

Gilmour Hall, Room 212 1280 Main Street West Hamilton, ON L8S 4L8

 To
 :
 Members of Graduate Council

 From
 :
 Christina Bryce

 Assistant Graduate Secretary

The next meeting of Graduate Council will be held on **Tuesday April 18th at 9:30 am in Council Chambers** (GH 111)

Listed below are the agenda items for discussion.

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

AGENDA

- I. Opening Remarks
- II. Minutes of the meeting of March 21st, 2023

Approval

- III. Business arising
- IV. Report from the Graduate Associate Deans
- V. Report from the Associate Registrar and Graduate Secretary
- VI. Faculty of Engineering Graduate Curriculum and Policy Committee report Approval
- VII. Faculty of Health Sciences Graduate Policy and Curriculum Committee Report
 Approval
- VIII. Faculty of Humanities Graduate Curriculum and Policy Committee Report *Approval*
 - IX. Faculty of Health Sciences Spring 2023 Graduands Approval – to be circulated
 - X. Update on iThenticate Information



Tuesday March 21st at 9:30 am in Council Chambers (GH 111)

Present: S. Hranilovic (Chair), B. Gupta, S. Hanna, M. Thompson, M. Horn, M. Verma, V. Kuperman, S. Han, N. Malik, D. Emslie, E. Grodek, Z. Lea, X. Li, L. Side, L. Dondi, P. Guo, S. Pushkar, M. Young, G. Nair, A. Anand, M. Parlar, H. Abdulhussain, S. Baschiera (Associate Registrar and Graduate Secretary), C. Bryce, (Assistant Graduate Secretary)

Regrets: M. Heath, D. Gillespie, C. Ching, S. Raha

I. Opening Remarks

Dr. Hranilovic reported on the following items:

- The first meeting of the task force on graduate student funding, highlighting the items discussed, including campus consultation, a mechanism for feedback and plans for the upcoming meeting;
- The upcoming School of Graduate Studies Review;
- The status of the graduate residence building.

II. Minutes of the meeting of February 21st, 2023

It was duly moved and seconded, **'that the Graduate Council approve the minutes of the February 21**st, **2023 meeting, as circulated.'**

The motion was **carried**.

III. Business arising

Dr. Hanna noted that at the previous meeting there had been a representative speaking from MacPherson about IQAP policy and he'd raised a couple of issues, related to the ability to hold IQAP reviews remotely and the intersection of IQAP and accreditation reviews. He reported that they'd since learned that Quality Council would continue to allow reviews to be held remotely with at least one year of notice if they are changing it back to in person. He also passed along an invitation to pull together folks on the issue of the integration of IQAP and accreditation.

IV. Report from the Graduate Associate Deans

Dr. Hanna (Faculty of Health Sciences) reported on the following items:

- The proposed Master of Biomedical Innovation has been positively received by the Appraisal Committee, with a response submitted for Quality Council consideration, noting they are on track to launch in September;
- The FHS Graduate Plenary on May 8th and 9th in the Heersink Pavilion of the Faculty of Health Sciences Library;
- Continued to work with the Health Sciences Graduate Student Association on developing terms of reference for their organization.

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

Discussions in the Faculty on the student-supervisor relationship and graduate excellence;



• Work to streamline the process for the cotutelle framework, noting upcoming consultations with the associate deans for their feedback and an update to Graduate Council in the coming meetings.

Dr. Horn (Faculty of Humanities) reported on the following items:

- The UBC book publishing talk had been rescheduled for the 29th of March;
- A request put forward by the Faculty to the Strategic Alignment Fund to examine how to shorten the Ph.D.;a
- A meeting with graduate student representatives from the Faculty to meet with the Provost, Dean of the Faculty, Dean of the School of Graduate Studies and Graduate Associate Dean.

Members discussed the average length of Ph.D. studies.

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

• Offers of admission in the Faculty, noting that the acceptance rate is quite high for most professional programs and should be close to previous years.

Dr. Thompson had no report.

V. Report from the Associate Registrar and Graduate Secretary

Ms. Baschiera reported on the following item:

- Good processing times for offers of admission;
- The status of the proposal of the records and payment systems project.

In response to a question from a member, Ms. Baschiera noted that they have made the decision to hold back offers of residence until the final details are available and highlighted plans for the communication plan for the residence.

VI. Certificates and Diplomas Policy

Dr. Hranilovic explained that the changes to the policy represented work that had been taking place over a long period of time. The work lies between Graduate Council and Undergraduate Council and part of what has been submitted for approval is the creation of a joint committee between the two governing bodies.

Dr. Thompson presented the policy changes, providing context for the work that had been done leading up to the revisions. He noted that a committee had been established to determine the acceptable definition of a microcredential, within the boundaries of the McMaster Act. Like certificates there will be both academic and non-academic microcredentials, governance structure for both kinds to ensure the McMaster brand and reputation is maintained and a new office that would play a role in the administration of microcredentials.

Members discussed consultation with MacPherson, admission requirements and the distinction between the three types of graduate diplomas.

Two friendly amendments were put forward to correct a contradictory statement about learners versus students and to add a missing 'academic' where it referred to a graduate certificate.

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It as duly moved and seconded, that the Graduate Council approve, for recommendation to Senate, the changes to the Certificates and Diplomas policy, as set out in the attached.

The motion was **carried**.

It was duly moved and seconded, 'that the Graduate Council approve, for recommendation to Senate, the establishment of a Joint Committee on Certificates, Diplomas and Microcredentials'.

The motion was **carried**.

VII. Faculty of Business Graduate Curriculum and Policy Committee report

Dr. Verma reported on the following items:

- A change to admission requirements and wording for the Master of Finance program;
- An addition to the recommend electives list for the business analytics specialization in MBA.

Members discussed the language around the admission requirements. In response to a question Dr. Verma noted that they have a large number of applicants for limited spots, including those who do not meet the requirements outlined.

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

The motion was carried.

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

Dr. Hanna presented the following items for approval:

- The cancellation of the full-time option in the Master of Health Management program (also approved by the Faculty of Business;
- Calendar copy for the new Community and Public Health graduate diploma;
- Cancellation of the advanced neonatal nursing program;
- A change to requirements for the rehabilitation science course-based masters program.

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

The motion was **carried**.

IX. Faculty of Science Graduate Curriculum and Policy Committee report

Dr. Gupta presented the following items for approval:

- A change to the calendar copy around transfer requirements for Chemistry;
- A new professional activities milestone for the Master of Financial Math;
- A change to course requirements, in light of change to unit counts and to admission requirements to be clear that they're looking for a B+ minimum in the final two years for the Kinesiology programs;
- A chance to the course requirements for the course-based M.Sc. In Physics;
- A chance to course requirement for the M.Sc. in Statistics.

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He noted that for the changes proposed to the Research and Clinical Training stream of Psychology there was still some wording that had not been updated so they were withdrawing it to correct it.

It was duly moved and seconded, 'that the Graduate Council approve, for recommendation to Senate as appropriate, the changes proposed by the Faculty of Science, as described in the documents, except for the RCT changes which are withdrawn.'

The motion was **carried**.

X. New Awards

It was duly moved and seconded, that the Graduate Council approve two new awards, as set out in the attached.

The motion was withdrawn.

Member discussed the term of the Don Morrison award, noting an issue of the use of the word 'female' and that it should be referred back to University Advancement for an update to the language.

It was duly moved and seconded, 'that the Graduate Council approve the Mahmut Parlar award, as set out in the attached.'

The motion was carried.



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To : Graduate Council From : Christina Bryce Assistant Graduate Secretary

At its meeting on February 14th and March 14th and via e-ballot on March 22nd 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:

- i. Engineering Co-op Option
- ii. School of Engineering Practice and Technology
 - 1. Change to Calendar Copy MEPP
 - 2. Program Requirement Changes
 - a. MEME
 - b. MEPP
 - c. MEST
- iii. Civil Engineering
 - 1. Change to Course Requirements
 - 2. Change to Comprehensive Examination Requirements

For Information of Graduate Council:

- i. Chemical Engineering
 - 3. New Courses
 - a. 6M03 Industrial Separation Processes
 - b. 713 Collaborative Design in Controlled Release
 - c. 714 Biomedical Commercialization and Entrepreneurship
 - d. 751 Fundamentals and Advanced Topics in Process Optimization
- ii. Computing and Software
 - 4. New Course
 - a. 6CG3 Computational Geometry
- iii. Mechanical Engineering
 - 5. New Course
 - a. 718 Biomass conversion to high value products and bioenergy technology
- iv. School of Engineering Practice and Technology

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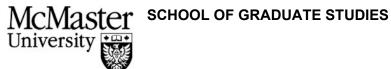
6. New Course

- a. 796 Deep Learning on Graphs
- 7. Change to Course Title
 - a. 758 Prototyping Tools (Mobile Applications)
- 8. Change to Course Description
 - a. 729 Manufacturing Systems
- 9. Change to Requisites
 - a. 6PM3 Project Management
 - b. 725 Practical Project Management for Today's Business Environment
 - c. 790 Emerging Technologies for Engineering Enterprise Innovation

v. Civil Engineering

10. Course Change

a. 799 Stormwater Management Modelling and Analysis



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		Faculty	Faculty of Engineering						
NAME OF PROGRAM and PLAN		Enginee	Engineering Co-op						
DEGREE All grad		graduate deg	rees in th	ne facu	lty				
	NAT		E OF RECOMMENDATION (PLEASE CHECK APPROPRIATE BOX)						
Is this change a result of an IC		in IQAP	revie	w? □ Yes ⊠ No					
CREATION OF NEW MILESTONE									
CHANGE IN ADMISSION			GE IN REHENSIVE NATION PROCEDURE		CHANGE IN COURSE REQUIREMENTS				
CHANGE IN THE DESCRIPTION OF A <u>SECTION</u> IN THE GRADUATE CALENDAR			EXPLAIN: Change in text around duration of co-op placements for graduate students in the faculty						
OTHER EXPLAIN: CHANGES N/A									

DESCRIBE THE EXISTING REQUIREMENT/PROCEDURE:

Master's students opting to take a co-op are currently required to complete 8 to 12 month co-ops

Doctoral students opting to take a co-op are currently required to complete 12 month co-ops

PROVIDE A DETAILED DESCRIPTION OF THE RECOMMENDED CHANGE (Attach additional pages if space is not sufficient.)

All grad students, at both the Master's and Doctoral level, will be given the option to completed coops from 4 to 12 months in length with their supervisor's approval

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?):

To offer students more flexibility in length of co-op placements

PROVIDE IMPLEMENTATION DATE: *(Implementation date should be at the beginning of the academic year)*

September, 2023

ARE THERE ANY OTHER DETAILS OF THE RECOMMENDED CHANGE THAT THE CURRICULUM AND POLICY COMMITTEE SHOULD BE AWARE OF? IF YES, 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):

Full time graduate students in the Faculty of Engineering can enroll in a paid Coop or in a Work Experience (non-Coop) option while in their graduate programmes (Master of Engineering, Master of Applied Science, Master of Science and Doctoral degrees). Students enrolled in the Coop version will be required to complete 12 months (Doctoral) or 8-12 months (Master's) **4-12 months** of paid work experience at an industrial, government or NGO employer and must return to their program for at least one term prior to graduation. The Coop experience may be acquired through a combination of 4-months scheduled breaks, sequential or not sequential. The Work Experience offers flexibility in regards to the duration of the work term and does not require the student to return for one term prior to graduation, though the cumulative work term duration may still not exceed 12 months (Doctoral) or 8 months? (Master's). **12 months for Doctoral or Master's students**.

CONTACT INFORMATION FOR THE RECOMMENDED CHANGE:

Name: Lubna Saleh

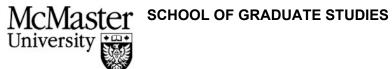
Email: salehl5@mcmaster.ca

Extension:

Date submitted: October 18, 2022

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

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		W Booth	W Booth SEPT						
NAME OF PROGRAM and PLAN		Enginee	Engineering and Public Policy						
DEGREE M.Eng									
	NA	TURE OF RE		IENDA	ATION (PLEASE CHE	СК	APPROPRIATE BOX)		
Is this char	nge	a result of a	n IQAP	revie	w? 🗆 Yes 🛛 No				
CREATION									
CHANGE IN ADMISSION REQUIREMENTS			c		GE IN REHENSIVE NATION PROCEDURE		CHANGE IN COURSE REQUIREMENTS		
CHANGE IN THE DESCRIPTIC SECTION IN THE GRADUATE CALENDAR			N OF A	•	EXPLAIN:				
OTHER CHANGES					ndicates denied applicant Also some general clear		ould reach out to the Associate of typos and wordage.		

DESCRIBE THE EXISTING REQUIREMENT/PROCEDURE:

Prospective applicants who did not attain the required standing in their undergraduate degree, should discuss their situation with the Associate Director of Graduate Studies in SEPT. If the applicant's experience is deemed sufficient, the Associate Director of Graduate Studies in SEPT will recommend a live interview. Evidence of ability to do graduate work will be required. (See Sections <u>2.1.1 Admission Requirements</u> for Master's Degree and <u>2.1.3</u> Admission of Students with Related Work Experience or Course Work Beyond the Bachelor's Degree in the Graduate Calendar.)

PROVIDE A DETAILED DESCRIPTION OF THE RECOMMENDED CHANGE (Attach additional pages if space is not sufficient.)

Remove this statement entirely. Denied applicants no longer are to contact the AD for a live interview.

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?):

Our admissions process now uses Kira services for interviews. Reaching out to the Associate Director is no longer required or recommended.

PROVIDE IMPLEMENTATION DATE: (Implementation date should be at the beginning of the academic year)

September 1, 2023

ARE THERE ANY OTHER DETAILS OF THE RECOMMENDED CHANGE THAT THE CURRICULUM AND POLICY COMMITTEE SHOULD BE AWARE OF? IF YES, EXPLAIN.

No

Engineering and Public Policy, M.E.P.P.

Return to: <u>Calendar Search</u>

In today's complex world engineers and scientists are called upon to design technical systems that provide goods and services to society in a safe, efficient and environmentally sound manner. In this context, engineers and scientists can serve as key advisors to and take the lead as decision makers in both the public and private sectors. Therefore, engineers and scientists need more than extensive technical skills; they also need an enhanced understanding of public policy and the role of engineering and science in sustainable technological, social, ecological and economic systems.

A professional Master's degree in Engineering and Public Policy (MEPP) is offered within the W Booth School of Engineering Practice and Technology. Engineers and applied scientists from a wide cross-section of organizations who want professional graduate training will find our program goes well beyond a conventional technical Master's to develop candidates as leaders in the public policy area.

Admission

Students must hold a_undergraduate degree in STEM or a 4-year non-STEM degree in a public policy-related field including, for example, political science, public policy, public administration or global studies. Applicants must have at least a B- average (equivalent to a McMaster 7.0 GPA out of 12) in the final year in all courses in the discipline, or relating to the discipline, in which the applicant proposes to do graduate work. Applicants will be required to complete an online interview. Professional work experience is desirable but not essential.

Prospective applicants who did not attain the required standing in their undergraduate degree, should discuss their situation with the Associate Director of Graduate Studies in SEPT. If the applicant's experience is deemed sufficient, the Associate Director of Graduate Studies in SEPT will recommend a live interview. Evidence of ability to do graduate work will be required. (See Sections <u>2.1.1 Admission Requirements for Master's Degree and <u>2.1.3 Admission of Students with Related Work Experience or Course Work Beyond the Bachelor's Degree in the Graduate Calendar.</u>)</u>

The W Booth School of Engineering Practice and Technology has the following program objectives for the Master's degree in Engineering and Public Policy (MEPP):

to provide a high quality educational experience to graduate engineers and scientists in the areas of engineering, science and public policy;

to foster applied research in the areas of engineering, science and public policy through the successful completion and dissemination of a research paper;

to develop viable, working linkages between engineering, science and fields of study within social sciences and the humanities (public policy, economics, society, and others); to produce graduates who will provide inspired leadership in the engineering, science and public policy areas within the public, private and NGO sectors. 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 the program in 12 months of study, beginning in September or January. Part-time students will normally be expected to complete the program in 3 years, one term (40 months).

McMaster students may receive advanced standing for up to two courses (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.

Curriculum

The curriculum has the following components:

Core courses that provide the content and methodological skills necessary for understanding and analyzing societal issues for which engineering and science can contribute to public policy solutions;

Focus elective courses that allow students to deepen their knowledge of a range of engineering, science and social science applications;

The completion of a substantive research paper on a problem at the interface of engineering, science and public policy

Research Project - Inquiry/Thesis in Engineering and Public Policy

Students select a research topic at the interface of engineering, science and public policy which is of interest to them and carries out inquiry-driven research; completes a formal research paper and prepares to publish their results for broad dissemination.

Candidates for the MEPP degree will follow a program consisting of the following and will need to complete 30 units to mee<u>t</u> the degree requirements:

Required Courses

Candidates are required to take the following six half courses (18 units):

SEP 701 / Theory and Practice of Policy Analysis: Frameworks and Models

SEP 702 / Systems Engineering and Public Policy

SEP 709 / Emerging Issues, Technology and Public Policy

SEP 6EL3 / Leading Innovation OR

SEP 773 / Leadership for Innovation

SEP 704 / Public Policy Research Project, Part 1

SEP 704 / Public Policy Research Project, Part 2

In addition students are required to take:

<u>SEP 771 / W Booth School of Engineering Practice and Technology Practitioner's</u> Forum Part I (zero units)

(full-time students only)

SEP 771 / W Booth School of Engineering Practice and Technology Practitioner's

Forum Part II (zero units)

(full-time students only)

Focus Elective Courses

Three half-courses (9 units) are required for electives. Recommended electives include but are not limited to:

SEP 6103 / Sustainable Manufacturing Processes

SEP 6X03 / LIVABLE CITIES, THE BUILT AND NATURAL ENVIRONMENT

SEP 705 / Green Engineering, Sustainability and Public Policy

SEP 706 / Energy and Public Policy

SEP 708 / Special Topics in Engineering and Public Policy

SEP 710 / International Governance and Environmental Sustainability

SEP 778 / Circular Economy - Engineering Perspectives and Application

POL SCI 784 / Quantitative Political and Policy Analysis

POL SCI 785 / Public Sector Management

POL SCI 790 / The Politics of Economic Policy in Market Economies

Cross-Disciplinary Elective Courses

Candidates are required to take one half course (3 units) which should be selected from the following approved cross-disciplinary elective list.

SEP 770 / Total Sustainability Management

SEP 790 / Emerging Technologies for Engineering Enterprise Innovation

SEP 760 / Design Thinking

SEP 777 / Cyber-Physical Systems and Industry 4.0

Additional Courses

Up to two graduate engineering half courses from departments within the Faculty of Engineering

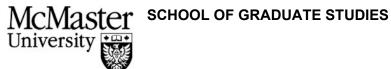
Other courses in other departments and Faculties with approval of the Associate Director of the Graduate Studies in SEPT.

Return to: Calendar Search

CONTACT INFORMATION FOR THE RECOMMENDED CHANGE:								
Name: Gail Krantzberg 23, 2022	Email: krantz@mcmaster.ca	Extension: 22153	Date submitted: Nov.					

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

IMPORTANT: PLEASE READ THE FOLLOWING NOTES BEFORE COMPLETING THIS FORM:

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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	W Booth SEPT						
NAME OF PROGRAM and PLAN		Manufac	Manufacturing - Biomanufacturing						
DEGREE		M.Eng.							
	NAT	URE OF RE		MEND	ATION (PLEASE CHE	CK /	APPROPRIATE BOX)		
Is this char	nge a	result of a	n IQAP	P revie	w? 🗆 Yes 🗆 No				
CREATION	OF NE	W MILESTO	NE 🗆						
CHANGE IN ADMISSION REQUIREMENTS		Ċ		GE IN REHENSIVE NATION PROCEDURE		CHANGE IN COURSE REQUIREMENTS	x		
CHANGE IN THE DESCRIPTION			N OF A	*	EXPLAIN:				
SECTION IN THE GRADUATE CALENDAR									
OTHER CHANGES		EXPLAIN:							

DESCRIBE THE EXISTING REQUIREMENT/PROCEDURE:

SEP 729 is not a recommended elective for the Biomanufacturing stream

PROVIDE A DETAILED DESCRIPTION OF THE RECOMMENDED CHANGE (Attach additional pages if space is not sufficient.)

Add SEP 729 as a recommended elective in the Biomanufacturing stream

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 course will be delivered for students in the Master of Engineering in Manufacturing Engineering

(MEME) program. The scope of the course has been focused to allow more in depth and focused

exploration of fundamental topics such as FMEA, Risk management, queueing theory and factory physics as they apply to manufacturing operations. The course has been so successful with students that a need was identified to refocus its scope on discrete technique while introducing their integration in manufacturing operation simulation.

According to the program learning objectives (PLOs) for the MEME program defined in the IQAP document, this course will help students acquire the knowledge and skills to (in order):

PLO 1 Systematic understanding of knowledge including relevant inside or outside the field of discipline and a critical awareness of current problems.

PLO 2 Enable a conceptual understanding and methodological competence that enable a working comprehension and critical evaluation of current and advanced manufacturing engineering field

PLO 3 Competence in the applied research process by applying an existing engineering knowledge in the critical analysis of a specific problem or in a unique setting.

PLO 4 The ethical behavior consistent with academic integrity and the use of appropriate guidelines and procedures for responsible conduct of research.

PLO 5 The ability to communicate ideas, issues and conclusions clearly, orally and in writing, to a range of audiences.

PLO 6 Cognizance of the complexity of knowledge and of the potential contributions of other interpretations, methods, and disciplines.

Course Learning Outcomes:

1 Discuss the theory, concepts and principles of manufacturing engineering and quality systems;

2 Analyse a range of seminal articles and key reference materials underpinning the discipline;

3 Develop range of issues and problems;

4 Demonstrate the ability to work independently and as an effective member of a team in order to

apply their acquired knowledge and skills to both theoretical and practical problems.

This course will provide students with an opportunity to develop the Graduate Attributes specified below:

- Deep discipline knowledge and intellectual breadth. Graduates have comprehensive knowledge and understanding of their subject area, the ability to engage with different traditions of thought, and the ability to apply their knowledge in practice including in multi-disciplinary or contexts. (PLO#1, 2, 3)
- 2. Creative and critical thinking, and problem solving. Graduates are effective problems-solvers, able to apply critical, creative and evidence-based thinking to conceive innovative responses to future challenges. (PLO#1, 2, 4, 5)

PROVIDE IMPLEMENTATION DATE: *(Implementation date should be at the beginning of the academic year)*

September 1, 2023

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):

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 students may receive advanced standing for up to two courses (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 professional development courses
- 3 to 4 core courses
- 1 to 2 technical elective courses
- 1 cross-disciplinary elective
- 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 professional development courses
- 4 to 6 core courses
- 1 to 3 technical elective courses
- 1 cross-disciplinary elective

All full-time students must register for the seminar series courses (attendance is mandatory), which are:

- SEP 771 / W Booth School of Engineering Practice and Technology Practitioner's Forum Part I
- SEP 771 / W Booth School of Engineering Practice and Technology Practitioner's Forum Part II

(seminar series, full-time students only)

SEP 771 is a seminar series presented by guest speakers, invited by the School, of relevance to all M.Eng. programs at the School. All full-time students are required to take these courses. Course grades are either 'pass' or 'fail'. In order to pass the course the student must attend a minimum of 80% of the seminars.

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 741 / Project Management for High Tech Projects

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
- Other elective coures available.

Cross-Disciplinary Elective Courses

Candidates are required to complete one half course (3 units) which should be selected from the following approved cross-disciplinary elective list.

- SEP 709 / Emerging Issues, Technology and Public Policy
- SEP 710 / International Governance and Environmental Sustainability
- SEP 6X03 / LIVABLE CITIES, THE BUILT AND NATURAL ENVIRONMENT
- SEP 793 / Entrepreneurial Opportunity Identification
- SEP 770 / Total Sustainability Management

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 professional development courses
 - 2 to 3 core courses
 - 0 to 1 technical elective courses
 - 1 cross-disciplinary elective course

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 professional development courses
 - 3 to 5 core courses
 - \circ 0 to 2 technical elective courses
 - 1 cross-disciplinary elective course

All full-time students must register for the seminar series courses (attendance is mandatory), which are:

- SEP 771 / W Booth School of Engineering Practice and Technology Practitioner's Forum Part I
- SEP 771 / W Booth School of Engineering Practice and Technology Practitioner's Forum Part II

(seminar series, full-time students only)

SEP 771 is a seminar series presented by guest speakers, invited by the School, of relevance to all M.Eng. programs at the School. All full-time students are required to take these courses. Course grades are either 'pass' or 'fail'. In order to pass the course the student must attend a minimum of 80% of the seminars.

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 741 / Project Management for High Tech Projects

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 / Current Good Manufacturing Practice Upstream Operations SEP 745 / Fermentation of Recombinant Microorganisms SEP 743 / Animal Cell Culture Engineering SEP 765 / Current Good Manufacturing Practice Downstream Operations Technical Elective Courses
Recommended technical elective courses are:
 SEP 749 / Biomedical Engineering SEP 766 / Membrane-Based Bioseparation BIOMED 799 / Independent Study in Biomedical Engineering SEP 6BI3 / Bioinformatics SEP 6BS3 / Biotechnology Regulations SEP 729 / Manufacturing Systems Cross-Disciplinary Elective Courses
Candidates are required to complete one half course (3 units) which should be selected from the following approved cross-disciplinary elective list.
 SEP 709 / Emerging Issues, Technology and Public Policy SEP 710 / International Governance and Environmental Sustainability
 SEP 6X03 / LIVABLE CITIES, THE BUILT AND NATURAL ENVIRONMENT
 SEP 793 / Entrepreneurial Opportunity Identification SEP 770 / Total Sustainability Management
CONTACT INFORMATION FOR THE RECOMMENDED CHANGE:
Name: Fei Geng Email: gengf@mcmaster.ca Extension: Date submitted: Feb 23 Tom Lee leet77@mcmaster.ca

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

IMPC	RTANT:	PLEASE REA	D THE F	OLLOWING NOTES BEF	ORE COMPLETING THIS FORM:		
 This form must be completed for <u>ALL</u> changes involving degree program requirements/procedures. <u>All</u> sections of this form <u>must</u> be completed. 							
				e in MS WORD <u>not</u> PDF) : e@mcmaster.ca).	should be emailed to the Assistant		
				equired to attend the Fac change in graduate curric	ulty Curriculum and Policy Committee ulum will be discussed.		
DEPARTME	NT	W Booth SEF	Ϋ́Τ				
NAME OF PROGRAM a PLAN	and	Engineering a	Engineering and Public Policy				
DEGREE				M.Eng			
	NATUR	RE OF RECO	MMEND	ATION (PLEASE CHE	CK APPROPRIATE BOX)		
Is this char	Is this change a result of an IQAP review? □ Yes ⊠ No						
CHANGE IN ADMISSION REQUIREMENTS CHANGE IN COMPREHENSIVE EXAMINATION PROCEDURE CHANGE IN COURSE REQUIREMENTS							
CHANGE IN <u>SECTION</u> IN CALENDAR		SCRIPTION OF ADUATE	A	EXPLAIN:			
OTHER CHANGES							

1

DESCRIBE THE EXISTING REQUIREMENT/PROCEDURE:

SEP 702 is currently a required course in MEPP. SEP 778 is a focus elective.

PROVIDE A DETAILED DESCRIPTION OF THE RECOMMENDED CHANGE (Attach additional pages if space is not sufficient.)

Make SEP 778 a required course in MEPP and SEP 702 an elective

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 circular economy is emerging as a sustainable public policy paradigm and the learning outcomes for our students will be more contemporary than systems engineering.

PROVIDE IMPLEMENTATION DATE: (Implementation date should be at the beginning of the academic year)

September 1, 2023

ARE THERE ANY OTHER DETAILS OF THE RECOMMENDED CHANGE THAT THE CURRICULUM AND POLICY COMMITTEE SHOULD BE AWARE OF? IF YES, EXPLAIN.

No

Engineering and Public Policy, M.E.P.P.

Return to: Calendar Search

In today's complex world engineers and scientists are called upon to design technical systems that provide goods and services to society in a safe, efficient and environmentally sound manner. In this context, engineers and scientists can serve as key advisors to and take the lead as decision makers in both the public and private sectors.

Therefore, engineers and scientists need more than extensive technical skills; they also need an enhanced understanding of public policy and the role of engineering and science in sustainable technological, social, ecological and economic systems.

A professional Master's degree in Engineering and Public Policy (MEPP) is offered within the W Booth School of Engineering Practice and Technology. Engineers and applied scientists from a wide cross-section of organizations who want professional graduate training will find our program goes well beyond a conventional technical Master's to develop candidates as leaders in the public policy area.

Admission

Students must hold a undergraduate degree in STEM or a 4-year non-STEM degree in a public policy-related field including, for example, political science, public policy, public administration or global studies. Applicants must have at least a B- average (equivalent to a McMaster 7.0 GPA out of 12) in the final year in all courses in the discipline, or relating to the discipline, in which the applicant proposes to do graduate work. Applicants will be required to complete an online interview. Professional work experience is desirable but not essential.

Prospective applicants who did not attain the required standing in their undergraduate degree, should discuss their situation with the Associate Director of Graduate Studies in SEPT. If the applicant's experience is deemed sufficient, the Associate Director of Graduate Studies in SEPT will recommend a live interview. Evidence of ability to do graduate work will be required. (See Sections <u>2.1.1 Admission Requirements</u> for Master's Degree and <u>2.1.3 Admission of Students with Related Work Experience or Course Work Beyond the Bachelor's Degree</u> in the Graduate Calendar.)

The W Booth School of Engineering Practice and Technology has the following program objectives for the Master's degree in Engineering and Public Policy (MEPP):

to provide a high quality educational experience to graduate engineers and scientists in the areas of engineering, science and public policy;

to foster applied research in the areas of engineering, science and public policy through the successful completion and dissemination of a research paper;

to develop viable, working linkages between engineering, science and fields of study within social sciences and the humanities (public policy, economics, society, and others); to produce graduates who will provide inspired leadership in the engineering, science and public policy areas within the public, private and NGO sectors.

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 the program in

12 months of study, beginning in September or January. Part-time students will normally be expected to complete the program in 3 years, one term (40 months).

McMaster students may receive advanced standing for up to two courses (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.

Curriculum

The curriculum has the following components:

Core courses that provide the content and methodological skills necessary for understanding and analyzing societal issues for which engineering and science can contribute to public policy solutions;

Focus elective courses that allow students to deepen their knowledge of a range of engineering, science and social science applications;

The completion of a substantive research paper on a problem at the interface of engineering, science and public policy

Research Project - Inquiry/Thesis in Engineering and Public Policy

Students select a research topic at the interface of engineering, science and public policy which is of interest to them and carries out inquiry-driven research; completes a formal research paper and prepares to publish their results for broad dissemination.

Candidates for the MEPP degree will follow a program consisting of the following and will need to complete 30 units to mee the degree requirements:

Required Courses

Candidates are required to take the following six half courses (18 units):

SEP 701 / Theory and Practice of Policy Analysis: Frameworks and Models

SEP 702 / Systems Engineering and Public Policy

SEP 709 / Emerging Issues, Technology and Public Policy

SEP 6EL3 / Leading Innovation OR

SEP 773 / Leadership for Innovation

SEP 778 / Circular Economy - Engineering Perspectives and Application

SEP 704 / Public Policy Research Project, Part 1

SEP 704 / Public Policy Research Project, Part 2

In addition students are required to take:

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SEP 771 / W Booth School of Engineering Practice and Technology Practitioner's Forum Part I (zero units) (full-time students only) SEP 771 / W Booth School of Engineering Practice and Technology Practitioner's Forum Part II (zero units) (full-time students only) Focus Elective Courses	
Three half-courses (9 units) are required for electives. Recommended electives include but are not limited to: SEP 6103 / Sustainable Manufacturing Processes	
SEP 6X03 / LIVABLE CITIES, THE BUILT AND NATURAL ENVIRONMENT, SEP 702 / Systems Engineering and Public Policy SEP 705 / Green Engineering, Sustainability and Public Policy SEP 706 / Energy and Public Policy SEP 708 / Special Topics in Engineering and Public Policy SEP 710 / International Governance and Environmental Sustainability SEP 778 / Circular Economy Engineering Perspectives and Application POL SCI 784 / Quantitative Political and Policy Analysis POL SCI 785 / Public Sector Management POL SCI 790 / The Politics of Economic Policy in Market Economies Cross-Disciplinary Elective Courses	Formatted: Font: inherit, No underline, Border: : (No
Candidates are required to take one half course (3 units) which should be selected from the following approved cross-disciplinary elective list. <u>SEP 770 / Total Sustainability Management</u> <u>SEP 790 / Emerging Technologies for Engineering Enterprise Innovation</u> <u>SEP 760 / Design Thinking</u> <u>SEP 777 / Cyber-Physical Systems and Industry 4.0</u> Additional Courses	
Up to two graduate engineering half courses from departments within the Faculty of Engineering Other courses in other departments and Faculties with approval of the Associate Director of the Graduate Studies in SEPT.	
CONTACT INFORMATION FOR THE RECOMMENDED CHANGE:	

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Name: Gail Krantzberg Email: krantz@mcmaster.ca 23, 2022

Date submitted: Nov.

If you have any questions regarding this form, please contact the Assistant Secretary, School of Graduate Studies, cbryce@mcmaster.ca

Extension: 22153

SGS/2013



McMaster School of graduate studies

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 <u>ALL</u> changes involving degree program requirements/procedures. <u>All</u> 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 SEPT NAME OF Systems and Technology – Digital Manufacturing PROGRAM and Systems and Technology – Automation & Smart Systems PLAN DEGREE M.Eng NATURE OF RECOMMENDATION (PLEASE CHECK APPROPRIATE BOX) Is this change a result of an IQAP review?
 Yes
 No CREATION OF NEW MILESTONE CHANGE IN CHANGE IN COURSE CHANGE IN ADMISSION COMPREHENSIVE х REQUIREMENTS REQUIREMENTS EXAMINATION PROCEDURE CHANGE IN THE DESCRIPTION OF A EXPLAIN: SECTION IN THE GRADUATE CALENDAR EXPLAIN: OTHER CHANGES

1

DESCRIBE THE EXISTING REQUIREMENT/PROCEDURE:

SEP 758 and 759 are not part of the MEST curriculum

PROVIDE A DETAILED DESCRIPTION OF THE RECOMMENDED CHANGE (Attach additional pages if space is not sufficient.) Add SEP 758 and SEP 759 as core courses to both the Digital Manufacturing Stream and Automation & Smart Systems stream in MEST 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?): SEP 758 / Prototyping Tools (Mobile Applications) and SEP 759 / Prototyping Web and Mobile Applications are two hands-on courses focused on developing the mobile applications. Mobile application is essential for Cyber-Physical-System and Industry 4.0. With the addition of these two courses into our curriculum, it will definitely enhance the following two PLOs: PLO #2. Apply system engineering tools and methods to monitor, analyze, and improve performance of the cyber-Physical systems based on data and models. PLO #3. Integrate electro-mechanical components, IT hardware and software infrastructure and software applications into a functioning cyber-physical system and control its operation. PROVIDE IMPLEMENTATION DATE: (Implementation date should be at the beginning of the academic year) September 1, 2023 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):

Systems and Technology, M.Eng.

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 t highly motivated students seeking advanced training in area of cyber-physical systems. Students design their own program of studies by selecting (with approval of their academic advisor) courses of interest to them in one of the following streams: (i) Automation and Smart Systems, (ii) Automative, and (iii) Digital Manufacturing. Application for admission to the program are 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 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 courses (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 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, and
- Digital Manufacturing
- Process Systems

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.

Students wishing to take an elective course outside of the recommended electives need to obtain a written permission from their graduate advisor.

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 professional development courses
 - 3 to 4 core courses
 - 0 to 1 technical elective courses
 - 1 cross-disciplinary elective

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 professional development courses
 - 4 to 6 core courses

- 0 to 2 technical elective courses
- 1 cross-disciplinary elective

All full-time students must register for the seminar series courses (attendance is mandatory), which are:

- SEP 771 / W Booth School of Engineering Practice and Technology Practitioner's Forum Part I (seminar series, full-time students only)
- SEP 771 / W Booth School of Engineering Practice and Technology Practitioner's Forum Part II (seminar series, full-time students only)

SEP 771 is a seminar series presented by guest speakers, invited by the School, of relevance to all M. Eng. programs at the School. All full-time students are required to take these courses. Course grades are either 'pass' or 'fail'. In order to pass the course, the student must attend a minimum of 80% of the seminars.

Students should note that not all courses are offered every year.

Required core courses for all streams:

• <u>SEP 769 / Cyber Physical Systems</u> **Professional Development Courses**

Professional Development courses, common to all streams in MEng S&T, are listed below:

- SEP 6TC3 / Technical Communications
- SEP 725 / Practical Project Management for Today's Business Environment
- SEP 773 / Leadership for Innovation
- SEP 760 / Design Thinking
- SEP 741 / Project Management for High Tech Projects

Courses- Automotive Stream

Core Courses

- SEP 6AE3 / Internal Combustion Engines
- SEP 6DV3 / Vehicle Dynamics
- SEP 711 / Electric Powertrain Components Design
- SEP 716 / Automotive Safety Design
- <u>SEP 722 / Electric Drive Vehicles / MECH ENG 760 / Electric Drive Vehicles</u>
- SEP 724 / Intelligent Transportation Systems
- SEP 734 / Issues in Vehicle Productions
- SEP 740 / Deep Learning
- SEP 742 / Visual Perception for Autonomous Vehicles

SEP 775 / Introduction to Computational Natural Language Processing 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 **Cross-Disciplinary Elective Course** Candidates are required to complete one half course (3 units) which should be selected from the following approved cross-disciplinary elective list. SEP 709 / Emerging Issues, Technology and Public Policy SEP 710 / International Governance and Environmental Sustainability SEP 6X03 / LIVABLE CITIES, THE BUILT AND NATURAL ENVIRONMENT SEP 793 / Entrepreneurial Opportunity Identification SEP 770 / Total Sustainability Management • SEP 729 / Manufacturing Systems **Courses- Automation and Smart Systems Core Courses** SEP 720 / Cloud Computing SEP 721 / Data Analytics, Machine Learning and AI on Cloud Platforms SEP 728 / Internet of Things (ioT) and industrial Internet of Things (ioT) • Systems Formatted: Font: inherit, 9 pt, No underline, Border: : (No border) SEP 758 / Software Design Tools and Methods SEP 759 / Prototyping Web and Mobile Applications. Formatted: Font: Arial, 12 pt 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 786 / Artificial Intelligence and Machine Learning Fundamentals / CHEM ENG 786 / Artificial Intelligence and Machine Learning Fundamentals SEP 787 / Machine Learning : Classification Models / CHEM ENG 787 / Machine Learning : Classification Models 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

Recor	nmended Technical Electives		
	EP 718 / Industrial Automation EP 723 / Industrial Components, Networks, and Interoperability / MECH ENG 61 / Industrial Components, Networks, and Interoperability EP 783 / Sensors and Actuators EP 6CS3 / Computer Security EP 6DA3 / Data Analytics and Big Data EP 6DM3 / Data Mining Disciplinary Elective Courses		
	are required to complete one half course (3 units) which should be selected from the following approved		
	plinary elective list.		
	EP 709 / Emerging Issues, Technology and Public Policy		
	EP 710 / International Governance and Environmental Sustainability		
• 5	EP 6X03 / LIVABLE CITIES, THE BUILT AND NATURAL ENVIRONMENT		
• 5	EP 793 / Entrepreneurial Opportunity Identification		
	EP 770 / Total Sustainability Management		
• 5	EP 729 / Manufacturing Systems		
Cour	ses- Digital Manufacturing		
Core (Courses		
• 5	EP 718 / Industrial Automation		
	EP 723 / Industrial Components, Networks, and Interoperability / MECH ENG		
	61 / Industrial Components, Networks, and Interoperability		
	EP 728 / Internet of Things (ioT) and industrial Internet of Things (ioT)		
	bystems		
	EP 735 / ADDITIVE MANUFACTURING / MECH ENG 735 / Additive		
	Anufacturing		
• 5	EP 738 / Artificial Intelligence Methods in Advanced Manufacturing		
	EP 740 / Deep Learning		
	SEP 758 / Software Design Tools and Methods		
	EP 759 / Prototyping Web and Mobile Applications		
	EP 780 / Advanced Robotics and Automation		
	EP 783 / Sensors and Actuators		
	EP 791 / Augmented Reality, Virtual Reality and Mixed Reality		
	mended Technical Electives		

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Recommended Technical Electives

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- SEP 6FM3 / Computer Integrated Manufacturing (CIM) and Flexible Manufacturing
- SEP 742 / Visual Perception for Autonomous Vehicles
- <u>SEP 767 / Multivariate Statistical Methods for Big Data Analysis and Process</u> <u>Improvement / CHEM ENG 765 / Multivariate Statistical Methods for Big Data</u> <u>Analysis and Process Improvement</u>
- SEP 775 / Introduction to Computational Natural Language Processing
- SEP 786 / Artificial Intelligence and Machine Learning Fundamentals / CHEM ENG 786 / Artificial Intelligence and Machine Learning Fundamentals
- <u>SEP 787 / Machine Learning : Classification Models / CHEM ENG 787 /</u> <u>Machine Learning : Classification Models</u>

Cross-Disciplinary Elective Courses

Candidates are required to complete one half course (3 units) which should be selected from the following approved cross-disciplinary elective list.

- SEP 709 / Emerging Issues, Technology and Public Policy
- <u>SEP 710 / International Governance and Environmental Sustainability</u>
- SEP 6X03 / LIVABLE CITIES, THE BUILT AND NATURAL ENVIRONMENT
- <u>SEP 793 / Entrepreneurial Opportunity Identification</u>
- SEP 770 / Total Sustainability Management
- SEP 729 / Manufacturing Systems

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
- <u>SEP 767 / Multivariate Statistical Methods for Big Data Analysis and Process</u>
 <u>Improvement</u>
- SEP 718 / Industrial Automation
- SEP 783 / Sensors and Actuators
- SEP 739 / Distributed Computing for Process Control
- SEP 754 / Process Design and Integration for Minimal Environmental Impact
- SEP 740 / Deep Learning

Recommended Technical Electives

- SEP 730 / Reliability and Risk Management
- CHEM ENG 773 / Advanced Concepts of Polymer Extrusion
- CHEM ENG 740 / Advanced PSE Tools and Methods

• <u>SEP 6IT3 / Internet Technologies and Databases</u> Cross-Disciplinary Elective Courses

Candidates are required to complete one half course (3 units) which should be selected from the following approved cross-disciplinary elective list.

- SEP 709 / Emerging Issues, Technology and Public Policy
- SEP 710 / International Governance and Environmental Sustainability
- SEP 6X03 / LIVABLE CITIES, THE BUILT AND NATURAL ENVIRONMENT
- <u>SEP 793 / Entrepreneurial Opportunity Identification</u>
- SEP 770 / Total Sustainability Management
- <u>SEP 729 / Manufacturing Systems</u>
- Students can take other elective courses with permission of their program lead.

Moreover, a maximum of two courses can be selected from the following list

Electrical Engineering

- ECE 710 / Engineering Optimization
- <u>ECE 732 / Non-linear Control Systems</u>
- 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

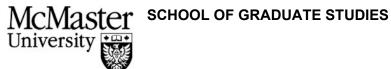
- CAS 767 / Information Privacy and Security
- <u>CAS 771 / Introduction to Big Data Systems and Applications</u>

CONTACT INFORMATION FOR THE RECOMMENDED CHANGE:

Name:	Email:	Extension:	Date submitted:
INAILIE.		EXICISION.	Date submitted.

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

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		W Booth	n SEPT					
NAME OF PROGRAM a PLAN	PROGRAM and Systems and Technology – All streams							
DEGREE			M.Eng					
	NA	FURE OF RE		END/	ATION (PLEASE CHE	CK	APPROPRIATE BOX)	
Is this char	nge a	a result of a	n IQAP ı	revie	w? 🗆 Yes 🗆 No			
CREATION	OF N	EW MILESTC	NE 🗆					
CHANGE IN ADMISSION REQUIREMENTS			OMP	GE IN REHENSIVE NATION PROCEDURE		CHANGE IN COURSE REQUIREMENTS	x	
	CHANGE IN THE DESCRIPTION OF A EXPLAIN: <u>SECTION</u> IN THE GRADUATE CALENDAR				•			
OTHER CHANGES		EXPLAIN:						

DESCRIBE THE EXISTING REQUIREMENT/PROCEDURE:

SEP 729: Manufacturing Systems is a cross-disciplinary course in MEST. SEP 705 is not a cross-disciplinary offering in MEST.

PROVIDE A DETAILED DESCRIPTION OF THE RECOMMENDED CHANGE (Attach additional pages if space is not sufficient.)

Remove SEP 729 as a cross-disciplinary course in MEST. Add SEP 705 as a cross-disciplinary course in MEST

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?):

SEP 729 Manufacturing Systems is a core course in MEME. If we have this course as cross-disciplinary for MEST, it might have potential overlap issue between MEME and MEST. Then, this course is not suitable to be offered as a cross-disciplinary for MEST.

Instead, we propose to offer SEP-705 as a cross-disciplinary course in MEST. SEP-705 Green Engineering, Sustainability and Public Policy as a core course in MEPP, is very suitable as a cross-disciplinary course in MEST to reinforce the T-shaped learning and skills.

PROVIDE IMPLEMENTATION DATE: (Implementation date should be at the beginning of the academic year)

September 1, 2023

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):

Systems and Technology, M.Eng.

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 t highly motivated students seeking advanced training in area of cyber-physical systems. Students design their own program of studies by selecting (with approval of their academic advisor) courses of interest to them in one of the following streams: (i) Automation and Smart Systems, (ii) Automotive, and (iii) Digital Manufacturing. Application for admission to the program are 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 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 courses (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 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, and
- Digital Manufacturing
- Process Systems

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.

Students wishing to take an elective course outside of the recommended electives need to obtain a written permission from their graduate advisor.

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 professional development courses
 - 3 to 4 core courses
 - 0 to 1 technical elective courses
 - 1 cross-disciplinary elective

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)
 - o 1 required course
 - 2 professional development courses
 - 4 to 6 core courses

- 0 to 2 technical elective courses
- 1 cross-disciplinary elective

All full-time students must register for the seminar series courses (attendance is mandatory), which are:

- <u>SEP 771 / W Booth School of Engineering Practice and Technology</u> <u>Practitioner's Forum Part I (seminar series, full-time students only)</u>
- <u>SEP 771 / W Booth School of Engineering Practice and Technology</u> <u>Practitioner's Forum Part II (seminar series, full-time students only)</u>

SEP 771 is a seminar series presented by guest speakers, invited by the School, of relevance to all M. Eng. programs at the School. All full-time students are required to take these courses. Course grades are either 'pass' or 'fail'. In order to pass the course, the student must attend a minimum of 80% of the seminars.

Students should note that not all courses are offered every year.

Required core courses for all streams:

<u>SEP 769 / Cyber Physical Systems</u> Professional Development Courses

Professional Development courses, common to all streams in MEng S&T, are listed below:

- SEP 6TC3 / Technical Communications
- SEP 725 / Practical Project Management for Today's Business Environment
- SEP 773 / Leadership for Innovation
- SEP 760 / Design Thinking
- SEP 741 / Project Management for High Tech Projects

Courses- Automotive Stream

Core Courses

- SEP 6AE3 / Internal Combustion Engines
- SEP 6DV3 / Vehicle Dynamics
- <u>SEP 711 / Electric Powertrain Components Design</u>
- SEP 716 / Automotive Safety Design
- <u>SEP 722 / Electric Drive Vehicles / MECH ENG 760 / Electric Drive Vehicles</u>
- <u>SEP 724 / Intelligent Transportation Systems</u>
- <u>SEP 734 / Issues in Vehicle Productions</u>
- SEP 740 / Deep Learning
- SEP 742 / Visual Perception for Autonomous Vehicles

SEP 775 / Introduction to Computational Natural Language Processing
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

Cross-Disciplinary Elective Course

Candidates are required to complete one half course (3 units) which should be selected from the following approved cross-disciplinary elective list.

- SEP 705 / Green Engineering, Sustainability and Public Policy
- SEP 709 / Emerging Issues, Technology and Public Policy
- SEP 710 / International Governance and Environmental Sustainability
- SEP 6X03 / LIVABLE CITIES, THE BUILT AND NATURAL ENVIRONMENT
- <u>SEP 793 / Entrepreneurial Opportunity Identification</u>
- SEP 770 / Total Sustainability Management

Courses- Automation and Smart Systems

Core Courses

- SEP 720 / Cloud Computing
- SEP 721 / Data Analytics, Machine Learning and AI on Cloud Platforms
- <u>SEP 728 / Internet of Things (ioT) and industrial Internet of Things (ioT)</u> <u>Systems</u>
- 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
- <u>SEP 786 / Artificial Intelligence and Machine Learning Fundamentals / CHEM</u> <u>ENG 786 / Artificial Intelligence and Machine Learning Fundamentals</u>
- SEP 787 / Machine Learning : Classification Models / CHEM ENG 787 / Machine Learning : Classification Models
- 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

Recommended Technical Electives

- SEP 718 / Industrial Automation
- <u>SEP 723 / Industrial Components, Networks, and Interoperability / MECH ENG</u> 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

Cross-Disciplinary Elective Courses

Candidates are required to complete one half course (3 units) which should be selected from the following approved cross-disciplinary elective list.

- SEP 709 / Emerging Issues, Technology and Public Policy
- SEP 710 / International Governance and Environmental Sustainability
- SEP 6X03 / LIVABLE CITIES, THE BUILT AND NATURAL ENVIRONMENT
- SEP 793 / Entrepreneurial Opportunity Identification
- SEP 770 / Total Sustainability Management

Courses- Digital Manufacturing

Core Courses

- SEP 718 / Industrial Automation
- <u>SEP 723 / Industrial Components, Networks, and Interoperability / MECH ENG</u> 761 / Industrial Components, Networks, and Interoperability
- <u>SEP 728 / Internet of Things (ioT) and industrial Internet of Things (ioT)</u> <u>Systems</u>
- SEP 735 / ADDITIVE MANUFACTURING / MECH ENG 735 / Additive Manufacturing
- SEP 738 / Artificial Intelligence Methods in Advanced Manufacturing
- SEP 740 / Deep Learning
- SEP 780 / Advanced Robotics and Automation
- SEP 783 / Sensors and Actuators
- SEP 791 / Augmented Reality, Virtual Reality and Mixed Reality

Recommended Technical Electives

- <u>SEP 6FM3 / Computer Integrated Manufacturing (CIM) and Flexible</u> <u>Manufacturing</u>
- 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

- <u>SEP 786 / Artificial Intelligence and Machine Learning Fundamentals / CHEM</u> ENG 786 / Artificial Intelligence and Machine Learning Fundamentals
- <u>SEP 787 / Machine Learning : Classification Models / CHEM ENG 787 /</u> Machine Learning : Classification Models

Cross-Disciplinary Elective Courses

Candidates are required to complete one half course (3 units) which should be selected from the following approved cross-disciplinary elective list.

- SEP 709 / Emerging Issues, Technology and Public Policy
- SEP 710 / International Governance and Environmental Sustainability
- SEP 6X03 / LIVABLE CITIES, THE BUILT AND NATURAL ENVIRONMENT
- SEP 793 / Entrepreneurial Opportunity Identification
- SEP 770 / Total Sustainability Management

Courses - Process Systems Stream

Core Courses

- <u>SEP 750 / Model Predictive Control Design and Implementation</u>
- <u>SEP 751 / Process Design and Control for Operability CHEM ENG 764 /</u> <u>Process Control and Design for Operability</u>
- SEP 752 / Systems Modeling and Optimization
- <u>SEP 767 / Multivariate Statistical Methods for Big Data Analysis and Process</u>
 <u>Improvement</u>
- SEP 718 / Industrial Automation
- SEP 783 / Sensors and Actuators
- SEP 739 / Distributed Computing for Process Control
- SEP 754 / Process Design and Integration for Minimal Environmental Impact
- SEP 740 / Deep Learning

Recommended Technical Electives

- SEP 730 / Reliability and Risk Management
- CHEM ENG 773 / Advanced Concepts of Polymer Extrusion
- CHEM ENG 740 / Advanced PSE Tools and Methods
- <u>SEP 6IT3 / Internet Technologies and Databases</u>

Cross-Disciplinary Elective Courses

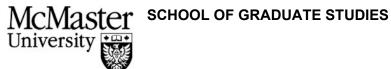
Candidates are required to complete one half course (3 units) which should be selected from the following approved cross-disciplinary elective list.

• SEP 709 / Emerging Issues, Technology and Public Policy

• 5	SEP 710 / International Govern SEP 6X03 / LIVABLE CITIES, ⁻ SEP 793 / Entrepreneurial Opp	THE BUILT AND NATURAL		
	<u>SEP 770 / Total Sustainability Management</u>			
	tudents can take other elective courses wi		-	
	eover, a maximum o		nbe	
selec	cted from the follow	ing list		
Electri	ical Engineering			
_	ECE 710 / Engineering Optimiz			
	ECE 732 / Non-linear Control S			
	<u>ECE 736 / 3D Image Processin</u>		t Mathada	
	<u>ECE 744 / System-on-a-Chip (Section 10 Anno</u>		<u>t i - Methods</u>	
	are Engineering	<u>icennology</u>		
	SFWR ENG 6HC3 / The Huma uter Science	n Computer Interface		
• (COMP SCI 6F03 / Distributed (Computer Systems		
• (COMP SCI 6TE3 / Continuous	<u>Optimization</u>		
Comp	uting and Software			
• (CAS 767 / Information Privacy	and Security		
• (CAS 771 / Introduction to Big D	ata Systems and Application	ons	
CONTACI	I INFORMATION FOR THE RECOMME	NDED CHANGE:		
Name:	Email:	Extension:	Date submitted:	

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

IMPORTANT: 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		W Booth	1 SEPT					
NAME OF PROGRAM a PLAN	PROGRAM and Systems and Technology – Digital Manufacturing							
DEGREE			M.Eng					
	NAT	FURE OF RE		END	ATION (PLEASE CHE	CK /	APPROPRIATE BOX)	
Is this char	Is this change a result of an IQAP review? □ Yes □ No							
CREATION	OF NI	EW MILESTO	NE 🗆					
CHANGE IN ADMISSION REQUIREMENTS			OMP	GE IN REHENSIVE NATION PROCEDURE		CHANGE IN COURSE REQUIREMENTS	x	
	CHANGE IN THE DESCRIPTION OF A EXPLAIN: <u>SECTION</u> IN THE GRADUATE CALENDAR				•			
OTHER CHANGES		EXPLAIN:		<u>.</u>				

DESCRIBE THE EXISTING REQUIREMENT/PROCEDURE:

SEP 738:Artificial Intelligence Methods in Advanced Manufacturing is a core course in MEST – Digital Manufacturing stream

PROVIDE A DETAILED DESCRIPTION OF THE RECOMMENDED CHANGE (Attach additional pages if space is not sufficient.)

Remove SEP 738 as a core course from the MEST – Digital Manufacturing stream

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?):

By removing this course from the core course list of DM stream in MEST program, it will help further distinguish MEME program and MEST program.

PROVIDE IMPLEMENTATION DATE: (Implementation date should be at the beginning of the academic year)

September 1, 2023

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):

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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.

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McMaster students may receive advanced standing for up to two courses (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.

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Curriculum

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- Automation and Smart Systems,
- Automotive, and
- Digital Manufacturing
- Process Systems

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.

Students wishing to take an elective course outside of the recommended electives need to obtain a written permission from their graduate advisor.

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)
 - o 1 required course
 - 2 professional development courses
 - 3 to 4 core courses
 - 0 to 1 technical elective courses
 - o 1 cross-disciplinary elective

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

- o SEP 799 / M.Eng. Project in Systems and Technology Part 2
- 10 courses (30 units)
 - 1 required course
 - 2 professional development courses
 - 4 to 6 core courses
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 - 1 cross-disciplinary elective

All full-time students must register for the seminar series courses (attendance is mandatory), which are:

• <u>SEP 771 / W Booth School of Engineering Practice and Technology</u> <u>Practitioner's Forum Part I (seminar series, full-time students only)</u> • <u>SEP 771 / W Booth School of Engineering Practice and Technology</u> <u>Practitioner's Forum Part II (seminar series, full-time students only)</u>

SEP 771 is a seminar series presented by guest speakers, invited by the School, of relevance to all M. Eng. programs at the School. All full-time students are required to take these courses. Course grades are either 'pass' or 'fail'. In order to pass the course, the student must attend a minimum of 80% of the seminars.

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 6TC3 / Technical Communications
- SEP 725 / Practical Project Management for Today's Business Environment
- <u>SEP 773 / Leadership for Innovation</u>
- SEP 760 / Design Thinking
- SEP 741 / Project Management for High Tech Projects

Courses- Automotive Stream

Core Courses

- SEP 6AE3 / Internal Combustion Engines
- SEP 6DV3 / Vehicle Dynamics
- 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
- <u>SEP 734 / Issues in Vehicle Productions</u>
- SEP 740 / Deep Learning
- SEP 742 / Visual Perception for Autonomous Vehicles
- SEP 775 / Introduction to Computational Natural Language Processing

Recommended Technical Electives

- MECH ENG 6Z03 / CAD/CAM/CAE
- SEP 780 / Advanced Robotics and Automation
- <u>SEP 783 / Sensors and Actuators</u>

• <u>SEP 791 / Augmented Reality, Virtual Reality and Mixed Reality</u> Cross-Disciplinary Elective Course

Candidates are required to complete one half course (3 units) which should be selected from the following approved cross-disciplinary elective list.

- SEP 709 / Emerging Issues, Technology and Public Policy
- <u>SEP 710 / International Governance and Environmental Sustainability</u>
- SEP 6X03 / LIVABLE CITIES, THE BUILT AND NATURAL ENVIRONMENT
- SEP 793 / Entrepreneurial Opportunity Identification
- SEP 770 / Total Sustainability Management
- SEP 729 / Manufacturing Systems

Courses- Automation and Smart Systems

Core Courses

- SEP 720 / Cloud Computing
- SEP 721 / Data Analytics, Machine Learning and AI on Cloud Platforms
- <u>SEP 728 / Internet of Things (ioT) and industrial Internet of Things (ioT)</u> <u>Systems</u>
- 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
- <u>SEP 786 / Artificial Intelligence and Machine Learning Fundamentals / CHEM</u> ENG 786 / Artificial Intelligence and Machine Learning Fundamentals
- <u>SEP 787 / Machine Learning : Classification Models / CHEM ENG 787 /</u> Machine Learning : Classification Models
- 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

Recommended Technical Electives

- SEP 718 / Industrial Automation
- <u>SEP 723 / Industrial Components, Networks, and Interoperability / MECH ENG</u> 761 / Industrial Components, Networks, and Interoperability
- SEP 783 / Sensors and Actuators
- <u>SEP 6CS3 / Computer Security</u>
- SEP 6DA3 / Data Analytics and Big Data
- SEP 6DM3 / Data Mining

Cross-Disciplinary Elective Courses

Candidates are required to complete one half course (3 units) which should be selected from the following approved cross-disciplinary elective list.

- SEP 709 / Emerging Issues, Technology and Public Policy
- <u>SEP 710 / International Governance and Environmental Sustainability</u>
- SEP 6X03 / LIVABLE CITIES, THE BUILT AND NATURAL ENVIRONMENT
- SEP 793 / Entrepreneurial Opportunity Identification
- SEP 770 / Total Sustainability Management
- SEP 729 / Manufacturing Systems

Courses- Digital Manufacturing

Core Courses

- SEP 718 / Industrial Automation
- <u>SEP 723 / Industrial Components, Networks, and Interoperability / MECH ENG</u> 761 / Industrial Components, Networks, and Interoperability
- <u>SEP 728 / Internet of Things (ioT) and industrial Internet of Things (ioT)</u> <u>Systems</u>
- SEP 735 / ADDITIVE MANUFACTURING / MECH ENG 735 / Additive Manufacturing
- <u>SEP 738 / Artificial Intelligence Methods in Advanced Manufacturing</u>
- SEP 740 / Deep Learning
- SEP 780 / Advanced Robotics and Automation
- SEP 783 / Sensors and Actuators
- SEP 791 / Augmented Reality, Virtual Reality and Mixed Reality
- **Recommended Technical Electives**
 - <u>SEP 6FM3 / Computer Integrated Manufacturing (CIM) and Flexible</u> <u>Manufacturing</u>
 - 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
 - <u>SEP 786 / Artificial Intelligence and Machine Learning Fundamentals / CHEM</u> <u>ENG 786 / Artificial Intelligence and Machine Learning Fundamentals</u>
 - <u>SEP 787 / Machine Learning : Classification Models / CHEM ENG 787 /</u> Machine Learning : Classification Models

Cross-Disciplinary Elective Courses

Candidates are required to complete one half course (3 units) which should be selected from the following approved cross-disciplinary elective list.

- SEP 709 / Emerging Issues, Technology and Public Policy
- SEP 710 / International Governance and Environmental Sustainability
- SEP 6X03 / LIVABLE CITIES, THE BUILT AND NATURAL ENVIRONMENT
- <u>SEP 793 / Entrepreneurial Opportunity Identification</u>
- SEP 770 / Total Sustainability Management
- <u>SEP 729 / Manufacturing Systems</u>

Courses - Process Systems Stream

Core Courses

- SEP 750 / Model Predictive Control Design and Implementation
- <u>SEP 751 / Process Design and Control for Operability CHEM ENG 764 /</u> <u>Process Control and Design for Operability</u>
- 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
- <u>SEP 739 / Distributed Computing for Process Control</u>
- SEP 754 / Process Design and Integration for Minimal Environmental Impact
- SEP 740 / Deep Learning

Recommended Technical Electives

- SEP 730 / Reliability and Risk Management
- <u>CHEM ENG 773 / Advanced Concepts of Polymer Extrusion</u>
- <u>CHEM ENG 740 / Advanced PSE Tools and Methods</u>
- SEP 6IT3 / Internet Technologies and Databases

Cross-Disciplinary Elective Courses

Candidates are required to complete one half course (3 units) which should be selected from the following approved cross-disciplinary elective list.

- SEP 709 / Emerging Issues, Technology and Public Policy
- SEP 710 / International Governance and Environmental Sustainability
- SEP 6X03 / LIVABLE CITIES, THE BUILT AND NATURAL ENVIRONMENT
- SEP 793 / Entrepreneurial Opportunity Identification
- SEP 770 / Total Sustainability Management
- SEP 729 / Manufacturing Systems

• Students can take other elective courses with permission of their program lea Moreover, a maximum of two courses c selected from the following list	
Electrical Engineering	
 <u>ECE 710 / Engineering Optimization</u> <u>ECE 732 / Non-linear Control Systems</u> <u>ECE 736 / 3D Image Processing and Computer Vision</u> <u>ECE 744 / System-on-a-Chip (SOC) Design and Test: P</u> <u>ECE 778 / Introduction to Nanotechnology</u> Software Engineering 	Part I - Methods
SFWR ENG 6HC3 / The Human Computer Interface Computer Science	
 <u>COMP SCI 6F03 / Distributed Computer Systems</u> <u>COMP SCI 6TE3 / Continuous Optimization</u> Computing and Software 	
 <u>CAS 767 / Information Privacy and Security</u> <u>CAS 771 / Introduction to Big Data Systems and Applica</u> 	ations
CONTACT INFORMATION FOR THE RECOMMENDED CHANGE:	
Name: Email: Extension:	Date submitted:

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

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	Civil Engineering
Name of Program and Plan	GENPH/CIVENGPHD
Degree	Doctor of Philosophy

Nature of Recommendation (please check appropriate box)			
Is this change a result of an IQAP review?	○ Yes		
Creation of new milestone			
Change in admission requirements			
Change in comprehensive examination			
Change in course requirements	Change in course requirements		
Change in the description of a section in the graduate calendar	Explain:		
○ Other changes	Explain:		

Describe the existing requirement/procedure Provide a detailed description of the recommended change (Attach additional pages if space is not sufficient.)	Currently, the minimum course requirements for our PhD students are: the completion of 4-half courses (3 units each) in addition to the course requirements for a M.A.Sc. degree (also 4 half courses at 3 units each). Students entering the PhD program directly from a bachelor's degree or via transfer from the M.A.Sc. degree must fulfil the M.A.Sc. course requirements in addition to the PhD course requirements (8 half courses total at 3 units each). The minimum course requirements for the PhD program in Civil Engineering are two half-courses at the 700 level beyond the master's degree. For students who have not completed a master's degree, the minimum course requirements are four half-courses, at the 700 level, beyond the requirements of the bachelor's degree. At least half of the required courses must be listed or cross-listed in the calendar under the degree program. The PhD thesis supervisor and/or the supervisory committee can require the student to take additional course(s) if necessary for the student's research or to address an identified gap in the student's background.
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 want to provide our students/faculty with some flexibility on when and how students complete their coursework. We also hope this allows students to progress through their degree in a more timely manner.
Provide implementation date: (implementation date should be at the beginning of the academic year)	Sept 1 st 2023 (i.e. for the 2023/2024 academic year)
Are there any other details of the recommended change that the curriculum and policy committee should be aware of? If yes, 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):	Please see attached for tracked changes version of calendar entry
Contact information for the recommended Name: Peijun Guo Email: Image: Peijun Guo Email: Image: Peijun Guo guop@mcmaster.com	Extension: 27903 Date submitted: Mar. 22, 2023

PhD Candidates in Civil Engineering are required to successfully complete the equivalent of at least two half-courses at the 700 level beyond the master's degree. For students who have not completed a master's degree, the minimum course requirements are four half-courses, at the 700 level, beyond the requirements of the bachelor's degree. At least half of the required courses must be listed or cross-listed in the calendar under the degree program. The PhD thesis supervisor and/or the supervisory committee can require the student to take additional course(s) if necessary for the student's research or to address an identified gap in the student's background. In addition to the above course requirements, all full-time Ph. D. candidates must attend and participate in the Department of Civil Engineering Graduate Student Seminar Day each year, for the first 12 terms (48 months) of study.



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	Civil Engineering
Name of Program and Plan	GENPH/CIVENGPHD
Degree	Doctor of Philosophy

Nature of Recommendation (please check appropriate box)			
Is this change a result of an IQAP review?	⊂ Yes		
ි Creation of new milestone			
ි Change in admission requirements			
Change in comprehensive examination			
ි Change in course requirements	C Change in course requirements		
Change in the description of a section in the graduate calendar	Explain:		
ි Other changes	Explain:		

Describe the existing requirement/procedure	Currently our comprehensive exam consists of two parts. Part A is to test the candidate's knowledge, both breadth and depth, of undergraduate material in the major field of study, with graduate level understanding and the ability to think independently. This portion is to be completed within 8 - 10 months, but not exceeding 12 months, of admission to the doctoral program. Part B is to test the candidate's competence and ability to conduct research in a chosen specialty. This part must be completed within 12-18 months of admission to the doctoral program, subject to passing Part A. Both parts of this examination include a written and oral portion.
Provide a detailed description of the recommended change (Attach additional pages if space is not sufficient.)	The Ph.D. Comprehensive Examination will consist of a single examination. This examination will test the candidate's acquisition of knowledge and maturity of approach to problems in the major field of study, as well as in appropriately chosen cognate subject areas. The examination will normally take place at about 10 months, but can be extended to 15 months, of the admission date to the doctoral program. The comprehensive examination includes a written and oral portion. For further details, please see the attached document.
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 complex comprehensive examination contributed to having a large number of overtime PhD students. It also imposed a large workload on administrative staff and faculty, increased anxiety of PhD students, without tangible and measurable benefit. The proposed change is aimed at mitigating such problems.
Provide implementation date: (implementation date should be at the beginning of the academic year)	For PhD students starting Sept 2023 and onwards
Are there any other details of the recommended change that the curriculum and policy committee should be aware of? If yes, 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):	September 2023 and onwards: The Ph.D. Comprehensive Examination will consist of only one exam. It will test the candidate's acquisition of knowledge and maturity of approach to problems in the major field of study, as well as in appropriately chosen cognate subject areas. The examination will normally take place at around 10 months, but can be extended to 15 months, of the admission date to the doctoral program. The comprehensive examination includes a written and oral portion. For further details, please see the Department of Civil Engineering Graduate Student Handbook.
Contact information for the recommended of Name: Peijun Guo Name: Peijun Guo Email: Image: State of the second sec	Extension: 27903 Date submitted: Mar 16, 2023

DEPARTMENT OF CIVIL ENGINEERING

McMaster University

Hamilton, Ontario

Ph.D. COMPREHENSIVE EXAMINATION REGULATIONS

1. Purpose

The purpose of this examination is to test the candidate's acquisition of knowledge and maturity of approach to problems in the major field of study, as well as in appropriately chosen cognate subject areas. It is intended that this examination will also be used to test the candidate's competence and ability to conduct research in the chosen speciality. Successful completion of the comprehensive examination is a requirement for the candidate to continue in the Ph.D. program.

2. Membership of the Ph.D. Examination Committee

The Ph.D. Examination Committee is the same as the supervisory committee. A non-voting Committee Chair will be appointed by the Department.

In case of a re-examination the provision of 5(c) shall also apply.

3. Chair of the Ph.D. Examination Committee

The position of the Examination Committee Chair shall be appointed by the Department. The candidate's supervisor(s), the Associate Chair of Graduate Studies or the Department Chair shall in no instance be the Ph.D. Examination Committee Chair.

4. Time and Format of the Examination

Time: The comprehensive examination will normally take place within 12 months, but may be extended to 15 months, of the admission date to the doctoral program. If an examination date has not been set within the 15-month period, the Department Chair will set the date of the examination. There shall be three sittings of examinations in February, June and October each year. Students who begin in May and September shall take the exam in February and June of the following calendar year, while students who begin in January shall take the exam in October of the same calendar year.

Format: The Comprehensive Examination will consist of a research proposal and an oral examination of less than three hours. The candidate is required to submit a written proposal on their PhD research topic that must be approved by their supervisor(s). The proposal, which should be in 12 point font and double-spaced, can be up to 20 pages (excluding References and Appendices) and must be submitted to the examination committee at least two weeks prior to the date of the examination. It should identify the research needs and knowledge gaps, objectives of the research, proposed methodology, anticipated outcomes, progress made thus far, along with a proposed timeframe.

During the oral examination, the candidates should provide a brief presentation (maximum of 15 minutes) on their research proposal and answer questions of the Examination Committee. The questions will be primarily on the research proposal. However, the scope of the oral part may extend to examining the depth of knowledge in the candidate's discipline area related to the proposed research and possible deficiencies in the candidate's academic background. This part of the examination shall be conducted in two rounds consisting of 10-15 minutes of questions from each of the three Examination Committee members.

5. Outcome of the Examination

There shall only be three possible outcomes of the first Ph.D. Comprehensive Examination. The committee shall render one of the following decisions:

- a. When there are two or more passing votes then the Committee rules that the candidate passed the examination. The Committee assesses the performance with a designation of 'Pass'.
- b. When there are two or more passing votes, then the committee rules that the candidate passed the examination, but may add conditions to this pass to correct any weaknesses detected (e.g., take a specific course).
- c. When there are two or more "Unsatisfactory" votes there shall be a re-examination, which shall be at <u>the</u> <u>next sitting</u> of the Examinations. In the event of a re-examination, the candidate may, but not mandatory, submit a revised research proposal, unless the research scope is changed.

There shall only be three possible outcomes of a re-examination. The committee shall render one of the following decisions:

- d. When there are two or more positive votes then the Committee rules that the candidate passed the examination. The Committee assesses the performance with a designation of 'Pass'.
- e. When there are two or more positive votes, then the committee rules that the candidate passed the examination, but may add conditions to this pass to correct any weaknesses detected (e.g., take a specific course).
- f. When there are two or more "Unsatisfactory" votes the candidate will fail. The Committee assesses the performance with a designation of 'Fail'. The candidate will be required to withdraw from the Ph.D. programme for a "Fail" in the re-examination.

6. Notification of Outcome

The Chair of the Ph.D. Examination Committee shall verbally inform the candidate of the Committee's decision based on one of the three possible outcomes above. That decision shall be conveyed to the candidate immediately after the Committee has concluded discussion.

Formal written notification of the Committee ruling will be provided by the Associate Chair of Graduate Studies upon receipt of the Committee report.



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То

Gilmour Hall, Room 212 1280 Main Street West Hamilton, ON L8S 4L8

From : Christina Bryce Assistant Graduate Secretary

Graduate Council

At its meetings on March 15th 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:

- i. Public Health
 - i. Change to Elective List

For Information of Graduate Council:

- ii. Biomedical Engineering*
 - i. New Cross-listed Course
 - 1. 713 Bio-Inspired Engineering

iii. Health Management**

i. Change to Requisites

- 1. 705 Evaluating Sources of Evidence for Management and Evaluation
- 2. 706 Strategic Health Management Foundations
- 3. 707 Accounting & Financial Foundations for Healthcare Management
- 4. 708 Leadership in Health Organizations
- iv. Physiotherapy

i. Change to Requisite

1. 702 Advanced Orthopedic Assessment and Treatment

*Also approved by the Faculty of Engineering

**Also approved by the Faculty of Business.



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	Name of Program and Plan	Degree
HEI	Master of Public Health	MPH
Nature of Recommendation (please check appropriate box)		
Is this change a result of an IQAP reviev	v? Yes 🖌 No	
Creation of new milestone		
Change in admission requiremen	ts	
Change in comprehensive examination		
Change in course requirements		
Change in the description of a section in the graduate calendar – explain:		
• Other changes – explain:		
We seek to clarify the course list and the language (on the below Grad Calendar web page) re: the accepted elective courses that MPH students can take to fulfill the elective requirement		
https://academiccalendars.romcmaster.ca/preview_program.php? catoid=46&poid=23920&returnto=9236		

Describe the existing requirement/procedure:

Currently only PUBHLTH courses are listed as electives, but this separate list should include some additional elective course options from across campus; a note should be added that indicates that any other program approved elective may be taken to fulfill elective requirements

Provide a detailed description of the recommended change (Attach additional pages if space is not sufficient.)

Please see word document attached which outlines the proposed layout, added list of possible electives, and added 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?):

This change will clarify MPH elective requirements for students and for SGS when clearing students to graduate

Provide implementation date: (implementation date should be at the beginning of the academic year)

1 Sept 2023

Are there any other details of the recommended change that the curriculum and policy committee should be aware of? If yes, 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):

See attached document

Contact information for the recommended change:

Name: Emma Apatu

Email: apatue@mcmaster.ca

Ext:

Date Submitted: Feb 14, 2023

Courses

Required Core Courses

- PUBHLTH 700 / Foundations of Population and Public Health Practice
- PUBHLTH 701 / Population and Public Health Epidemiology
- HTHRSM 702 / Introduction to Biostatistics
- PUBHLTH 703 / Population and Public Health Policy
- PUBHLTH 704 / Population and Public Health Research Methods
- PUBHLTH 708 / Leadership and Applied Public Health
- PUBHLTH 712 / Professional Development Studio I
- PUBHLTH 713 / Professional Development Studio II

Elective Courses*

- PUBHLTH 706 / Introduction to Health and Public Health Economics
- PUBHLTH 707 / MPH Special Topics
- PUBHLTH 709 / Theories of Behaviour
- PUBHLTH 710 / Introduction to Knowledge Synthesis and Guidelines
- PUBHLTH 711 / Program Evaluation in Public Health
- PUBHLTH 714 / Communicable Disease Prevention, Epidemiology and Control (CDPEC)
- PUBHLTH 715 / HTHRSM 707 / Advanced Topics in Epidemiology
- PUBHLTH 716 / HTHRSM 726 / The Science and Practice of Knowledge Translation: Foundations
- PUBHLTH 717 / The Fundamentals of Environmental Health and the Health Impacts of Global Climate Change
- HTHRSM 727 / Theory & Practice of Measurement
- HTHRSM 753 / Regression Analysis
- HTHRSM 775 / Healthcare Guidelines Development Methods
- HTHRSM 743 /Systematic Review Methods
- HLTHAGE 719 / Health Equity: Interdisciplinary Perspectives
- BUSINESS C725 / Managing Communications in Health Care
- BUSINESS C740 / Interdisciplinary Perspectives on Health Care Marketing
- BUSINESS C741 / Health Care Marketing for Managers
- BUSINESS C750 / Ethical and Legal Issues in Health Care

* Additional electives may be approved by the program to fulfill the elective requirement



Recommendation for change in graduate curriculum – for change(s) involving degree progran
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 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	Name of Program and Plan	Degree
English & Cultural Studies	English PhD	ENGLPHD
Nature of Reco	mmendation (please check appr	ropriate box)
Is this change a result of an IQAP review	w? Yes 🖌 No	
Creation of new milestone		
Change in admission requiremen	ts	
Change in comprehensive examined	nation	
Change in course requirements		
• Change in the description of a se	ction in the graduate calendar –	explain:
Please see the attached paragraphic program. Please changes to the Word document provided: Court Examination, and Doctoral Semi	e following sections of the rse work; Thesis Proposal	calendar, track change
Other changes – explain:		

Describe the existing requirement/procedure:

Please changes to the following sections of the calendar, track change Word document provided.

Provide a detailed description of the recommended change (Attach additional pages if space is not sufficient.)

Please changes to the following sections of the calendar, track change Word document provided.

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?): Streamlining and clarification of the components of the English PhD.

Provide implementation date: (implementation date should be at the beginning of the academic year)

September 2023

Are there any other details of the recommended change that the curriculum and policy committee should be aware of? If yes, 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):

Please changes to the following sections of the calendar, track change Word document provided.

Contact information for the recommended change:

Name: Dr. Melinda Gough, Grad Chair

Email: goughm@mcmaster.ca

Ext: 23716

Date Submitted: 2023/03/06



Recommendation for Change in Program Requirements/Procedures

Please note the following:

- This form must be completed for all changes involving degree program requirements and procedures. Sections of this form pertaining to your requested change must be completed.
- An electronic version of this form should be emailed to the Assistant Secretary, School of Graduate Studies (cbryce@mcmaster.ca). Questions about the form can also be directed to this address.
- A representative from the department/program 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:	Philosophy PhD Program
Degree: PhD	

Nature of Recommendation (Please complete appropriate field(s))
Is this change the result of an IQAP Review: Yes 🗆 No ズ
Creation of New Milestone 🗆
Change in Admission Requirements 🗆
Change in Comprehensive Examination Procedure
Change in Course Requirements 🗆
Change in the Description of a Section of the Graduate Calendar 🔀
Please explain:
Adding two sentences to clarify the process to be followed, and the division of responsibilities, when a PhD student must demonstrate competence in a skill required for their thesis research before completing their qualifying exam. The requirement itself has not changed - this merely clarifies the process.
Other Changes
Please explain:

Describe the existing requirement/procedure:

Students in the PhD program who, in the judgment of their supervisory committee, require a particular skill to undertake their thesis research (e.g. competence in a language other than English, or in formal logic) must demonstrate competence in that skill before taking their qualifying exam.

Provided a detailed description of the recommended change:

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?):

No change to the existing procedures. Just explaining the existing procedures more fully and clearly, as there has been confusion in some recent cases.

Provide Implementation Date: (Implementation date should be at the beginning of the academic year) July 1, 2023.

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):

See attachment.

Contact Information for the recommended change:

Name:Alice Pinheiro WallaEmail:pinheiro@mcmaster.ca

Date Submitted: January 27, 2023



Recommendation for Change in Graduate Courses

Please note the following:

- This form must be completed for all course changes. Sections of this form pertaining to your requested change must be completed.
- An electronic version of this form should be emailed to the Assistant Secretary, School of Graduate Studies (cbryce@mcmaster.ca). Questions about the form can also be directed to this address.
- A representative from the department/program 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

Course Title: Design, Collaboration and Innovation in Philosophical Research

Course Number (if existing course): N/A

Course Unit Count (normally 6, 3, 1.5 or 0): 3 Units

Requisites (Pre/Co/Anti or program enrollment requirement): Nil

Nature of Recommendation (Please complete appropriate field(s))

Is this change the result of an IQAP Review: Yes 🗆 No 💢

New Course 🗙

Date to be offered (new courses only): Fall/Winter 2023-4 Will the course be cross-listed (combined sections) with another course: No Provide a brief description to be included in the Graduate Calendar:

This course introduces graduate students to concepts and methods that will help them apply philosophical training in collaborative, interdisciplinary projects and/or projects that aim for impact and innovation across sectors.

Course Cancellation \Box

Please provide the rationale for the course cancellation:

Change in Course Title \Box

Provide the new course title:

Change in Course Description \Box

Provide a tracked-changes version of the course description changes:

Rationale

Provide the following:

- 1) a brief description that explains how the new course or changes to an existing course are related to the program learning outcomes
- 2) list of tentative topics to be covered
- 3) A statement of how the course fits into the department's program

The aim of the course is to provide philosophy graduate students with the conceptual toolkits, applied knowledge and methods they need to leverage their philosophical training to contribute to collaborative, interdisciplinary projects and/or project that aim for impact and innovation in the social sector. Specifically, the course will increase students' capacity to articulate and communicate the skills they acquire through their philosophy degrees, and apply those skills in experiential contexts. Topics covered will include design thinking, social innovation, systems thinking, stakeholder mapping and collaboration methodologies.

This course will build on the current graduate philosophical curriculum in offering students an opportunity to reflect and envision new ways of conducting philosophical research both within and without the discipline.

Enrolment, Method of Presentation and Evaluation

Expected Enrolment: 10 to 15 students

Describe in detail the method of presentation of course material: Project-based learning

Method of Evaluation:

Describe in detail the method of evaluation. This should include a percentage breakdown and, for 600-level courses, a detailed description (including percentages) of the extra work required of graduate students. Please also note if a lab or

tutorial will be included.

The course will be evaluated using the standard McMaster scheme.

Weekly reflections (30%) Major group project 1 (Theory of Change for a research/ innovation project) (30%) Major group project 2 (Co-Design a research/innovation program) (30%) Knowledge Mobilisation Plan (10%)

Interdepartmental Considerations

To prevent overlap, is a course in the same or related area offered in another department? If yes, please submit any relevant correspondence with the other department(s). No

If the course is intended primarily for students outside your department, do you have the support of the department/program concerned? N/A

Contact Information for the recommended change Name: Alice Pinheiro Walla Email: pinheiro@mcmaster.ca Date Submitted: January 27, 2023



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То

Gilmour Hall, Room 212 1280 Main Street West Hamilton, ON L8S 4L8

From : Christina Bryce Assistant Graduate Secretary

Graduate Council

At its meetings on March 27th 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:

- i. Communication Studies and Media Arts
 - 1. Change to Course Requirements
 - 2. Change to Comprehensive Exam Requirements
- ii. English
 - 1. Change to Program Requirements and Calendar Copy
- iii. Gender and Social Justice
 - 1. Addition to Eligible Programs (G.Dip.)
 - 2. Change to Course Requirements (M.A.)
- iv. History
 - 1. Change to Program Requirements
- v. Philosophy
 - 1. Change to Calendar Copy

For Information of Graduate Council:

- vi. Cognitive Science of Language
 - 1. New Course
 - a. 6BP3 Bilingual Phonology

vii. Communication Studies and Media Arts

1. New Courses

- a. 723 Islam, Feminisms and Global Media
- b. 724 Visions of Extinction: What the End Looks Like From Here
- c. 725 Theory, Race, and Power
- d. 726 Media, Sustainability, and Climate Justice
- e. 727 Cultural Production and the Environment
- f. 728 Critical Hope in Times of Protracted Crises



SCHOOL OF GRADUATE STUDIES

viii. English

1. Course Cancellations

- a. 736 Rhetoric and Self in Early Modern Devotional Poetry
- b. 737 Speaking Pictures: Emblems, Metaphor and Language in Early Modern Writing

2. New Courses

- a. 780 Engendering the (Queer, Trans, Non-Binary) Early Modern Stage: Then and Now
- b. 782 Seed Stories of Black and Indigenous Survivance

ix. Gender and Social Justice

- 1. Change to Course Description
 - a. 701 Doing Anti-Oppressive Research

2. New Courses

- a. 702 Gender & Social Justice in Community
- b. 721 Social Justice Perspectives on Gender and Health
- c. 722 Stories, bodies, archives: un/Learning in Movements

3. New Cross-listed Courses

- a. 723 Islam, Feminisms and Global Media
- b. 728 Critical Hope in Times of Protracted Crises

x. Greek and Roman Studies

1. Change in Course Title

- a. 747 Topics in Classical Literature
- b. 780 Independent Study in Classical Archaeology

2. New Course

a. 710 Research Methods in Greek and Roman Studies

xi. History

1. Change to Course Title and Description

a. 770 Sex, Health, and Gender in the Colonial World

xii. Philosophy

1. New Course

a. 772 Design, Collaboration and Innovation in Philosophical Research

McMaster

McMaster school of graduate studies

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 <u>ALL</u> changes involving degree program requirements/procedures. <u>All</u> sections of this form <u>must</u> be completed.

2. An electronic version of this form (must be in MS WORD <u>not</u> PDF) should be emailed to the Assistant Secretary, School of Graduate Studies (cbryce@mcmaster.ca).

3. A representative from the department is <u>required to attend</u> the Faculty Curriculum and Policy Committee meeting during which this recommendation for change in graduate curriculum will be discussed.

DEPARTMEI	NT	Communic	Communication Studies and Media Arts					
NAME OF PROGRAM a PLAN	and	Communic	ommunication, New Media, and Cultural Studies (CNMCS)					
DEGREE	PhD	-						
	NATUR	E OF REC	OMME	ND/	ATION (PLEASE CHE	СК	APPROPRIATE BOX)	
Is this char	Is this change a result of an IQAP review? No							
CREATION	OF NEW	MILESTON	E: No					
CHANGE IN REQUIREME		ION	co	MPF	GE IN REHENSIVE NATION PROCEDURE		CHANGE IN COURSE REQUIREMENTS	x
CHANGE IN <u>SECTION</u> IN CALENDAR			OF A		EXPLAIN:			
OTHER CHANGES	EXF	PLAIN:						

DESCRIBE THE EXISTING REQUIREMENT/PROCEDURE:

Our previous calendar copy for the program allows the committee overseeing the program to require, on a discretionary basis, that incoming students take 1 or 2 specific courses (from a list of 4) that had, previously, been identified as fundamental to the fields brought together in this interdisciplinary program.

PROVIDE A DETAILED DESCRIPTION OF THE RECOMMENDED CHANGE (Attach additional pages if space is not sufficient.)

One of the courses described in the previous calendar copy requirement is no longer offered (it had been a required course in our MA program, but was removed as a required course during the previous year's curriculum changes). Another one of the listed courses is not actually a core/fundamental course, but rather a topics course that has been taught in very different ways by different faculty members. Additionally, the CNMCS committee has only rarely exercised the power to levy this "remedial" requirement. We are recommending this requirement be changed in two ways: (1) removing the course (CMST&MM 712), and the topics course (CMST&MM 707); and (2) changing the wording of the requirement so that all students are simply required to take one of two "core" courses in the two departments (CSMA and ECS) that collaborate on delivering the CNMCS program, unless they have demonstrably taken an equivalent of at least one of the courses during a previous degree 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?):

Two courses are being removed because they are either not offered or are not core/methods courses. The change to defaulting to requiring that students take 1 of 2 courses unless their record demonstrates they have previously taken a difrect equivalent will ensure, more strictly (because not discretionary) and without the need for complex committee deliberations (in most cases), that students share some orientation to some of the fundamental points of orientation in our interdisciplinary program.

PROVIDE IMPLEMENTATION DATE: (Implementation date should be at the beginning of the academic year)

July 1st, 2023

ARE THERE ANY OTHER DETAILS OF THE RECOMMENDED CHANGE THAT THE CURRICULUM AND POLICY COMMITTEE SHOULD BE AWARE OF? IF YES, EXPLAIN.

This change was recommended by the CNMCS PhD committee, and then further approved by the CSMA faculty caucus. Discussion at the CSMA faculty caucus amended the proposal so that the CNMCS PhD advisory committee will make the final determination when there is disagreement between the graduate chair/co-chairs and an incoming student about the requirement (following discussion at GCPC, this procedure will be articulated in the program handbook instead of calendar copy).

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):

Students of the program must complete 18 units of approved coursework by the end of the second year, including:

4 courses, for a total of 12 units, to be completed in year 1; and two 3-unit doctoral seminars, taken in year 1 and year 2. At the discretion of the program's Advisory Committee, those students lacking relevant experience in a minimum of two of the program's three disciplines will be required to take 1-2 theory and methodology courses offered by ECS (CULTR ST 732) or CSMA (CMST&MM 700, 707 and/or 712), as part of the 4 courses to be completed in year 1. As part of the 4 courses to be completed in year 1. As part of the 4 courses to be completed in year 1, students must take at least one of either CULTR ST 732 or CMST&MM 700 (unless they have taken either course or a direct equivalent during a previous degree program). With the permission of the CNMCS Ph.D. Advisory Committee, students may take 3 units of electives from graduate courses offered by programs other than CNMCS.

CONTACT INFORMATION FOR THE RECOMMENDED CHANGE:

Name: Dr. David Ogborn, Graduate Chair (CSMA) Extension: 27603 Email: ogbornd@mcmaster.ca Date submitted: 22 Dec 2022

If you have any questions regarding this form, please contact the Assistant Secretary, School of Graduate Studies, cbryce@mcmaster.ca

SGS/2013

McMaster University

McMaster school of graduate studies

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 <u>ALL</u> changes involving degree program requirements/procedures. <u>All</u> sections of this form <u>must</u> be completed.

2. An electronic version of this form (must be in MS WORD <u>not</u> PDF) should be emailed to the Assistant Secretary, School of Graduate Studies (cbryce@mcmaster.ca).

3. A representative from the department is <u>required to attend</u> the Faculty Curriculum and Policy Committee meeting during which this recommendation for change in graduate curriculum will be discussed.

DEPARTME	T	Communicat	ion Studi	ies and Media Arts (CSMA)		
	••	Commaniou					
NAME OF PROGRAM a PLAN	Ind	Communicat	mmunication, New Media, and Cultural Studies (CNMCS)				
DEGREE	PhD						
	NATUR	E OF RECO	MMEND	DATION (PLEASE CHE	СК	APPROPRIATE BOX)	
Is this char	ige a re	sult of an IQ	AP revi	ew? No			
CREATION	OF NEW	MILESTONE:	No				
CHANGE IN REQUIREME		ION	COMF	IGE IN PREHENSIVE IINATION PROCEDURE	x	CHANGE IN COURSE REQUIREMENTS	
CHANGE IN <u>SECTION</u> IN CALENDAR		SCRIPTION O ADUATE	FA	EXPLAIN:			
OTHER CHANGES	EXF	PLAIN:	;				

DESCRIBE THE EXISTING REQUIREMENT/PROCEDURE:

Previously, our comprehensive examinations have been graded, according to a complicated scheme of letter grades, despite the fact that these grades are not reported to SGS and do not appear on the transcript.

PROVIDE A DETAILED DESCRIPTION OF THE RECOMMENDED CHANGE (Attach additional pages if space is not sufficient.)

We are recommending that we shift, immediately, to grading comprehensive exams on a simple Pass/No-Pass basis.

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 existing procedure of grading the comprehensive exams has numerous problems: (1) it adds complexity to what is already a complex procedure and deliberation (administering/finishing the comps process); (2) the grades produced by this procedure do not appear anywhere official such as transcripts; (3) students will unofficially compare their grades to each other, with lower grades exacerbating problems like impostor syndrome; (4) it places some focus on the grade, inevitably at the expense of focus on the research conversation. Moreover, it is our understanding that comprehensive examinations in the English PhD, which is closely adjacent to this PhD program (since ECS faculty participate in the CNMCS program, including as co-instructors of our required pro-seminars), has already shifted to P/NP grading of the comprehensive examinations.

PROVIDE IMPLEMENTATION DATE: (Implementation date should be at the beginning of the academic year)

We are requesting that this change be considered to take effect immediately, so that the cohort of students currently completeing comprehensive examinations are not denied the benefit of this pedagogical improvement. In this connection, we note that the change to actual calendar copy supporting this requirement is rather minimal in nature (the existing calendar copy does not actually specify a grading system for the comprehensives).

ARE THERE ANY OTHER DETAILS OF THE RECOMMENDED CHANGE THAT THE CURRICULUM AND POLICY COMMITTEE SHOULD BE AWARE OF? IF YES, EXPLAIN.

The comprehensive exam grading procedure is currently described in this way in our program handbook:

"The candidate's mark in the Comprehensive Examination will be calculated on the average of the grades for the Field Survey, the Topic Paper, and the oral examination. The candidate must pass each part of the Comprehensive Examination (a B- grade or better). The student has the option of being informed of his or her grades on the written papers before the beginning of the oral examination. If the student has failed either written paper with a mark under B-, that paper must be rewritten before proceeding to the oral examination, he or she must be submitted within three months of the first submission. If the candidate fails the oral examination, he or she must make a second attempt within three months. Failure to pass any part of the examination after two attempts will result in withdrawal from the program. The method for determining the grades for the three parts of the Comprehensive Examination is as follows. Before the oral examination, the three committee members will each

submit in writing his or her grade for each of the two written papers. The supervisor will then calculate the average grade for each paper; discussion will follow to arrive at the final grade for each paper. Grades for the written papers should be submitted before the oral examination, and for the oral examination at the end of the exam. The final recorded grade will be a Fail, Pass, or Pass+ (with distinction). The final category denotes that all three committee members independently assigned a grade of "A+" to each paper and to the oral. Two grades of "A+" and one "A" equals a pass, but not a pass with distinction. Students should be informed of their grades immediately after the oral examination."

We are proposing that the description in the handbook be changed to the following, much simpler text:

"Comprehensive Examination papers and oral exam will be graded Pass/No-pass (P/NP), on the basis of a simple majority of committee members (with a tied vote counting as Pass). If either written paper does not pass, that paper must be rewritten before proceeding to the oral exam. Any second attempt must be submitted within three months of the first submission. If the oral examination does not pass, a second attempt must be made within three months. Failure to pass any part of the examination after two attempts will result in withdrawal from 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):

Students in the program will be required to take a Comprehensive Examination in the area of their intended thesis research. This will involve writing two papers, a Field Survey and a Topic Paper, and defending both in an oral examination. The Field Survey should show broad expertise in the field(s) of knowledge the candidate's research will engage from within of Communication Studies, Cultural Studies, and/or New Media/Media Arts. The Topic Paper describes how the candidate's thesis intervenes in the chosen field(s) and the particular contribution it will make. Both papers are to be researched and written concurrently by the candidate, are to be between 25 and 30 double-spaced pages in length and are due early in the second term of the second year of study. The Oral Examination of both papers will follow within 10 business days of submission. The candidate's mark in the Comprehensive Examination will be calculated on the average of the grades for the Field Survey, the Topic Paper, and the Oral Examination. Each component of the comprehensive examination (field survey, topic paper, oral examination) is graded either Pass or No-Pass (P/NP), on the basis of a simple majority of committee members (with tied votes counting as Pass)

CONTACT INFORMATION FOR THE RECOMMENDED CHANGE:

Name: Dr. David Ogborn, Grad Chair (CSMA) Extension: 27603 Email: ogbornd@mcmaster.ca Date submitted: 22 Dec 2022

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 Program Requirements/Procedures

Please note the following:

- This form must be completed for all changes involving degree program requirements and procedures. Sections of this form pertaining to your requested change must be completed.
- An electronic version of this form should be emailed to the Assistant Secretary, School of Graduate Studies (cbryce@mcmaster.ca). Questions about the form can also be directed to this address.
- A representative from the department/program 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 (*PhD Language Requirement*)

Degree: ENGLPhD

Nature of Recommendation (Please complete appropriate field(s))
Is this change the result of an IQAP Review: Yes No
Creation of New Milestone 🗆
Change in Admission Requirements 🗆
Change in Comprehensive Examination Procedure
Change in Course Requirements 🗆
Change in the Description of a Section of the Graduate Calendar 🗆 Please explain:
Other Changes 🖾 Please explain: Change in the English PhD Language Requirement

Describe the existing requirement/procedure: The Department also has a second-language requirement for the Ph.D. degree. Candidates who have not passed a full university course in a language other than English must complete such a course or pass a translation examination with the aid of a dictionary. (Exemption from the examination may also be granted for students with native fluency in a language other than English. The Department will consider qualifications from other examining authorities, but reserves the right to insist on an examination in any individual case. Requests for exemption should be addressed to the Graduate Studies Chair.)

Provided a detailed description of the recommended change: Elimination of this requirement, unless the project dictates/required by the supervisory committee.

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?): Capacity to meet this requirement no

longer fits within the timeframe for a 4 year PhD programme.

Provide Implementation Date: (Implementation date should be at the beginning of the academic year)

September 2023

Are there any other details of the recommended change that the curriculum and policy committee should be aware of? If yes, please explain: We will include the following statement in our revised programme handbook: Individual supervisory committees may still recommend second language learning for students in particular fields (eg. Indigenous studies, comparative literature, medieval/early modern studies, fields where reading scholarship in a foreign language would be particularly beneficial).

Provide a description of the recommended change to be included in the calendar (please include a tracked-changes version of the calendar section affected):

Language Requirement

The Department also has a second language requirement for the Ph.D. degree. Candidates who have not passed a full university course in a language other than English must complete such a course or pass a translation examination with the aid of a dictionary.

Contact Information for the recommended change: Name: Dr. Melinda Gough, Graduate Chair Email: goughm@mcmaster.ca Date Submitted: 2023/03/06



Recommendation for change in graduate curriculum – for change(s) involving degree progran
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 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	Name of Program and Plan	Degree
English & Cultural Studies	English PhD	ENGLPHD
Nature of Reco	mmendation (please check appr	ropriate box)
Is this change a result of an IQAP review	w? Yes 🖌 No	
Creation of new milestone		
Change in admission requiremen	ts	
Change in comprehensive examined	nation	
Change in course requirements		
• Change in the description of a se	ction in the graduate calendar –	explain:
Please see the attached paragraphic program. Please changes to the Word document provided: Court Examination, and Doctoral Semi	e following sections of the rse work; Thesis Proposal	calendar, track change
Other changes – explain:		

Describe the existing requirement/procedure:

Please changes to the following sections of the calendar, track change Word document provided.

Provide a detailed description of the recommended change (Attach additional pages if space is not sufficient.)

Please changes to the following sections of the calendar, track change Word document provided.

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?): Streamlining and clarification of the components of the English PhD.

Provide implementation date: (implementation date should be at the beginning of the academic year)

September 2023

Are there any other details of the recommended change that the curriculum and policy committee should be aware of? If yes, 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):

Please changes to the following sections of the calendar, track change Word document provided.

Contact information for the recommended change:

Name: Dr. Melinda Gough, Grad Chair

Email: goughm@mcmaster.ca

Ext: 23716

Date Submitted: 2023/03/06

Grad Calendar Programme Description:

Overall Programme Description Calendar Changes:

English, Ph.D

The Ph.D. Degree Program 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 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.

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 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 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 programme, 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.



Recommendation for Change in Program Requirements/Procedures

Please note the following:

- This form must be completed for all changes involving degree program requirements and procedures. Sections of this form pertaining to your requested change must be completed.
- An electronic version of this form should be emailed to the Assistant Secretary, School of Graduate Studies (cbryce@mcmaster.ca). Questions about the form can also be directed to this address.
- A representative from the department/program 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 and S	ocial Justice
Name of Progra	m and Plan:	Gender and Social Justice Graduate Diploma (PhD)
Degree: g	raduate diploma	(PhD)

Nature of Recommendation (Please complete appropriate field(s))
Is this change the result of an IQAP Review: Yes □ No ⊠
Creation of New Milestone
Change in Admission Requirements 🛛
Change in Comprehensive Examination Procedure
Change in Course Requirements

Change in the Description of a Section of the Graduate Calendar ⊠ Please explain:

Add "Greek and Roman Studies" to the following list of departments whose PhD students are eligible for the Graduate Diploma.

The Graduate Diploma option is available to incoming and in-course Ph.D. students in McMaster's Departments of Anthropology, Communication new Media and Cultural Studies, English and Cultural Studies, French, History, Philosophy, Religious Studies, Social Work and Sociology.

Describe the existing requirement/procedure:

Provided a detailed description of the recommended change:

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)

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):

Add "Greek and Roman Studies" to the following list of departments whose PhD students are eligible for the Graduate Diploma.

The Graduate Diploma option is available to incoming and in-course Ph.D. students in McMaster's Departments of Anthropology, Communication new Media and Cultural Studies, English and Cultural Studies, French, Greek and Roman Studies, History, Philosophy, Religious Studies, Social Work and Sociology.

Contact Information for the recommended change:Name:Catherine AndersonEmail:gsj_dir@mcmaster.caDate Submitted:4 January 2023



Recommendation for Change in Program Requirements/Procedures

Please note the following:

- This form must be completed for all changes involving degree program requirements and procedures. Sections of this form pertaining to your requested change must be completed.
- An electronic version of this form should be emailed to the Assistant Secretary, School of Graduate Studies (cbryce@mcmaster.ca). Questions about the form can also be directed to this address.
- A representative from the department/program 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: M.A. in Gender & Social Justice Degree: Master of Arts

Nature of Recommendation (Please complete appropriate field(s))
Is this change the result of an IQAP Review: Yes □ No ⊠
Creation of New Milestone 🗆
Change in Admission Requirements 🗌
Change in Comprehensive Examination Procedure
Change in Course Requirements 🛛
Change in the Description of a Section of the Graduate Calendar 🛛 Please explain:
Please see attached for an edited version of the course list.
Revise the final sentence of the option for part-time studies:
Coursework may be completed in any sequence, but the three two core courses must be completed prior to the major research project.
Other Changes 🗆
Please explain:
1 of 3

Describe the existing requirement/procedure:

Until 2022, course requirements for the MA in GSJ were:

Three compulsory core courses: (12 units)

- <u>GENDR ST 700 / Theorizing Gender and Social Justice</u>
- <u>GENDR ST 701 / Doing Anti-Oppressive Research</u>
- <u>GENDR ST 707 / Knowledge in Action</u>

Two additional elective courses: (6 units)

(from an approved list)

In 2022, we obtained permission for a temporary modification of the course requirements, which in 2022-23 are:

Three compulsory core courses: (9 units)

- <u>GENDR ST 700 / Theorizing Gender and Social Justice</u>
- <u>GENDR ST 701 / Doing Anti-Oppressive Research</u>
- GendrSt 702 / Gender and Social Justice in Community

Three additional elective courses: (9 units) (from an approved list)

Provided a detailed description of the recommended change:

We now seek to modify the course requirements to the following:

Two compulsory core courses: (6 units)

- <u>GENDR ST 700 / Theorizing Gender and Social Justice</u>
- <u>GENDR ST 701 / Doing Anti-Oppressive Research</u>

Four additional elective courses: (12 units) (from an approved list)

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?):

After a thorough review of the previous core course GendrSt 707, we have concluded that a course involving community-engaged (CE) learning ought not to be required in the program. We are proposing two three-unit courses that include CE components, which we will offer on rotation as electives. Thus, students interested in CE work will still have this option available, without requiring it of all students.

Thanks to MOUs with other departments and new hires, we are now able to offer a greater variety of electives than in the past. The restructuring of program requirements allows us to take advantage of our new colleagues' expertise.

Provide Implementation Date: (Implementation date should be at the beginning of the academic year)

September 2023

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):

Please see the attached document for an edited version of the course list.

Contact Information for the recommended change:Name:Catherine AndersonEmail:gsj_dir@mcmaster.caDate Submitted:4 January 2023

Gender and Social Justice Courses

Please note not all courses are offered every year. Courses

Core Courses

All M.A. students must take the following courses:

GENDR ST 700 / Theorizing Gender and Social Justice

GENDR ST 701 / Doing Anti-Oppressive Research

GENDR ST 707 / Knowledge in Action

Approved Elective Courses

- GENDR ST 6G03 / Language, Sex and Gender
- GENDR ST 6QA3 / Queerness in the Archives: Lesbian and Gay Writing, Art and Activism in Canada, 1969-1989
- GENDR ST 6RI3 / Colonialism and Resistance in Representations of Indigenous Womanhood
- GENDR ST 6Z03 / Gender and the Textile Arts
- GENDR ST 702 / Gender and Social Justice in Community
- GENDR ST 703 / Topics in Gender and Social Justice
- GENDR ST 704 / Independent Study in Gender and Social Justice
- GENDR ST 705 / Disability, Subjectivity, and Visual Representation
- GENDR ST 706 / From There to Here: Refugee Women in the World and in Our Community
- GENDR ST 708 / Creating and Embodying Theory
- GENDR ST 721 / Social Justice Perspectives on Gender & Health
- GENDR ST 722 / Stories, bodies, archives: un/Learning in Movements
- GENDR ST 723 / Islam, Feminisms and Global Media
- GENDR ST 725 / Social Justice Frameworks of Prison Abolition
- GENDR ST 728 / Critical Hope in Times of Protracted Crisis

Approved Electives from Outside Departments

These courses have been pre-approved to count toward the Gender and Social Justice electives requirements. Note: Not all of these courses will be offered every year and some require special permissions.

In some courses, seats have been reserved for GSJ students; in others, seats will be granted based on availability after students in their home department have registered. Please consult the GSJ program website for specific enrollment instructions.

- ANTHROP 706 / Bodies, Politics, Data
- ANTHROP 722 Ethnographic Theory and Research Methods
- ANTHROP 734 Indigenous Knowledge & Methodology
- ANTHROP/GLOBALST 786 / Global Futures: Theory, Practice and Possibility
- ANTHROP 788 / Topics in Anthropological Approaches to Islam
- CMSTMM 707 Theoretical Issues in Media, Culture, and Communication
- CMST&MM 714 / Feminism, Technology and Science
- CMSTMM 718 Critical Approaches to Communication Policy & Law
- CMST&MM 720 / Data Cultures
- CMST&MM 722 / Beyoncé Studies: Creativity, Celebrity, and Activism
- CLASSICS 716 / Gender, Sexuality, and the Politics of Desire in Archaic and Classical Greece
- ENGLISH 701 Visionary Women
- ENGLISH/CULTR ST 708 / Selfie/Culture
- ENGLISH/CULTRST 717 / Global Sex
- ENGLISH/ CULTR ST 757 / Gender, Civility, and Courtliness in Early Modern Europe
- ENGLISH/ CULTR ST 758 / Literature as Witness
- ENGLISH/CULTRST 770 Queer Caribbean Writing: Sex, Gender, Politics
- ENGLISH/CULTRST 773 Revolt & Remember: Resilience in the Postcolonial Environmental Humanities
- ENGLISH/CULTRST 780 Engendering the (Queer, Trans, Non-Binary) Transnational Early Modern Stage: Then and Now
- ENGLISH/ CULTR ST 781 / Public Mourning in Canada: What Makes a Life Grievable?
- ENGLISH/ CULTR ST 785 / Migratory Routes: Indian Diasporic Fiction and Film
- FRENCH 729 / Écrits de femmes québécois et franco-canadiens contemporains
- HISTORY 770 / Sex, Gender, and Health in the Colonial World
- HISTORY 766 / Comparative Perspectives on Health and Medicine in the Colonial World
- HISTORY 776 / History of Sexualities in the Western World, 1750 to the present
- HISTORY 777 Decolonizing Indigenous History

- HISTORY 779 / History of Indigenous Manifestos
- HISTORY 780 / Historical Perspectives on Women and Biography
- LABRST 791 / Contemporary Issues in Labour Studies
- LABRST 793 / Advanced Labour Studies Theory
- LABRST 740 / Selected Topics in Labour Studies
- LABRST 780 / Bodies at Work: Politics, Science, Law & Occupational Health
- PHILOS 764 / Social & Political Philosophy
- PHILOS 759 / Selected Topics in Applied Ethics
- RELIG ST 777 / Topics in Philosophy and Jewish Thought
- RELIG ST 781/ ANTHROP 704 / Introduction to the Anthropology of Religion
- RELIG ST 789 / Topics in Gender and Feminist Theory and Religious Studies
- SOCSCI 708 / Critical Approaches to Community Based Research
- SOC WORK 721 / Changing Communities: Tensions and Possibility for Citizenship and Social Justice
- SOCIOL 728 / Sociology of Immigration
- SOCIOL 758 / Sociology of Race and Ethnicity
- SOCIOL 759 / Sociology of Gender and Sexuality
- SOCWORK 770 Social Work and Social Justice: Theoretical Tensions



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 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	Name of Progr	am and Plan	Degree	
Nature of Re	ecommendation (pl	ease check appro	priate box)	
Is this change a result of an IQAP rev	view? Yes	No		
Creation of new milestone				
Change in admission requirem	nents			
Change in comprehensive exa	mination			
Change in course requirement	S			
Change in the description of a	section in the grad	uate calendar – e	xplain:	
Other changes – explain:				

Describe the existing requirement/procedure:

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?):

Provide implementation date: (implementation date should be at the beginning of the academic year)

Are there any other details of the recommended change that the curriculum and policy committee should be aware of? If yes, explain:

Provide a description of the recommended change to be included in the calendar (please include a tracke	d
changes version of the calendar section affected if applicable):	

Contact information for the recommended change:	
Name:	Email:
Ext:	Date Submitted:



Recommendation for Change in Program Requirements/Procedures

Please note the following:

- This form must be completed for all changes involving degree program requirements and procedures. Sections of this form pertaining to your requested change must be completed.
- An electronic version of this form should be emailed to the Assistant Secretary, School of Graduate Studies (cbryce@mcmaster.ca). Questions about the form can also be directed to this address.
- A representative from the department/program 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:	Philosophy PhD Program
Degree: PhD	

Nature of Recommendation (Please complete appropriate field(s))
Is this change the result of an IQAP Review: Yes 🗆 No ズ
Creation of New Milestone 🗆
Change in Admission Requirements 🗆
Change in Comprehensive Examination Procedure
Change in Course Requirements 🗆
Change in the Description of a Section of the Graduate Calendar 🔀
Please explain:
Adding two sentences to clarify the process to be followed, and the division of responsibilities, when a PhD student must demonstrate competence in a skill required for their thesis research before completing their qualifying exam. The requirement itself has not changed - this merely clarifies the process.
Other Changes
Please explain:

Describe the existing requirement/procedure:

Students in the PhD program who, in the judgment of their supervisory committee, require a particular skill to undertake their thesis research (e.g. competence in a language other than English, or in formal logic) must demonstrate competence in that skill before taking their qualifying exam.

Provided a detailed description of the recommended change:

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?):

No change to the existing procedures. Just explaining the existing procedures more fully and clearly, as there has been confusion in some recent cases.

Provide Implementation Date: (Implementation date should be at the beginning of the academic year) July 1, 2023.

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):

See attachment.

Contact Information for the recommended change:

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