The Ph.D. program, "Francophonie et diversité", comprises the following three fields:

1. Francophone* Theories, Languages and Literatures of the 20th and 21st centuries.
2. Colonial and Post-Colonial Contexts in the Francophone World.
3. Discourse and Representation of the Ancien Regime and 19th Century.

Note: 'Francophone' includes France and other French-speaking countries and regions.

Program Requirements

The program will be four years in length. Within the first five months of residency, students will select a thesis supervisor who will in turn recommend, for the student's approval, at least two other colleagues - to a maximum of four - as members of the supervisory committee. The Graduate Studies Committee, normally comprised of the Graduate Chair, the Chair of the department, two faculty members and two students (one from the MA, one from the Ph.D. program), will also vet supervisory committees. During their third year of the program, students may elect to study or do research abroad, audit classes in other disciplines, at McMaster or at other universities, or participate in a field work/internship program in a Francophone region or country. To spend a period of time in a Francophone region or country, students must obtain the written approval of their committee and of the School of Graduate Studies.

Course Work

All PhD students must complete six half-courses (three units each) within the first year of the program. One of them, FRENCH 705 Introduction to Literary and Critical Theory is required.

Doctoral students who took a course similar to FRENCH 705 in their M.A. program at another university, may submit a syllabus and a reading list of such a course with a request that it be counted as an equivalent. If the permission is granted, they will take instead, as the sixth mandatory seminar, one of the following:

- ◊ another course offered by the department
- ◊ FRENCH 730 - Lectures Dirigees /Reading Course
- ◊ a course offered by another department if relevant to student's research

Doctoral students who took FRENCH 705 when completing their M. A. degree in French at McMaster will also substitute it by one of the courses from the list above.

The listing of all courses can be found in the following section of the SGS Calendar: [French Courses](#). Not all of the listed courses are offered every year.

All Ph.D. students must pass the workshop on Instruments and Methods of Research in French Literary Studies (Pass/Fail).

All graduate students, including part time students, must also complete courses [SGS 101](#), Academic Research Integrity and Ethics and [SGS 201](#), Accessibility for Ontarians with Disabilities Act (AODA). Please refer to section 2.6.5 for more information. A graduate student may not obtain a graduate degree at McMaster without having passed these courses.

Milestones

MILESTONES In addition to the Course Work, the Learning Portfolio milestone will be required with four parts to the milestone. Once successfully completed, it will appear on the student's transcript. A minimum of four milestones must be successfully completed before the end of the second year of the Ph.D. program. These milestones are considered formal components of the student's academic progress. They will normally be assessed at the time of the student's supervisory committee meeting at the end of the second year.

Admissible activities for the obtention of the "Milestones" requirement are as follows:

1. Participation in four professional workshops organized by the Department of French
2. Successful completion of course EDU 750/751 (Please note: This course can also be taken to replace the language requirement. Under no circumstances can EDU 750/751 count both as a Milestone and as a replacement for the language requirement.)
3. Participation in four activities of the Sherman Centre for Digital Scholarship (e.g. the workshop "Introduction to Digital Scholarship" from the series "Demystifying Digital Scholarship", talks from the series "Graduate

Symposium", talks by an invited speaker).

4. Participation in four activities of the Indigenous Studies Program (e.g. public lectures, Indigenous Graduate Students Symposium, events organized by the Six Nations of the Grand River community).
5. Participation in four activities organized by any of the following programs or institutes: MacPherson Institute for Leadership, Innovation & Excellence in Teaching, Gender Studies and Feminist Research Program, Peace Studies, the Institute on Globalization & the Human Condition.

NB. For points 3-5: proof of participation will be presented to the student's supervisory committee through a one-page reflective statement

6. Presentation of a paper at the annual French Department Students' Colloquium
7. Presentation of a paper at the annual French Department Conference Series
8. Peer-reviewed publication in French
9. Peer-reviewed published or exhibited creative works in French
10. Presentation of the candidate's research for the Hamilton Francophone community (for example in high schools or on a radio program)
11. Submission of a Course Description / Course Outline
12. Submission of a Teaching Philosophy

NB. For points 11-12: in consultation with MacPherson Institute.

13. Submission of a Research Statement
14. Submission of a Grant Application

NB. For points 13-14: these documents must be approved by the student's supervisory committee. Ph.D. students are encouraged to present their Milestones to their supervisory committee using the e-Learning Portfolio.

Language Requirement

Candidates will successfully pass a proficiency examination in a language other than English or French, consisting of translation into French or English of an approximately one-page text. The choice of language should be made by the candidate in consultation with her/his supervisory committee. With the approval of the Department of French Graduate Studies Committee and the candidate's supervisory committee, this language requirement may be substituted by:

- ◊ Successful completion of a 6-unit undergraduate language course, intermediate or advance level, with a minimum grade of B+
- ◊ Successful completion of the course EDU 750/751 Principles and Practices of University Teaching offered by MIIETL (MacPherson Institute for Innovation & Excellence in Teaching and Learning). The description of the course may be found in the following section of the SGS Calendar: Faculty of Humanities - French - French Courses.
- ◊ Successful completion of a three-unit, doctoral-level course in another discipline relevant to the candidate's research topic.

This requirement may be fulfilled at any time before completion of the degree.

Comprehensive Field Examinations

Ph.D. candidates in consultation with their supervisory committee will choose two areas of concentration. The first will be literary in nature and it will require a deep knowledge of primary sources, critical analysis methods and criti-

cal questions relevant to the field and to the researched topic. The second area of concentration will be theoretical or interdisciplinary. Students will be asked to demonstrate knowledge of either (a) theoretical frameworks relevant to their research (e.g. postcolonialism, gender studies and queer theory, psychoanalytic criticism, narratology, semiotics, reader response criticism) or (b) interdisciplinary affiliations between literature and other fields relevant to their research (e.g. philosophy, medicine, film, arts, material culture). Candidates will submit an extensive bibliography for each area of concentration and will be assessed by way of a written examination. Candidates will be given one week to complete a 15-20 page paper, excluding bibliography, for each area. The written examination will be followed by an oral defence. Full-time students will write these examinations within the first twenty months of their program, that is, before the end of April of their second year of residency, assuming the student began residency in September of the first year. These exams are intended as opening stages of the doctoral dissertation. For each examination, candidates must prove their proficiency in the French language and their competence in their selected areas of specialization. They must display in-depth knowledge, not only of the primary texts, but also of the existing scholarship in their areas of concentration. Candidates must obtain a passing grade. In the event of a failing grade, candidates will have one opportunity to rewrite their examinations. This second and final attempt should occur within three months of the date of their first examination. In place of a comprehensive examination paper, students will have the choice to write an original article that will be submitted to a recognized, peer-reviewed journal in their field. The article will be a minimum length of 7000 words.

Thesis Proposal

Students will prepare a 20-25 page (excluding the bibliography) thesis proposal in consultation with their thesis supervisor. This project will then be presented and examined by the candidate's supervisory committee. An oral defence of the project, conducted by the supervisory committee, must be successfully completed before the candidate can proceed with research and preparation of the thesis manuscript. This requirement should be completed within the first months of the candidate's program.

Doctoral Thesis

During the third or fourth year of the program, candidates will write a scholarly thesis of approximately 250 pages (including notes and bibliography), and will defend it at an Oral Examination. The oral examination of the thesis will normally be conducted in French.

Required courses

° [FRENCH 705 / Introduction to Literary and Critical Theory](#)

Timeline

First Year

- Completion of ~~6-5~~ half courses within ~~12-10~~ months of start date
- ~~Workshops on Methodology of Ph.D. Research and Writing~~
- ~~Completion of a Workshop on Bibliographic research Tools and Methods~~
- ~~Completion of the Workshop on Methodology of Ph.D. Research and Writing~~
- Selection of thesis supervisor and supervisory committee (as soon as possible and within the first 5 months of study, before the end of January at the latest)
- ~~Two areas of concentration to be determined in conjunction with committee members~~
- ~~Comprehensive Field Examination to be taken in the third term of the first year of their PhD studies Ph.D. 1.~~
- Submission of the First Year Progress Report (before the 12th month)

Second Year

- ~~Comprehensive exams or publishable articles to be completed within the first 20 months of the program. If the article option is chosen, the article will be submitted to a recognized, peer review journal in the relevant field.~~
- ~~A 25-page (excluding the bibliography) thesis proposal to be completed and defended orally within the first 24 months~~
- ~~Submission of Annual Progress Report (before the 24th month)~~

Second Year

- A 20-25-page (excluding the bibliography) thesis proposal to be completed by early December, followed by an oral defence in mid January
- Submission of draft chapters of the thesis
- Submission of Annual Progress Report (before the 24th month)

Third Year

- Submission of draft chapters of the thesis
- Potential study/research/internship in a Francophone country or in a country related to student's research
- Submission of Annual Progress Report (before the 36th month)

Fourth Year

- Submission of draft chapters of the thesis
- Submission of the final draft of the thesis
- The thesis defence;
- Uploading of the final, electronic version of the thesis to the MacSphere

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SCHOOL OF
GRADUATE STUDIES

Gilmour Hall, Room 212
1280 Main Street West
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(905) 525-9140 x 23679
gs.mcmaster.ca



[CONTACT TERMS &
CONDITIONS](#)

[PRIVACY POLICY](#)

1280 Main Street West. Hamilton, Ontario L8S 4L8. (905) 525-9140

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Recommendation for Change in Graduate Curriculum – For Change(s) Involving Degree Program Requirements / Procedures / Milestones

Please read the following notes before completing this form:

1. This form must be completed for all changes involving degree program requirements/procedures. All sections of this form must be completed.
2. An electronic version of this form (must be in MS WORD not PDF) should be emailed to the Assistant Secretary, School of Graduate Studies (cbryce@mcmaster.ca).
3. A representative from the department is **required to attend** the Faculty Curriculum and Policy Committee meeting during which this recommendation for change in graduate curriculum will be discussed.

DEPARTMENT	Gender & Social Justice		
NAME OF PROGRAM and PLAN	MA in Gender & Social Justice		
DEGREE	Master of Arts		
NATURE OF RECOMMENDATION (PLEASE CHECK APPROPRIATE BOX)			
Is this change a result of an IQAP review? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No			
Creation of a New Milestone <input type="checkbox"/>			
Change in Admission Requirements	<input type="checkbox"/>	Change in Comprehensive Examination Procedure	Change in Course/Program Requirements <input checked="" type="checkbox"/>
Change in the Description of a section of the Graduate Calendar	<input type="checkbox"/>	EXPLAIN:	
Other Changes:	<input checked="" type="checkbox"/>	Explain: Adding additional approved electives	

Describe the existing requirement/procedure:

The MA requires two compulsory core courses plus four electives from an approved list.

Provide a detailed description of the Recommended Change (*Attach additional pages if space is not sufficient.*)

We propose to **ADD** three course to the list of “Elective Courses”:

- GENDRST 757 / Gender, Race, and Civility in Early Modern Europe
- GENDRST 776 / Community Engaged Narrative Arts
- GENDRST 780 / Engendering the (Queer, Trans, Non-Binary) Early Modern Stage: Then and Now

Delete one course from the list of “Elective Courses”:

- ~~GENDR ST 702 / Gender and Social Justice in Community~~

Rationale for the Recommended Change (How does the requirement fit into the department’s program and/or tie to existing Program Learning Outcomes from the program’s IQAP cyclical review?):

Adding GendrSt 776 (cross-listed with English & Cultural Studies) enhances the community-engaged offerings in the MA program, which has long been an attractive feature of the program. We greatly regretting cancelling our six-unit community-engaged course (707) last year, and had offered the three-unit alternative (702) only as a stopgap until we firmed up a sustainable plan for community-engaged learning. GendrSt 776 can be offered in rotation with GendrSt 725 (introduced last year) so that we always have at least one community-engaged course on offer each year.

Adding GENDRST 757 and 780 supplements a greater range of relevant courses for the program.

Provide implementation date: (*Implementation date should be at the beginning of the academic year*)

September 2025



<p>Are there any other details of the recommended change that the curriculum and policy committee should be aware of? If yes, please explain:</p> <p>n/a</p>
<p>Provide a description of the recommended change to be included in the calendar (please include a tracked changes version of the calendar section affected if applicable):</p> <p>see above</p>
<p>Contact information for the recommended change:</p> <p>Name: Alpha Abebe Email: gsj_dir@mcmaster.ca Date submitted: January 2025</p>

If you have any questions regarding this form, please contact the Assistant Secretary, School of Graduate Studies, cbryce@mcmaster.ca

Recommendation for Change in Graduate Curriculum – For Change(s) Involving Degree Program Requirements / Procedures / Milestones

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3. A representative from the department is **required to attend** the Faculty Curriculum and Policy Committee meeting during which this recommendation for change in graduate curriculum will be discussed.

DEPARTMENT	Gender & Social Justice		
NAME OF PROGRAM and PLAN	MA in Gender & Social Justice		
DEGREE	Master of Arts		
NATURE OF RECOMMENDATION (PLEASE CHECK APPROPRIATE BOX)			
Is this change a result of an IQAP review? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No			
Creation of a New Milestone <input type="checkbox"/>			
Change in Admission Requirements	<input type="checkbox"/>	Change in Comprehensive Examination Procedure	Change in Course/Program Requirements <input checked="" type="checkbox"/>
Change in the Description of a section of the Graduate Calendar	<input type="checkbox"/>	EXPLAIN:	
Other Changes:	<input checked="" type="checkbox"/>	Explain: Adding additional approved electives	



Describe the existing requirement/procedure:

The MA requires two compulsory core courses plus four electives from an approved list.

Provide a detailed description of the Recommended Change (*Attach additional pages if space is not sufficient.*)

We propose to **ADD** two courses to the list of “Approved Electives from Outside Departments”:

- ENGLISH 710 / Decolonial, Anti-Racist, and Anti-Oppressive Pedagogies: Teaching and Learning Otherwise
- MIDWIF 720 / Community Centred Care

Delete one course from the list of “Elective Courses”:

- ~~GENDR ST 706 / From There to Here: Refugee Women in the World and in Our Community~~

Rationale for the Recommended Change (How does the requirement fit into the department’s program and/or tie to existing Program Learning Outcomes from the program’s IQAP cyclical review?):

Adding these two additional electives offers more options to program students, who arrive in the MA from a wide variety of undergraduate backgrounds.

The course we propose to delete was taught by a faculty member who has now retired.

Provide implementation date: (*Implementation date should be at the beginning of the academic year*)

September 2025

Are there any other details of the recommended change that the curriculum and policy committee should be aware of? If yes, please explain:

n/a

Provide a description of the recommended change to be included in the calendar (please include a tracked changes version of the calendar section affected if applicable):

see above

Contact information for the recommended change:

Name: Catherine Anderson
submitted: 13 Nov 2024

Email: gsj_dir@mcmaster.ca Date

If you have any questions regarding this form, please contact the Assistant Secretary, School of Graduate Studies, cbryce@mcmaster.ca

Recommendation for Change in Graduate Curriculum – For Change(s) Involving Degree Program Requirements / Procedures / Milestones

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3. A representative from the department is **required to attend** the Faculty Curriculum and Policy Committee meeting during which this recommendation for change in graduate curriculum will be discussed.

DEPARTMENT	Greek and Roman Studies			
NAME OF PROGRAM and PLAN	GKRMSDDPHD - Greek&Roman Studies–Dual Degree PhD GKRMSTPHD – Greek&Roman Studies PhD			
DEGREE	PhD			
NATURE OF RECOMMENDATION (PLEASE CHECK APPROPRIATE BOX)				
Is this change a result of an IQAP review? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No				
Creation of a New Milestone <input type="checkbox"/>				
Change in Admission Requirements		Change in Comprehensive Examination Procedure	X	Change in Course/Program Requirements
Change in the Description of a section of the Graduate Calendar		X	EXPLAIN: Yes, there will be a change in the description of #4 of the PhD requirements in the graduate calendar (see below)	
Other Changes:	Explain: 			



Describe the existing requirement/procedure:

As part of the Requirements for the PhD degree (#4), students are required to write
“Two comprehensive examinations, covering special areas of Greek and Latin literature or Ancient History or Classical Art and Archaeology; these are to be assigned by the supervisory committee in preparation for the thesis;”

Provide a detailed description of the Recommended Change (*Attach additional pages if space is not sufficient.*)

The department recommends removing one of the required area comprehensive examinations. The proposed revised language for the calendar is below.

Rationale for the Recommended Change (How does the requirement fit into the department’s program and/or tie to existing Program Learning Outcomes from the program’s IQAP cyclical review?):

This change is inspired by the Recommendations on Shortening the PhD document. The department has carefully considered how the current curriculum and milestones are serving students and facilitating timely completion of the PhD. Our conclusion was that, given the broad coursework students complete in year 1, removing one comprehensive examination will not be deleterious to their education and training, and will allow them to move on to their primary research more swiftly.

Provide implementation date: (*Implementation date should be at the beginning of the academic year*)

September 2025

Are there any other details of the recommended change that the curriculum and policy committee should be aware of? If yes, please explain:

No

Provide a description of the recommended change to be included in the calendar (please include a tracked changes version of the calendar section affected if applicable):

Under Requirements for the PhD degree (#4)

One~~Two~~ comprehensive examinations, covering a special areas of Greek and Latin literature or Ancient History or Classical Art and Archaeology; th~~isese~~ is~~are~~ to be assigned by the supervisory committee in preparation for the thesis

Contact information for the recommended change:

Name: Kathryn Mattison Email: mattisk@mcmaster.ca Date submitted: January 6, 2025

If you have any questions regarding this form, please contact the Assistant Secretary, School of Graduate Studies, cbryce@mcmaster.ca

Recommendation for Change in Graduate Curriculum – For Change(s) Involving Degree Program Requirements / Procedures / Milestones

Please read the following notes before completing this form:

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3. A representative from the department is **required to attend** the Faculty Curriculum and Policy Committee meeting during which this recommendation for change in graduate curriculum will be discussed.

DEPARTMENT	History				
NAME OF PROGRAM and PLAN	HISTPHD				
DEGREE	Doctor of Philosophy				
NATURE OF RECOMMENDATION (PLEASE CHECK APPROPRIATE BOX)					
Is this change a result of an IQAP review? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No					
Creation of a New Milestone <input type="checkbox"/>					
Change in Admission Requirements	<input type="checkbox"/>	Change in Comprehensive Examination Procedure	<input type="checkbox"/> Yes	Change in Course/Program Requirements	<input type="checkbox"/> Yes
Change in the Description of a section of the Graduate Calendar	<input type="checkbox"/>	EXPLAIN:			
Other Changes:	<input type="checkbox"/>	Explain:			



Describe the existing requirement/procedure:

Current PhD students are required to complete an examination in their Major and Minor fields in the Department of History. No professionalization required.

Provide a detailed description of the Recommended Change (*Attach additional pages if space is not sufficient.*)

Change to more inclusive language (his/her to their).

Removal of mandatory examinations from Major and Minor coursework. Can still be provided but in line with current department policy and feedback from PhD students.

Addition of professionalization requirement activities within the first 2 years of their program.

See attached for edits made.

Rationale for the Recommended Change (How does the requirement fit into the department's program and/or tie to existing Program Learning Outcomes from the program's IQAP cyclical review?):

Based on feedback from the recent "Reimagining of the PhD" report. Aligns with current department protocol. Removing the mandatory component so that PhD students may complete their Major and Minor fields within the appropriate deadline.

Provide implementation date: (*Implementation date should be at the beginning of the academic year*)

September 1, 2025

Are there any other details of the recommended change that the curriculum and policy committee should be aware of? If yes, please explain:

N/A

Provide a description of the recommended change to be included in the calendar (please include a tracked changes version of the calendar section affected if applicable):



See attached document "HISTORY PhD requirements".

Contact information for the recommended change:

Name: Alison McQueen Email: ajmcq@mcmaster.ca Date submitted: 30 January 2025

If you have any questions regarding this form, please contact the Assistant Secretary, School of Graduate Studies, cbryce@mcmaster.ca

PhD Requirements

When admission to Ph.D. work has been granted a candidate will, in consultation with ~~his or her~~their prospective supervisor and the Graduate Studies Chair of the Department, select two Minor Fields and one Major Specialization. Minor Fields and Major Specialization will cover the principal literature in the areas of concentration.

Minor fields normally consist of two half-year 700-level graduate reading seminars in each of which a major historiographical essay ~~and a written course examination are~~is required. The grade for a minor field will consist of the grades for the in-course requirements, ~~the examination,~~ and the historiographical essay, ~~in combination as indicated by the minor field supervisor.~~ One minor field course will be taken in the fall term, the second in the winter term.

While some overlap may be deemed beneficial, the Minor Fields should not duplicate Major Specialization reading. All doctoral candidates must have a minimum of three, and usually four, instructors supervising the combination of their Minor Fields and Major Specialization.

Major Specialization preparation begins in September and takes the form of a reading course that will run normally until the following May. The reading for the course will be determined by the course instructors with oversight from the department's Graduate Studies Committee to ensure appropriate breadth and depth of the reading list. As part of the reading course candidates will complete a significant historiographical paper or papers ~~as well as a mandatory examination.~~

Successful completion of 6 units of Minor-Field coursework and 6 units of Major Specialization coursework, fulfill the course requirements of the School of Graduate Studies for doctoral candidates. Satisfactory performance in doctoral Minor Field and Major Specialization courses is a minimum grade of B-. A single grade of F on any course in the Ph.D. program, or two B- grades, entails automatic withdrawal from the program.

PhD candidates are required to participate in professionalization activities while in the first two years of their program. The professionalization milestone can be fulfilled by participating in at least three relevant seminar meetings of HIS 742 while in their first or second year as a PhD. If a PhD candidate successful passed HIS 742 as an MA, this milestone will be considered as met.

Finally, all PhD candidates will write a dissertation research proposal by the end of their first year in the PhD programme. Each candidate's proposal, of 10-15 pages in length, would be defended on a Pass/Fail basis by the candidate's PhD committee no later than the ~~third week of~~end of September. This defence will constitute the required PhD

comprehensive examination (written and oral). In order to attain a passing mark, the dissertation proposal and its oral defense must satisfactorily demonstrate breadth of knowledge and the integration of key ideas and methods related to the student's thesis area. Successful passage of the comprehensive examination along with successful completion of the coursework is required before a candidate may proceed in programme.

Recommendation for Change in Graduate Curriculum – For Change(s) Involving Degree Program Requirements / Procedures / Milestones

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3. A representative from the department is **required to attend** the Faculty Curriculum and Policy Committee meeting during which this recommendation for change in graduate curriculum will be discussed.

DEPARTMENT	Philosophy		
NAME OF PROGRAM and PLAN	PHILMA		
DEGREE	GHHMA		
NATURE OF RECOMMENDATION (PLEASE CHECK APPROPRIATE BOX)			
Is this change a result of an IQAP review? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No			
Creation of a New Milestone <input type="checkbox"/>			
Change in Admission Requirements	X	Change in Comprehensive Examination Procedure	Change in Course/Program Requirements
Change in the Description of a section of the Graduate Calendar		EXPLAIN:	
Other Changes:	Explain:		
Describe the existing requirement/procedure:			
PHILMA Admissions: Require a BA in Honours Philosophy.			



Provide a detailed description of the Recommended Change (*Attach additional pages if space is not sufficient.*)

Aligning the calendar description so it reflects current practice.

Rationale for the Recommended Change (How does the requirement fit into the department's program and/or tie to existing Program Learning Outcomes from the program's IQAP cyclical review?):

Aligning the calendar description so it reflects current practice.

Provide implementation date: (*Implementation date should be at the beginning of the academic year*)

2025/26 SGS Calendar, Sept 1

Are there any other details of the recommended change that the curriculum and policy committee should be aware of? If yes, please explain:

n/a

Provide a description of the recommended change to be included in the calendar (please include a tracked changes version of the calendar section affected if applicable):

Current Calendar text 2024/25 with 2025/26 proposed changes tracked:

MA Degree

Admission

Admission to the M.A. program in Philosophy requires, subject to the general regulations of the School of Graduate Studies, a B.A. with at least B+ (or the equivalent) standing in Honours Philosophy, or Honours Philosophy in combination with another subject or Honours in a closely related discipline, or Honours in another subject with a significant background of coursework in Philosophy, such as a Concurrent Certificate or Minor. ~~Other students may be admitted as candidates for the degree upon completion of prerequisite studies prescribed by the Department.~~

Contact information for the recommended change:

Name: Alice Pinheiro Walla Email: phdphil@mcmaster.ca Date submitted: January 20, 2025

If you have any questions regarding this form, please contact the Assistant Secretary, School of Graduate Studies, cbryce@mcmaster.ca

Old language:

M.A. Degree

Admission

Admission to the M.A. program in Philosophy requires, subject to the general regulations of the School of Graduate Studies, a B.A. with at least B+ (or the equivalent) standing in Honours Philosophy, or Honours Philosophy in combination with another subject. Other students may be admitted as candidates for the degree upon completion of prerequisite studies prescribed by the Department.

Proposed new:

M.A. Degree

Admission

Admission to the M.A. program in Philosophy requires, subject to the general regulations of the School of Graduate Studies, a B.A. with at least B+ (or the equivalent) standing in Honours Philosophy, or Honours Philosophy in combination with another subject, or Honours in a closely related discipline, or Honours in another subject with a significant background of coursework in Philosophy, such as a Concurrent Certificate or Minor.

Recommendation for Change in Graduate Curriculum – For Change(s) Involving Degree Program Requirements / Procedures / Milestones

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DEPARTMENT		Philosophy	
NAME OF PROGRAM and PLAN		PHILMA	
DEGREE	GHHMA		
NATURE OF RECOMMENDATION (PLEASE CHECK APPROPRIATE BOX)			
Is this change a result of an IQAP review? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No			
Creation of a New Milestone <input type="checkbox"/>			
Change in Admission Requirements		Change in Comprehensive Examination Procedure	Change in Course/Program Requirements
Change in the Description of a section of the Graduate Calendar		X	EXPLAIN: Aligning the calendar description with usual practice in terms of course selection, and allowing one 3-unit course in another program with MA advisor permission.
Other Changes:	Explain:		



Describe the existing requirement/procedure:

PHILMA Course requirements: Students, with permission and service request submit paperwork to complete any coursework outside of the philosophy program.

Provide a detailed description of the Recommended Change (*Attach additional pages if space is not sufficient.*)

Course requirements: MA students may take up to 3 units outside of the department with permission from MA advisor

Rationale for the Recommended Change (How does the requirement fit into the department's program and/or tie to existing Program Learning Outcomes from the program's IQAP cyclical review?):

Course requirements: Aligning the calendar description with usual practice.

Provide implementation date: (*Implementation date should be at the beginning of the academic year*)

2025/26 SGS Calendar, Sept 1

Are there any other details of the recommended change that the curriculum and policy committee should be aware of? If yes, please explain:

n/a

Provide a description of the recommended change to be included in the calendar (please include a tracked changes version of the calendar section affected if applicable):

Current Calendar text 2024/25, with 2025/26 proposed changes tracked:

MA Degree

Requirements

The requirements for the M.A. are: B- standing or better in course-work, normally amounting to six one-term courses or the equivalent, and a satisfactory thesis and oral defense on a subject approved by the Department. The Department recommends that students with deficiencies in their undergraduate preparation in Philosophy should remedy these deficiencies through the courses they select. The thesis should demonstrate a capacity for independent study and critical judgement. With the permission of the MA Advisor, students



may take 3 units of electives from graduate courses offered by programs other than Philosophy.

Contact information for the recommended change:

Name: Alice Pinheiro Walla Email: phdphil@mcmaster.ca Date submitted: January 20, 2025

If you have any questions regarding this form, please contact the Assistant Secretary, School of Graduate Studies, cbryce@mcmaster.ca

Recommendation for Change in Graduate Curriculum – For Change(s) Involving Degree Program Requirements / Procedures / Milestones

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DEPARTMENT		Philosophy	
NAME OF PROGRAM and PLAN		PHILPHD	
DEGREE	GHMPH		
NATURE OF RECOMMENDATION (PLEASE CHECK APPROPRIATE BOX)			
Is this change a result of an IQAP review? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No			
Creation of a New Milestone <input type="checkbox"/>			
Change in Admission Requirements		Change in Comprehensive Examination Procedure	Change in Course/Program Requirements
Change in the Description of a section of the Graduate Calendar		X	EXPLAIN: Aligning the calendar description with usual practice in terms of course selection, and permitting one 3-unit course in another program with permission.
Other Changes:	Explain:		



Describe the existing requirement/procedure:

PHILPHD Course requirements: Students, with permission and service request submit paperwork to complete any coursework outside of program.

Provide a detailed description of the Recommended Change (*Attach additional pages if space is not sufficient.*)

Course requirements: PHD students may take up to 3 units outside of the department with permission from PhD Advisor.

Rationale for the Recommended Change (How does the requirement fit into the department's program and/or tie to existing Program Learning Outcomes from the program's IQAP cyclical review?):

Course requirements: Aligning the calendar description with usual practice.

Provide implementation date: (*Implementation date should be at the beginning of the academic year*)

2025/26 SGS Calendar, Sept 1

Are there any other details of the recommended change that the curriculum and policy committee should be aware of? If yes, please explain:

n/a

Provide a description of the recommended change to be included in the calendar (please include a tracked changes version of the calendar section affected if applicable):

Current Calendar text 2024/25, with 2025/26 proposed changes tracked:

Ph.D. Degree

Requirements

Courses:

Ph.D. students [are required to](#) take six one-term courses, one of which is the Ph.D. Seminar. [With the permission of the Ph.D. Advisor, students may take 3 units of electives from graduate courses offered by programs other than Philosophy.](#)

Current Calendar text 2024/25 with 2025/26 proposed changes tracked:

Contact information for the recommended change:

Name: Alice Pinheiro Walla Email: phdphil@mcmaster.ca Date submitted: January 20, 2025

If you have any questions regarding this form, please contact the Assistant Secretary, School of Graduate Studies, cbryce@mcmaster.ca

To : Graduate Council

From : Christina Bryce
Assistant Graduate Secretary

At its meeting on February 14th the Faculty of Science Graduate Curriculum and Policy Committee approved the following recommendations.

Please note that this recommendation was approved by the Faculty of Science.

For Approval of Graduate Council:

- **Computational Science and Engineering***
 - **New Dual Degree Stream**

***also approved by the Faculties of Business and Engineering**

Recommendation for Change in Graduate Curriculum – For Change(s) Involving Degree Program Requirements / Procedures / Milestones

Please read the following notes before completing this form:

1. This form must be completed for all changes involving degree program requirements/procedures. All sections of this form must be completed.
2. An electronic version of this form (must be in MS WORD not PDF) should be emailed to the Assistant Secretary, School of Graduate Studies (cbryce@mcmaster.ca).
3. A representative from the department is **required to attend** the Faculty Curriculum and Policy Committee meeting during which this recommendation for change in graduate curriculum will be discussed.

DEPARTMENT	Mathematics and Statistics		
NAME OF PROGRAM and PLAN	M.A.Sc. or M.Sc. in Computational Science and Engineering (This form concerns a dual degree stream of these programs between McMaster University, Université Grenoble Alpes (UGA) and Institut Polytechnique de Grenoble (INP-UGA).)		
DEGREE	M.A.Sc. (thesis) in Computational Science and Engineering and M.Sc. (thesis) in Computational Science and Engineering		
NATURE OF RECOMMENDATION (PLEASE CHECK APPROPRIATE BOX)			
Is this change a result of an IQAP review? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No			
Creation of a New Milestone <input type="checkbox"/>			
Change in Admission Requirements	<input type="checkbox"/>	Change in Comprehensive Examination Procedure	<input type="checkbox"/>
Change in the Description of a section of the Graduate Calendar	<input checked="" type="checkbox"/>	EXPLAIN: We wish to update the calendar with a description of requirements for the dual degree stream of the M.A.Sc. and MSc. Programs in Computational Science and Engineering (M.A.Sc. and M.Sc. Thesis in Computational Science and Engineering with Université Grenoble-Alpes (France)).	

Other Changes:	Explain:
<p>Describe the existing requirement/procedure:</p> <p>The dual degree stream appears to have existed since 2022-23 on an interim basis without a formal approval process.</p>	

<p>Provide a detailed description of the Recommended Change (<i>Attach additional pages if space is not sufficient.</i>)</p> <p>The dual degree stream with Grenoble is designed to allow students enrolled in the Computational Science and Engineering M.A.Sc. and M.Sc. thesis program at McMaster to spend the 2nd academic year of their program in Grenoble taking courses and carrying out research with a local co-supervisor. Conversely, Master's students enrolled in Grenoble are to spend their 2nd year taking a subset of their required courses at McMaster while being co-supervised by a McMaster faculty member. All the degree requirements from both programs are to be completed, leading to the student receiving degrees from both institutions. An overview and a detailed side-by-side list of degree requirements are given in the accompanying dual degree stream form. McMaster can be either the host or home institution.</p>
<p>Rationale for the Recommended Change (How does the requirement fit into the department's program and/or tie to existing Program Learning Outcomes from the program's IQAP cyclical review?):</p> <ol style="list-style-type: none"> 1. The dual degree stream supports efforts to harmonize graduate education and establish international curricula and improve student mobility, international experience, and potential for international collaboration. 2. The stream fits into the McMaster Model for Global engagement; 3. The dual degree stream coheres directly with the Department's MSc. Program PLOs, in particular: (i) Research: explain and interpret a coherent body of advanced mathematical knowledge and learn to independently formulate mathematical questions; (ii) Communication: improve the student's capacity to articulate and justify modern ideas and arguments in a manner to varied target audiences.



Provide implementation date: (*Implementation date should be at the beginning of the academic year*)

From the start of the 2025-2026 academic year.

Are there any other details of the recommended change that the curriculum and policy committee should be aware of? If yes, please explain:

N/A

Provide a description of the recommended change to be included in the calendar (please include a tracked changes version of the calendar section affected if applicable):

(to be added to both the M.A.Sc and M.Sc. Computational Science and Engineering calendar description):

Dual degree stream

Students accepted to the Computational Science and Engineering M.A.Sc and M.Sc. Thesis programs may apply to concurrently earn a Master of Science in Industrial and Applied Mathematics at the Universite Grenoble Alpes (France). After completing the minimum course requirements in their first year and choosing a principal supervisor in McMaster, students will complete their second academic year in Grenoble completing additional coursework and carrying out research under the supervision of a Grenoble faculty member.

Contact information for the recommended change:

Name: Blaise Bourdin (acting graduate chair) – Computational Science and Engineering

Email: bourdin@mcmaster.ca

Date submitted: Jan 29 2025

If you have any questions regarding this form, please contact the Assistant Secretary, School of Graduate Studies, cbryce@mcmaster.ca

MSc. Mathematics and Statistics Dual Degree Stream

McMaster University home/host department:

Department of Mathematics and Statistics

Partner Institutions:

Universite Grenoble Alpes (UGA) and the Institut Polytechnique de Grenoble (Grenoble INP)

Overview:

The above parties have established a dual degree stream. The degrees are the **2-year M.A.Sc. or M.Sc. (thesis)** program in Computational Science and Engineering at McMaster and the **2-year Master of Science** program in Industrial and Applied Mathematics (MSIAM) at UGA/ Grenoble INP). Students in the dual degree stream must successfully complete the program requirements from both institutions. Tuition is paid to the home institution (although supplementary fees e.g., for health insurance, may be levied by the host institution). The agreement is valid until 2027/2028.

Students in the dual degree stream are selected from students **already accepted** in the corresponding program of the **Home** institutions. Students spend the first full academic year at the Home institution and the second at the Host institution and must complete a minimum number of courses in both institutions as described in detail below. Grades and credits are awarded according to the rules of institution where the course is offered. Each student has a principal supervisor and co-supervisor at the home and host institution respectively.

Degrees awarded:

McMaster: MA.Sc. (when the supervisor is from the Faculty of Engineering) or M.Sc. (when the supervisor is from the Faculty of Science or the deGroote School of Business) in Computational Science and Engineering;

Grenoble: Master “Mathématiques et applications” of Grenoble INP-UGA. (English: Master of Science in Industrial and Applied Mathematics).

Dual Degree Stream Curriculum Pathway: CSE M.A.Sc and M.Sc.

Note: Students in the CSE Masters program receive a M.A.Sc. when the McMaster supervisor is from the Faculty of Engineering and M.Sc. when the McMaster supervisor is from the Faculty of Science or the deGroote School of Business. The requirements for both programs are strictly identical.

McMaster University Program Requirements (each degree within a program will need separate tables completed)	Partner Institution Program Requirements	Dual Degree Pathway
Course requirements: 4 one-term courses with with an average of at least B-. Two of the four courses must normally be chosen from the two core courses (CSE 700 and 701) offered by the School. One of the courses may be at the 600-level where appropriate. Additional courses beyond the minimum four may be required by the Director, in consultation with the supervisor.	Course requirements: 2 Full semesters: 1st year: 60 credits (ECTS) in the 2 nd year Ensimag program or MSIAM for INP students and MS1AM program for UGA students 2 nd year: coursework: 30 credits (ECTS). Research work for 30 ECTS	McMaster students: 1 st year: Full study (four courses) at McMaster in the CSE program. 2 nd year: (Sept-Jan) 30 ECTS of courses amongst the MSIAM courses offered. (Feb-Aug) research work equivalent to 30 ECTS. Grenoble Students: 1 st year: for IPN students: full time study with 60 ECTS in the Ensimag program or the Applied Mathematics MSc program. For UGA students, full time study in 1 st year of the Applied Mathematics MSc program. 2 nd year: for both IPN and UGA students, 3 terms (one full academic year) at McMaster in the CSE program with coursework equivalent to 30 ECTS (equivalent to 2 courses).
Thesis Requirement: Written thesis and oral defence.	Thesis Requirement: Written thesis and oral defence	Thesis Requirement: Written thesis and oral defence to take place in person and remotely.

To : Graduate Council

From : Christina Bryce
Assistant Graduate Secretary

At its meeting on February 20th the Faculty of Social Sciences Graduate Curriculum and Policy Committee approved the following graduate curriculum recommendations.

Please note that these recommendations were submitted for approval by the Faculty of Social Science.

For Information of Graduate Council:

- **Globalization**
 - **New Cross-listed Courses**
 - 724 Planetary Health: An Interdisciplinary Perspective
 - 729 Refugee Health: Policies and Practices
- **Indigenous Studies**
 - **New Courses**
 - 6IM3 Indigenous Politics
 - **Course Changes**
 - 752 Trans-Atlantic Indigeneity: Indigenous Literary Presence in Europe
 - 782 Seed Stories of Indigenous and Black Survivance
- **Political Science**
 - **New Cross-Listed Course**
 - 6IM3 Indigenous Politics

April 2025 Graduate Council

New Awards – For Approval

Award Name: The Ric Boyd Endocrinology Bursary

Terms:

Established in 2025 by the friends and family of Eric 'Ric' Boyd to advance the study of endocrinology, which was one of his lifelong passions. To be granted to graduate students enrolled in the Faculty of Health Sciences who demonstrate financial need. Preference will be given to students conducting research in the Centre for Metabolism, Obesity, and Diabetes Research (MODR).