To : Members of Graduate Council

From : Christina Bryce
Assistant Graduate Secretary

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The next meeting of Graduate Council will be held on **Tuesday April 23ʳᵈ 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.

## A G E N D A

   I.    **Minutes of the meeting of March 19ᵗʰ, 2019**

  II.    **Business arising**

 III.    **Report from the Vice-Provost and Dean of Graduate Studies**

 IV.    **Report from the Graduate Associate Deans**

  V.    **Report from the Associate Registrar and Graduate Secretary**

 VI.    **Report from the Coordinator Postdoctoral Affairs and Research Training**

 VII.    **Faculty of Engineering Graduate Curriculum and Policy Committee Report**

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

 IX.    **Faculty of Humanities Graduate Curriculum and Policy Committee Report**

  X.    **Faculty of Science Graduate Curriculum, Policy, Admissions and Study Committee Report**

 XI.    **Faculty of Social Science Graduate Curriculum and Policy Committee Report**

 XII.    **Faculty of Health Sciences Graduands (to be distributed)**

# McMaster University

**School of Graduate Studies**

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Tuesday March 19th at 9:30 am in Council Chambers (GH-111)

Present: Dr. D. Welch (Chair), Dr. K. Hassanein, Dr. A. Sills, Dr. J. Shedden, Dr. M-A. Letendre, Dr. J. Gillett, Ms. S. Oikawa, Ms. S. Ramsammy, Mr. A. Ozbilge, Dr. I. Marwah, Mr. L. Greville, Dr. S. Bannerman, Dr. J. Carette, Dr. L. Wiebe, Dr. E. Grodek, Dr. S. Raha, Dr. I. Bruce, Dr. B. Gupta, Dr. P. Swett, Dr. D. Mountain, Ms. S. Baschiera (Associate Registrar and Graduate Secretary), Ms. C. Bryce (Assistant Graduate Secretary)

Regrets: Dr. M. Thompson, Dr. L. Chan, Dr. B. Doble, Dr. L. Thabane, Dr. M. Gough

## I. Minutes of the meeting of February 19th, 2019

It was duly moved and seconded **'that Graduate Council approve the minutes of the meeting of February 19th, 2019 with the corrections noted.'**

The motion was **carried**.

## II. Business arising

There was no business arising.

## III. Report from the Vice-Provost and Dean of Graduate Studies

**Dr Welch reported on the following items:**

- The delay in notification from the provincial government regarding OGS, QE2 and Trillium competitions and;
- The success of the McMaster 3MT competition with significantly more competitors than in previous years and the winner, Matthew Campea from the Faculty of Engineering.

## IV. Report from the Graduate Associate Deans

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

- The search for a director for the Chemical Biology graduate program, noting that they will also be appointing an associate director.

**Dr. Hayward (Faculty of Health Sciences) reported on the following item:**

- Preparations for the FHS Research Plenary happy May 14th to 16th.

Drs. Swett, Hassanein, Gillet had no report.

## V. Report from the Associate Registrar and Graduate Secretary

**Ms. Baschiera reported on the following items:**

- Progress on the opt-out fee process mandated by the provincial government;
- The uptake of thesis defences moving through the accelerated thesis process, noting that they are continuing to add enhancements on the system side;
- The work to finalize requirements for the admissions project. The recommendations will then be forwarded to the project steering committee for discussion on direction.

### VI. Graduate Student Life Update

There was no update.

### VII. New Scholarship

It was duly moved and seconded, **'that Graduate Council approve the new scholarship as set out in the document.'**
The motion was **carried**.

### VIII. Graduate Council Working Group Update and Discussion

#### a. Graduate Program Structure

Dr. Gupta explained that the group was formed in the fall and was to review what is happening at McMaster with respect to existing regulations and how they apply to current programs. The intent is to create framework to streamline regulations and process. The committee reviewed definitions of different types of programs, whether graduate fees were appropriately flexible for students, the types of leaves available to students and whether they should be expanded, what constitutes full versus part-time status and revised the definitions of a course and milestone to make things clearer. A report is planned for May Graduate Council.

#### b. Cotutelle

Dr. Swett provided context for this working group, explaining that Cotutelle is a process in which a student at the Ph.D. level has two supervisors, one here and one abroad. The student spends time at both institutions and has a joint degree in the end. It's a relatively new policy at McMaster and is not widely used, understood or accessible. The Cotutelle working group has been looking at policy (to make it easier to understand and complete), process (who needs to be involved at what stages and what kind of oversight is provided by the School of Graduate Studies) and promotion (how to sell the option and make it more attractive).

Dr. Swett noted that they were planning to provide some language for the calendar in April and provide a full report to Graduate Council in May.

Council members discussed the costs associated with a cotutelle and the possibility of funds to assist with this to help with promotion. Dr. Welch noted that MITACS had announced that they're greatly increasing the amount of money for incoming and outgoing travel and that that might be an option.

Council members discussed policy revisions as it related to the level of detail needed in the agreements as well as the context at European institutions who have more experience with cotutelle arrangements as well as different tuition structures and course requirements.

### c. Student-Supervisor Relationship

Dr. Raha explained that the group had been meeting to discuss the challenges in the student-supervisor relationship and noted that the most prevalent issue is misalignment of expectation in carrying out the thesis work. They consulted with a number of different groups and came to the conclusion that they need to consolidate information across campus as they've noted that a lot of good support exists, but the information is not widely known.

The group discusses a number of strategies including the development of a better web presence, peer mentorship, assistance from the MacPherson Institute and discussions about providing some information at the tenure and leadership promotion workshop. A report is planned for May Graduate Council.

Council members discussed supervision oversight (or lack thereof) and how it intersected with the issues being considered. Dr. Raha noted that it was clear to the group that the processes and information must get to the leadership within programs and that how oversight is maintained has been an aspect of the discussion.

A council member noted the process of faculty review for tenure track faculty and noted that the working group had discussed the concept of a contract between supervisor and student versus the worksheet that currently exists but is voluntary.

There being no other business the meeting was adjourned at 10:15.

To      :      Graduate Council

From   :      Christina Bryce
               Assistant Graduate Secretary
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At its meeting on March 4th and via e-ballot on March 13th the Faculty of Engineering Graduate Curriculum and Policy Committee approved the following graduate curriculum recommendations.

Please note that these recommendations were approved at the April 2nd meeting of the Faculty of Engineering Meeting.

**FOR APPROVAL OF GRADUATE COUNCIL:**

- **School of Engineering Practice and Technology**
  - **Change to Course Requirements and Calendar Copy (M.Eng.D., M.E.M.E.)**

- **Chemical Engineering**
  - **Change to Admission Requirements**

- **Computing and Software**
  - **Change to Calendar Copy – New Milestone**

- **Mechanical Engineering**
  - **Change to Course Requirements and Calendar Copy**

**FOR INFORMATION OF GRADUATE COUNCIL:**
- **School of Engineering Practice and Technology**
  - **New Courses**
    - 720 Cloud Computing
    - 721 Data Analytics, Machine Learning and AI on Cloud Platforms
  - **New Cross-Listed Courses**
    - 722 Electric Drive Vehicles
    - 723 Industrial Components, Networks, and Interoperability
  - **Change to Course Offering**
    - 701 Project

- **Chemical Engineering**
  - **New Course**
    - 720 Lean Six Sigma for Engineers

- **Electrical and Computer Engineering**
  - **New Course**
    - 6BB3 Cellular Bioelectricity

- **Materials Science and Engineering**
  - **New Cross-listed Course**
    - 715 Solidification Processing

**McMaster University**

**SCHOOL OF GRADUATE STUDIES**

# RECOMMENDATION FOR CHANGE IN GRADUATE CURRICULUM - FOR CHANGE(S) INVOLVING DEGREE PROGRAM REQUIREMENTS / PROCEDURES / MILESTONES

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**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.

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| DEPARTMENT | W Booth School of Engineering Practice and Technology |
|---|---|
| **NAME OF PROGRAM and PLAN** | Master of Engineering Design program |
| **DEGREE** | **Master of Engineering Design program** |

| **NATURE OF RECOMMENDATION** *(PLEASE CHECK APPROPRIATE BOX)* |
|---|
| **Is this change a 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** IN THE GRADUATE CALENDAR | X | **EXPLAIN:** Update the calendar to reflect the changes to the program |
|---|---|---|

| **OTHER CHANGES** | x | **EXPLAIN:** Introducing two new streams: (i) Smart Systems and (ii) Digital Reality |
|---|---|---|

**DESCRIBE THE <u>EXISTING</u> REQUIREMENT/PROCEDURE:**

1. The following text exists in the calendar:

Strong emphasis on applying design competencies to real world problems is accomplished via industrially motivated and supported projects.

The M.Eng. Design program emphasizes development of competencies in:

- Leadership, collaboration, and management skills for diverse teams.
- Design thinking and innovations methodologies.
- Engineering disciplines leading to breakthrough design and operation of systems in:
    - process industries (refining, chemicals, specialty chemicals, pharmaceuticals, power, oil and gas production, and similar)
    - manufacturing of industrial and consumer products
    - health, wellness and aging device and software solutions, and
- augmented reality and virtual reality

2. The following text exists in the calendar:

Candidates will be required to complete eight half courses, plus full-time students must successfully complete <u>SEP 771</u> Part I and II and <u>SEP 772</u> . Part time students are also required to complete <u>SEP 772</u> .

The curriculum has five main components:

**1. Leadership and management capabilities** courses that will enable M.Eng. Design graduates to deal with complex situations in the work environment, to lead teams,  to manage projects, and innovate

**2. Interdisciplinary engineering courses** in product design, project management, and risk management.

**3. Core technical courses** that provide expert knowledge in targeted technical areas.

**4. Elective courses** that allow students to acquire broader expertise in the technical areas which are at the centre of their studies.

**5. An industrially oriented project** that solves complex problems requiring synthesis of knowledge from several disciplines and presenting the students with an opportunity to develop the solution in an industrial environment.

3. SEP 6C03 is mentioned as an elective for Process and Production systems

4. The following text exists in the calendar:

SEP 771 / W Booth School of Engineering Practice and Technology Practitioner's Forum Part I (Full-time students only)

SEP 771 / W Booth School of Engineering Practice and Technology Practitioner's Forum Part II (Full-time students only)

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

1. Replace the text with the following:

   The M.Eng. Design program emphasizes development of competencies in Design Thinking and innovations methodologies, as well as leadership, collaboration, and management skills to lead diverse teams.

   These competencies are combined with advanced technologies to enable design and implementation of solutions which integrate digital reality with the physical world to deliver solutions for daily living or for complex IT or industrial systems.

   The following stream are currently offered in the Program:
   - Product Design: Design Thinking approach to the development of products and services.
   - Digital Reality: Design of augmented-, virtual-, and mixed-reality immersive experiences.
   - Smart Systems: Design and integration of AI, robotics, automation, and physical systems
   - Process and Production Systems: engineering design and operations improvement

2. Replace with the following:

The curriculum has three main components:

**1. Professional development** courses that will enable M.Eng. Design graduates to deal with complex situations in the work environment, to lead teams, and to manage projects.
**2. Courses relevant to the selected stream:** some course are mandatory for a given stream, while others are elective.
**3. An M.Eng. project** that requires synthesis of knowledge from various disciplines

3. Remove SEP 6C03 as an elective for Process and Production systems

4. Add (seminars series) after part I and II of SEP 771

5. Add streams after Process and production systems and Product Design

6. Digital Reality stream:

Students enrolling in this stream are required to take the following:

SEP 700 / M.Eng. Project in Engineering Design Part I
SEP 700 / M.Eng. Project in Engineering Design Part II
SEP 760 / Design Thinking
SEP 771 / W Booth School of Engineering Practice and Technology Practitioner's Forum Part I (Full-time students only)
SEP 771 / W Booth School of Engineering Practice and Technology Practitioner's Forum Part II (Full-time students only)
SEP 772 / Innovation Studio

In addition, they will have to take at least 5 courses from the following list:

3

- SEP 6CG3: Fundamentals of computer graphics and animation development
- SEP 6VE3: Visual effects and animation production technology
- SEP 714: Workflow management for animated prototypes
- SEP 715: Rendering techniques
- SEP 791: Augmented Reality, Virtual Reality and Mixed Reality
- SEP 792: Interactive applications utilizing GPU's for real-time projects

7.Smart Systems stream:

Students enrolling in this stream are required to take the following:

SEP 700 / M.Eng. Project in Engineering Design Part I

SEP 700 / M.Eng. Project in Engineering Design Part II

SEP 760 / Design Thinking

SEP 771 / W Booth School of Engineering Practice and Technology Practitioner's Forum Part I (Full-time students only)

SEP 771 / W Booth School of Engineering Practice and Technology Practitioner's Forum Part II (Full-time students only)

SEP 772 / Innovation Studio

SEP 760 / Design Thinking

In addition, they will have to take at least 3 half courses from the following list:
- SEP 786# AI and Machine Learning fundamentals
- SEP 787# Machine Learning: Classification Models
- SEP 788# Neural Networks and Development Tools
- SEP 789# Deep Learning and its Applications
- SEP 7xx# Cloud computing (pending approval)
- SEP 7xy# Data Analytics, Machine Learning and AI on Cloud Platforms (pending approval)
- MECH ENG 761  Industrial Components, Networks, and Interoperability
- SEP 780 Advanced Robotics and Automation
- SEP 767 Multivariate Statistical Methods for Big Data Analysis and Process Improvement

8.Add 2 quarter courses:
- SEP 7xx# Cloud computing
- SEP 7xy# Data Analytics, Machine Learning and AI on Cloud Platforms

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**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?):**

1. Update text to reflect proposed new streams.
2. Simplify the description of the program to make it easier to understand
3. Chem Eng 6C03 no longer exists as a course in Chem Eng, therefore, we cannot cross list a course that does not exist
4. To provide clarity to students that this is a seminar series.
5. To provide clarification in the calendar for streams offered in the MED program.
6. and 7. Streams in Digital Reality and in Smart Systems

Since 1970s there have been rapid advancements in computing hardware and software which have provided a basis for a continuing development of novel manufacturing methods, better decision making (based on models) in management of manufacturing processes and the supply chain, as well as paradigm-altering computing and communication devices which we encounter in our daily lives.

Presently a vast change is underway in all aspects of the societal infrastructure and the way we live. Physical world, real space within which we reside is being increasingly augmented by its representation in digital software models, data and inferences engines which reside in various forms of computing systems. New domains of knowledge, which are being continuously discovered in this digital world, require new capabilities for engineering graduates. Cyber-physical world is becoming a reality (Fig. 1) which is comprised of a variety of cyber-physical systems (see examples in Fig. 2). Cyber-physical systems (Fig. 3) are characterized by a physical asset (e.g. machine) and its digital twin, i.e. a model which mimics the behavior of the physical asset.
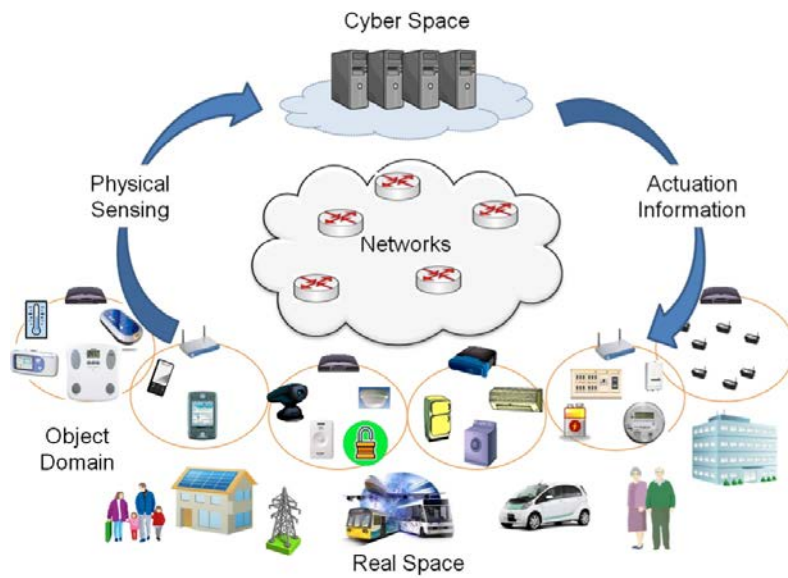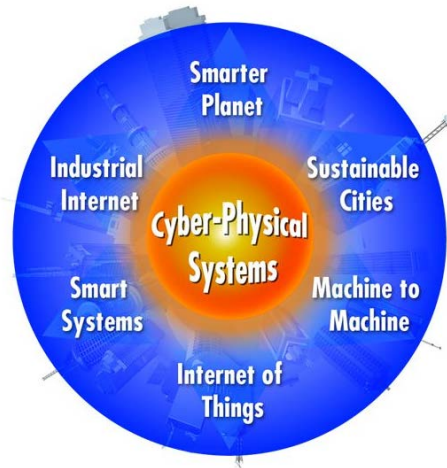


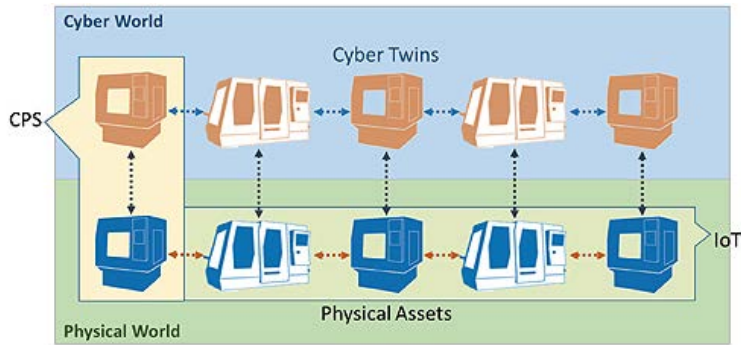Fig. 1. Cyber physical world[1]

Fig. 2. Cyber-physical systems[2]



Fig. 3. A cyber physical system is comprised of a physical asset and its software model[3]

References:

1. WiSE Laboratory, Cyber-Physical Systems, 2017, https://www.jaist.ac.jp/is/labs/lim-lab/research.php
2. Dollham, D., NIST Cyber-Physical Systems Public Working Group: Draft CPS Framework, http://slideplayer.com/slide/9244570/
3. Bagher, B. , 2015, Big future for cyber-physical manufacturing systems, Design World, Sept. 23, http://www.designworldonline.com/big-future-for-cyber-physical-manufacturing-systems/

Introduction of Digital Reality and Smart Systems stream in MED and introduction of Digital Manufacturing Stream in MEME will enable SEPT to offer a holistic approach to training highly qualified personnel for various aspects of CPS.

Digital Reality stream will focus on virtual representation and interaction between humans and the cyber-physical systems. Smart Systems stream will focus on the analytical, inference, and decision-making capability of the cyber-physical systems

Digital Reality stream:
"Digital Reality represents the next digital transformation. It changes how we engage with technology, through augmented-, virtual-, and mixed-reality, 360 video, and immersive experiences that are at once intuitive and data-rich, and which put the human user at the center of design."
(https://www2.deloitte.com/us/en/pages/consulting/topics/digital-reality.html)

Mixed reality, augmented reality and virtual reality are currently $40+ Billion industry and are projected to be $200+ Billion industry by 2022, with applications ranging from architecture, medicine, engineering design, manufacturing systems operations to animated 3D immersive entertainment. Huge advances in these technologies have been led by the entertainment industry; these advances and further enhancements are rapidly finding their applications in all walks of life. MR/AR/VR are essential technologies used to develop self-driving cars (Google autonomous car has travelled 20 Million miles in the VR space as a part of its training), architecture, anatomy and surgery, training in operation of complex machinery (e.g. aircraft, industrial plants), games, movies, and many other fields). Such explosive growth will require tens of thousands of highly competent personnel over the next decade. It will be an outstanding career opportunity for students enrolling in this stream.

MED program has introduced courses which enable its students to develop capabilities to design virtual spaces and objects moving within them. Already approved are the following courses in digital reality (mixed reality/augmented reality/virtual reality):
- SEP 6CG3: Fundamentals of computer graphics and animation development
- SEP 6VE3: Visual effects and animation production technology
- SEP 714: Workflow management for animated prototypes
- SEP 715: Rendering techniques
- SEP 791: Augmented Reality, Virtual Reality and Mixed Reality
- SEP 792: Interactive applications utilizing GPU's for real-time projects

Introduction of a stream in Digital Reality will give the students an opportunity to formally designate their specialization in the field.


Smart Systems stream:
Introduction of the Smart Systems stream in MED will enable its students to develop expertise in a rapidly growing field and embark on careers to design and implement systems for applications in many aspects of our lives.

8.Two quarter courses in cloud computing
> Cloud computing is becoming abundantly available. Many software systems and applications rely on the cloud to store data and increasingly to carry out computations. Introduction of these two course will provide the students with capabilities to design systems which rely on cloud capabilities.

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

September 1, 2019

**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):**

# Engineering Design, M. Eng. Design

Innovative new designs and the ability to improve performance of existing systems have become a basis for a competitive advantage in the marketplace. Innovativeness, performance, environmental sustainability, safety, usability, desirability, viability and efficiency are integral parts of the requirements in the design of industrial products, healthcare products, large-scale systems, or software solutions. Within this complex set of constraints, successful engineers and engineering managers must be able to lead transformation of an idea to a complete design by working in interdisciplinary teams and with stakeholders. The Master of Engineering Design program provides its participants with technical expertise and leadership capabilities required to innovate and to lead technically-oriented organizations. ~~Strong emphasis on applying design competencies to real world problems  is accomplished via industrially motivated and supported projects.~~

~~The M.Eng. Design program emphasizes development of competencies in:~~

- ~~Leadership, collaboration, and management skills for diverse teams.~~

- ~~Design thinking and innovations methodologies.~~

- ~~Engineering disciplines leading to breakthrough design and operation of systems in:~~

- ~~process industries (refining, chemicals, specialty chemicals, pharmaceuticals, power, oil and gas production, and similar)~~

- ~~manufacturing of industrial and consumer products~~

- ~~health, wellness and aging device and software solutions, and~~

- ~~augmented reality and virtual reality~~
    - The M.Eng. Design program emphasizes development of competencies in Design Thinking and innovations methodologies, as well as leadership, collaboration, and management skills to lead diverse teams.
    -

- These competencies are combined with advanced technologies to enable design and implementation of solutions which integrate digital reality with the physical world to deliver solutions for daily living or for complex IT or industrial systems.
- The following stream are currently offered in the Program:
- - Product Design: Design Thinking approach to development of products and services.
- - Digital Reality: Design of augmented-, virtual-, and mixed-reality immersive experiences.
- - Smart Systems: Design and integration of AI, robotics, automation, and physical systems
- - Process and Production Systems: engineering design and operations improvement

# Admission

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In addition to the general requirements for entry into a graduate program in Engineering, students must hold a four-year engineering undergraduate degree or equivalent, with 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. Students with a degree in Science, Technology or Mathematics will also be considered.

Strong letters of recommendation are also required. Applicants will be required to complete an online interview.

Professional work experience will be highly desirable.

Candidates may be enrolled on a full- or part-time basis. Full-time students will complete the degree in twelve consecutive months of study. Students are admitted for September . Part-time students will normally be expected to complete the program in two years and one term (28 months).

Prospective applicants who did not attain the required standing in their undergraduate degree, but who have at least four (4) years of relevant work experience, should discuss their situation with the Program Lead. If the experience is deemed sufficient, the Program Lead may then recommend a live interview. Evidence of ability to do graduate work will still be required. (See Sections 2.1.1 Admission Requirements for Master's Degree and 2.1.5 Admission of

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

~~Candidates will be required to complete eight half courses, plus full time students must successfully complete SEP 771 Part I and II and SEP 772 . Part time students are also required to complete SEP 772 .~~

~~The curriculum has five main components:~~

~~**1. Leadership and management capabilities** courses that will enable M.Eng. Design graduates to deal with complex situations in the work environment, to lead teams, to manage projects, and innovate~~

~~**2. Interdisciplinary engineering courses** in product design, project management, and risk management.~~

~~**3. Core technical courses** that provide expert knowledge in targeted technical areas.~~

~~**4. Elective courses** that allow students to acquire broader expertise in the technical areas which are at the centre of their studies.~~

~~**5. An industrially oriented project** that solves complex problems requiring synthesis of knowledge from several disciplines and presenting the students with an opportunity to develop the solution in an industrial environment.~~

The curriculum has three main components:

**1. Professional development** courses that will enable M.Eng. Design graduates to deal with complex situations in the work environment, to lead teams, and to manage projects.
**2. Courses relevant to the selected stream:** some course are mandatory for a given stream, while others are elective.
**3. An M.Eng. project** that requires synthesis of knowledge from various disciplines

## Digital Reality Stream

Graduates from Digital Reality stream develop competencies required to work on MR/AR/VR applications in e.g. autonomous vehicles, games design, entertainment, architecture, medicine, etc.,. All candidates will complete a project and an optional co-op with an organization which develops products in the digital reality space.

The following courses are required to be completed by the candidates:
- SEP 700 M.Eng. Project in Engineering Design Part I
- SEP 700 M.Eng. Project in Engineering Design Part II
- 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 772 / Innovation Studio
- SEP 760 Design Thinking

Five courses from the following list must be completed by the candidates:
- SEP 6CG3 Fundamentals of computer graphics and animation development
- SEP 6VE3 Visual effects and animation production technology
- SEP 714 Workflow management for animated prototypes
- SEP 715 Rendering techniques
- SEP 791 Augmented Reality, Virtual Reality and Mixed Reality
- SEP 792 Interactive applications utilizing GPU's for real-time projects

## Process and Production Systems Stream

Master of Engineering Design program in the field of Process and Production Systems provides advanced competencies for engineers and supervisors typically working in:

- Process Design
- Advanced Process Control
- Plant Operations
- Process Industry Oriented R&D
- Control Systems and Software

**Required Courses**

Candidates are required to take the following:

- SEP 700 / M.Eng. Project in Engineering Design Part I
- SEP 700 / M.Eng. Project in Engineering Design Part II
- SEP 760 / Design Thinking
- SEP 771 / W Booth School of Engineering Practice and Technology Practitioner's Forum Part I (seminar series: (Ffull-time students only)
- SEP 771 / W Booth School of Engineering Practice and Technology Practitioner's Forum Part II (seminar series: ( (Ffull-time students only)
- SEP 772 / Innovation Studio
- SEP 773 / Leadership for Innovation
- OR
- SEP 6EL3 / Leading Innovation
- SEP 773 / Leadership for Innovation or SEP 6EL3 / Leading Innovation

## Electives

Candidates are required to select four half courses which should be selected from graduate courses offered by departments within the Faculty of Engineering. Candidates are required to have their elective course selection approved by the Associate Director of Graduate Studies in SEPT.

Recommended include, however not limited to the following:

- SEP 751 / Process Design and Control for Operability
- SEP 6C03 / Statistics for Engineers
- SEP 752/ CHEM ENG 753 System Modelling and Optimization
- SEP 754 / Process Design and Integration for Minimal Environmental Impact
- CHEM ENG 752 / Optimization of Chemical Processes
- CHEM ENG 765 / Multivariate Statistical Methods for Big Data Analysis and Process Improvement or /SEP 767 Multivariate Statistical Methods for Big Data Analysis and Process Improvement
- COMP SCI 6F03 / Distributed Computer Systems
- CAS 704 / Embedded, Real-Time Software Systems
- CAS 703 / Software Design
- CHEM ENG 6E03 / Digital Computer Process Control
- ECE 732 / Non-linear Control Systems
- ECE 771 / Algorithms for Parameter and State Estimation

- ECE 772 / Neural Networks and Learning Machines

# Product Design Stream

Innovative and creative systems, solutions, and product designs are emphasized through design in a collaborative design studio environment. The interdisciplinary nature of the program enables its participants to work on a variety of design work, such as industrial machinery, consumer products, automotive, etc.

The following course requirements need to be fulfilled by the candidates:

## Mandatory Courses

Candidates are required to take the following:

- SEP 700 / M.Eng. Project in Engineering Design Part I
- SEP 700 / M.Eng. Project in Engineering Design Part II
- SEP 760 / Design Thinking
- 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 772 / Innovation Studio
- SEP 773 / Leadership for Innovation
- OR
- SEP 6EL3 / Leading Innovation

## Electives

Candidates are required to take four half courses which should be selected from graduate courses offered by departments within the Faculty of Engineering. Candidates are required to have their elective course selection approved by the Associate Director of Graduate Studies in SEPT.

Strongly recommended:

- SEP 757 / Hardware Prototyping Tools and Methods
- Or OR
- SEP 758 / Prototyping Tools (Mobile Applications)

- SEP 761 / Human Centred Design

Other recommended elective include:

SEP 714 Fundamentals of animation workflow

SEP 715 Production rendering techniques

SEP 791 / Augmented Reality, Virtual Reality and Mixed Reality

SEP 792 / GPU Intensive applications for real-time projects

# Smart Systems Stream

Graduates from Smart Systems stream develop competencies required to develop and integrate machine learning and AI applications (e.g. image recognition, fault detection, natural language processing, time varying pattern forecasting, etc.) with software and hardware components comprising intelligent devices and systems.

The following courses are required to be completed by the candidates:
- SEP 700  M.Eng. Project in Engineering Design Part I
- SEP 700  M.Eng. Project in Engineering Design Part II
- SEP 771  W Booth School of Engineering Practice and Technology Practitioner's Forum Part I (seminar series; Ffull-time students only)
- SEP 771  W Booth School of Engineering Practice and Technology Practitioner's Forum Part II (seminar series; Ffull-time students only)
- SEP 760 Design Thinking

At least three half courses from the following list must be completed by the candidates:

- SEP 786# AI and Machine Learning fundamentals
- SEP 787# Machine Learning: Classification Models
- SEP 788# Neural Networks and Development Tools
- SEP 789# Deep Learning and its Applications
- SEP 7xx# Cloud computing architecture and platforms (pending approval)
- SEP 7xy# Machine Learning and AI on Cloud Platforms (pending approval)
- SEP 780 Advanced Robotics and Automation
- SEP 767 Multivariate Statistical Methods for Big Data Analysis and Process Improvement
- MECH ENG 761Industrial Components, Networks, and Interoperability

# Engineering Design Courses

Courses identified with an asterisk (*) are half courses. Courses identified with a pound (#) sign are quarter courses.

## Courses

1. Add new course "SEP 7xx#" Cloud computing architecture and platforms
2. Add new course "SEP 7xy#" Machine Learning and AI on Cloud Platforms

**CONTACT INFORMATION FOR THE RECOMMENDED CHANGE:**

Name:  Vladimir Mahalec   Email:  mahalec@mcmaster.ca       Extension:  26386  Date submitted:  Feb. 15, 2019

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

SGS/2013

**McMaster University** **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 **ALL** changes involving degree program requirements/procedures.  **All** sections of this form **must** be completed. <br><br> 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). <br><br> 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 | WBooth School of Engineering Practice and Technology | |
| --- | --- | --- |
| **NAME OF PROGRAM and PLAN** | Master of Engineering in Manufacturing Engineering (MEME) | |
| **DEGREE** | **Master of** Engineering **Manufacturing Engineering** | |
| **NATURE OF RECOMMENDATION** *(PLEASE CHECK APPROPRIATE BOX)* <br><br> **Is this change a 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 IN THE GRADUATE CALENDAR** | x | **EXPLAIN:** <br><br> Description in the Calendar is modified to describe changes in the program. | | | |
| **OTHER CHANGES** | x | **EXPLAIN:** <br><br> 1.  Two streams which offer specialization, in addition to option to enroll in the program without choosing specialization. <br> 2.  Require that the MEME students take one professional development course related to manufacturing. | | | |

**DESCRIBE THE <u>EXISTING</u> REQUIREMENT/PROCEDURE:**

1. MEME program has no specific streams.
2. MEME students can select manufacturing related courses.
3. In November 2018 the description of the program length was changed from 1.5 year to 1 year to reflect the fact that most students complete the program in 12 months.
4. The following exists in the calendar:

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

5. The following text exists:
   This is a seminar series presented by guest speakers, invited by the School, of relevance to all Centres. All full-time students are required to take this course in both fall and winter terms. Course grades are either 'pass' or 'fail'. In order to pass the course the student must attend a minimum of 80% of the seminars.
6. Mech Eng 760 & Mech Eng 761 exist in the calendar
7. Manufact 701, Project exists in the calendar
8. Under additional information for SEP 771, it is indicated that SEP 771 needs to be taken in the fall and winter terms.

---

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

1. **<u>Introduction of Automotive stream and Digital Manufacturing stream</u>**

   It is proposed that the students in MEME can either enroll to study the broad area of manufacturing (as it is now) or can choose to enroll in Automotive stream of Digital Manufacturing stream. This will enable them to specialize in their studies by focusing on specific areas which are also aligned with the areas of strength of WBooth SEPT.

**<u>Automotive</u> stream** students must complete at least three of the following courses:
- MECH ENG 760 Electric Drive Vehicles
- SEP 6AT3 Conceptual Design of Electric and Hybrid Vehicles
- MECH ENG 754 Management and Control of Electric Vehicle Batteries
- MECH ENG 755 Advanced Control of Internal Combustion Engines
- MECH ENG 761 Industrial Components, Networks, and Interoperability
- SEP 780 Advanced Robotics and Automation
- MECH ENG 735 Additive Manufacturing

**Digital Manufacturing stream** students must complete at least four half courses from the following list:
- MECH ENG 735 Additive Manufacturing
- MECH ENG 761 Industrial Components, Networks, and Interoperability
- MECH ENG 729 Manufacturing Systems
- MECH ENG 759 Hardware Prototyping Tools and Methods
- CHEM ENG 786# AI and Machine Learning fundamentals
- CHEM ENG 787# Machine Learning: Classification Models
- CHEM ENG 788# Neural Networks and Development tools
- CHEM ENG 789# Deep Learning and its Applications
- MANUF 710 System Analysis and Simulation
- SEP 780 Advanced Robotics and Automation

2. **Require that the students take one professional development course related to manufacturing.**
   MEME students are required to take one of the following courses:
   - SEP 725 Project Management for Today's Business Environment
   - SEP 760 Design Thinking
   - SEP 773 Leadership for Innovation

3. **Program length is 1.5. years and motivated students can complete the program in 12 months.**
4. **Add (seminar series) after part I and II of the course.**
5. **Replace centres with M. Eng. Programs at the School**
6. **Cross list Mech Eng 760 & 761 with W Booth**
7. **Split Manufact 701, Project to Part I & II with 3 units each**
8. **Remove this from the calendar**
9. **Add "stream specific requirements are listed above" under optional courses.**
10. **Add additional optional courses under Chem Eng, Mech Eng**

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**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?):**

1. <u>**Introduction of Automotive stream and Digital Manufacturing stream**</u>

During the last several decades there has been a growing recognition that effective engineers combine professional capabilities (e.g. communicate, lead, assess risks, manage projects, etc.) with technical expertise to deliver solutions in the world which is becoming technically more complex. Since 1970s there have been a rapid advancement in computing hardware and software which have provided a basis for a continuing development of novel manufacturing methods, better decision making (based on models) in management of manufacturing processes and the supply chain, as well as paradigm-altering computing and communication devices which we encounter in our daily lives. This new manufacturing paradigm started with stand-alone computer applications which paved the way for the integration of manufacturing equipment with computer-based decision-making applications. Presently a vast change is underway in all aspects of the societal infrastructure and the way we live. Physical world, real space within which we reside is being increasingly augmented by its representation in digital software models, data and inferences engines which reside in various forms of computing systems. New domains of knowledge, which are being continuously discovered in this digital world, require new capabilities for engineering graduates. Cyber-physical world is becoming a reality (Fig. 1) which is comprised of a variety of cyber-physical systems (see examples in Fig. 2). Cyber-physical systems (Fig. 3) are characterized by a physical asset (e.g. machine) and its digital twin, i.e. a model which mimics the behavior of the physical asset. They are comprised of integrated, hybrid networks of cyber and engineered physical elements. They are co-designed and co-implemented to create adaptive and predictive systems which respond in real time to enhance the performance. Let us note that the Internet of Thing (IoT) is a subset of cyber-physical systems, since its prevailing definition limits it to the physical assets, not including their digital models.
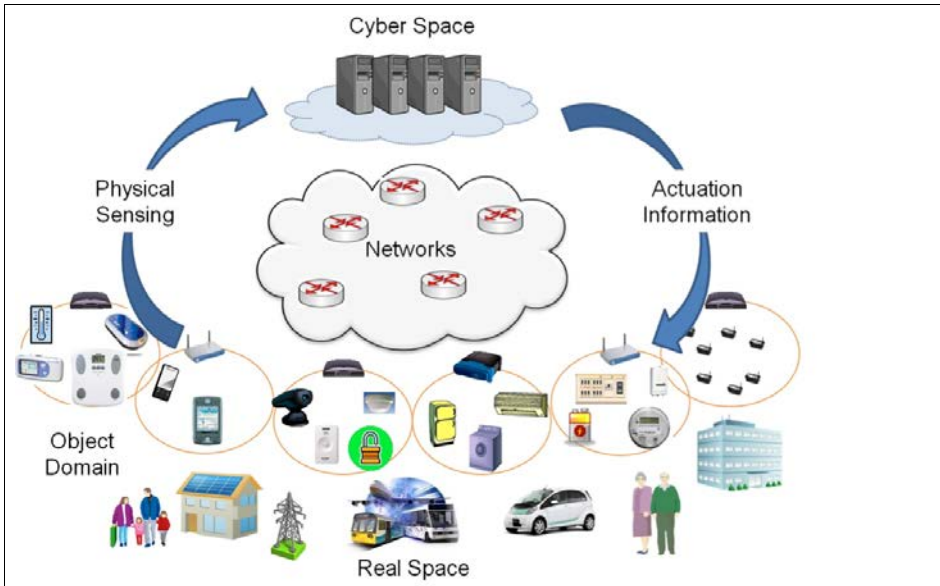
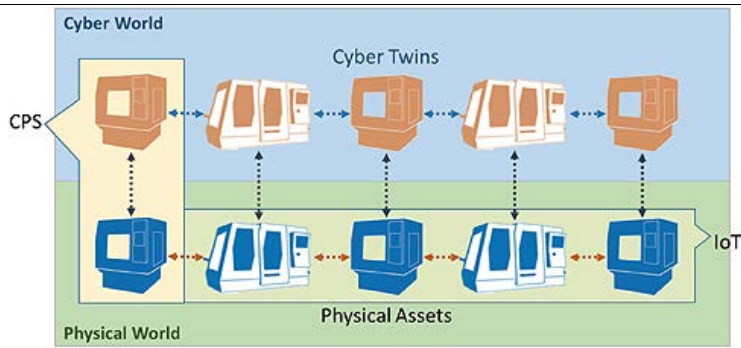Fig. 1. Cyber physical world[1]



Fig. 2. Cyber-physical systems[2]

Fig. 3. A cyber physical system is comprised of a physical asset and its software model[3]

A new era of integrated cyber-physical manufacturing systems has begun, requiring engineering graduates to have professional and technical capabilities which have not been associated with the traditional engineering disciplines. In other words, an engineer ready for the 21st century needs to have the knowledge and capabilities required to understand, design, and improve systems which are comprised of humans interacting with both physical and cyber components. Terms "Industry 4.0" and "Digital Manufacturing" have been coined to designate such manufacturing systems (Fig. 4).
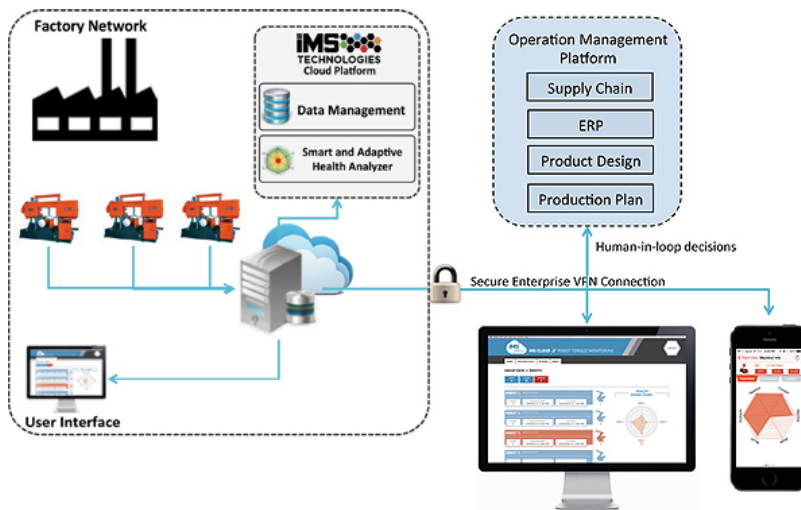


Fig. 4 Operators and manager interact with CPSs through a variety of interfaces by utilizing analytical data and models stores in the cloud. [3]

Proposed Digital Manufacturing stream addresses a dramatic change which has started to transform manufacturing, while Automotive stream focuses on the area of manufacturing strength in Ontario.

**2. Require that the students take one professional development course related to manufacturing.**
Successful manufacturing organizations employ personnel who can not only carry out engineering calculations but also are able to analyze the needs which are to be met by the product (Design Thinking), can organize and manage projects and can lead teams. Requiring that the students take one courses dealing with these topics will improve the capabilities of our graduates.

**3. Complete the program in 12 months.**
Keeping the MEME program length as 1.5 years and stating that motivated students can complete in 12 months provides more flexibility in managing the program.

4. To better identify that this is a seminar series and not an actual course.
5. Centres no longer exist in our school, therefore, the calendar description is inaccurate.
6. Cross listing these courses will allow W Booth more flexibility to offer SEP courses during the summer since most departments do not offer graduate courses in the summer
7. This will allow flexibility as to when students can enroll in these courses
8. Students can enroll in these courses in the fall, winter or spring/summer terms, depending on their admission term, therefore, this is incorrect
9. Providing clarity in the calendar
10. Provide students with more optional course selections

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

September 1, 2019.

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

No.

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**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 one and half year12 month program for full time and 28 months for part time students aimed at highly motivated students seeking advanced training in the broad area of Manufacturing. Motivated students enrolled full time may complete the program in 12 months. Students design their own program of studies by selecting (with approval of their academic advisor) courses of interest to them or can enroll in one of the following streams: (i) Automotive or (ii) Digital Manufacturing. Application for

admission to the program may be 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 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 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 8 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 six 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).

Manufacturing Engineering Courses

Students are required to successfully complete a compulsory full year project course and six graduate half courses (or equivalent), of which at least four must be 700 level and up to two

600 level courses approved by the program lead. Two of these 600 level courses can be taken in the final undergraduate year at McMaster for graduate credit with the approval of the Associate Dean of Graduate Studies.

Students who opt to complete the program on a course basis must complete eight courses in consultation with the program lead.

Half courses are marked with an asterisk (*) and quarter courses are marked with a pound sign (#). Students should note that not all option courses are offered every year.

# Courses

## Compulsory Courses:

- MANUF 701 / Project, Part I (Please note that this course is only required for students in the project option of the program.)
- MANUF 701/ Project, Part II (Please note that this course is only required for students in the project option of the program).
- 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)


**Automotive** stream students must complete at least three of the following courses:

- MECH ENG 760 Electric Drive Vehicles
- SEP 6AT3 Conceptual Design of Electric and Hybrid Vehicles
- MECH ENG 754 Management and Control of Electric Vehicle Batteries
- MECH ENG 755 Advanced Control of Internal Combustion Engines
- MECH ENG 761 Industrial Components, Networks, and Interoperability
- SEP 780 Advanced Robotics and Automation
- MECH ENG 735 Additive Manufacturing


**Digital Manufacturing** stream students must complete at least four half courses from the following list:

- MECH ENG 735 Additive Manufacturing
- MECH ENG 761 Industrial Components, Networks, and Interoperability
- MECH ENG 729  Manufacturing Systems
- MECH ENG 759 Hardware Prototyping Tools and Methods

- CHEM ENG 786# AI and Machine Learning fundamentals
- CHEM ENG 787# Machine Learning: Classification Models
- CHEM ENG 788# Neural Networks and Development tools
- CHEM ENG 789# Deep Learning and its Applications
- MANUF 710 System Analysis and Simulation
- SEP 780 Advanced Robotics and Automation

## Additional Information for SEP 771

This is a seminar series presented by guest speakers, invited by the School, of relevance to all CentresM.Eng programs at the School. All full-time students are required to take theseis courses in both fall and winter terms. Course grades are either 'pass' or 'fail'. In order to pass the course the student must attend a minimum of 80% of the seminars.

## Optional Courses

Students will select any combination from the list below totaling six half courses for the project-based or eight half courses for the course-based option, of which a maximum of two half courses can be taken at the 600 level. Two of these 600 level courses can be taken in the final undergraduate year for graduate credit. Stream specific requirements are listed above. Other manufacturing-related courses may be substituted with permission of the Program lead. Note that not all courses are offered every year.

### Chemical Engineering

- CHEM ENG 6B03 / Polymer Reaction Engineering
- CHEM ENG 6C03 / Statistics for Engineers
- CHEM ENG 6E03 / Digital Computer Process Control
- CHEM ENG 6X03 / Polymer Processing
- CHEM ENG 6Z03 / Interfacial Engineering
- CHEM ENG 742 / Membrane Based Bioseparations
- CHEM ENG 752 / Optimization of Chemical Processes
- CHEM ENG 753 / Systems Modeling and Optimization
- CHEM ENG 761 / Multivariable, Stochastic and Adaptive Control of Chemical Processes
- CHEM ENG 764 / Process Control Design
- CHEM ENG 765 / Multivariate Statistical Methods for Big Data Analysis and Process Improvement
- CHEM ENG 770 / Selected Topics in Polymer Science and Engineering
- CHEM ENG 772 / Polymer Rheology

- CHEM ENG 773 / Advanced Concepts of Polymer Extrusion
- CHEM ENG 774 / Advances in Polymeric Materials
- CHEM ENG 782 / Biopharmaceuticals

- CHEM ENG 786# AI and Machine Learning fundamentals
- CHEM ENG 787# Machine Learning: Classification Models
- CHEM ENG 788# Neural Networks and Development tools
- CHEM ENG 789# Deep Learning and its Applications

- CHEM ENG 791 / Nanotechnology in Chemical Engineering

## Materials Science and Engineering

- MATLS 6C03 / Modern Iron and Steelmaking
- MATLS 6D03 / Corrosion
- MATLS 6H03 / Thin Film Science and Engineering
- MATLS 6I03 / Sustainable Manufacturing Processes
- MATLS 6P03 / Properties of Polymeric Materials
- MATLS 6T03 / Properties and Processing of Composites
- ENGINEER 6T04 / Materials Selection in Design and Manufacturing
- MATLS 754 / Fracture Mechanics
- MATLS 755 / Deformation of Crystalline Solids
- MATLS 760 / Electronic Materials
- MATLS 771 / Principles of Heterogeneous Kinetics
- MATLS 780 / Metallic and Non-metallic Coatings

## Mechanical Engineering

- MECH ENG 6B03 / Topics in Product Development
- MECH ENG 6K03 / Robotics
- MECH ENG 6L03 / Industrial Design
- MECH ENG 6Q03 / Mechanical Vibrations
- MECH ENG 6T03 / Finite Element Applications
- MECH ENG 6Z03 / CAD/CAM/CAE
- MECH ENG 702 / Advanced Dynamics of Machines
- MECH ENG 705 / Advanced Finite Element Analysis
- MECH ENG 710 / Machine Tool Analysis
- MECH ENG 714 / Solidification Processing
- MECH ENG 724 / Solid and Surface Modeling Techniques
- MECH ENG 728 / Manufacturing Processes I
- MECH ENG 729 / Manufacturing Systems
- MECH ENG 734 / Theory of Plasticity

- MECH ENG 735 Additive Manufacturing

- MECH ENG 738 / Manufacturing Processes II

- MECH ENG 743 / Advanced Mechatronics
- MECH ENG 751 / Advanced Mechanical Engineering Control Systems
- MECH ENG 752 / Advanced MEMS Fabrication and Microfluidics
- MECH ENG 759 Hardware Prototyping Tools and Methods

- MECH ENG 760 Electric Drive Vehicles

## A Maximum of two courses can be selected from the following list:

### Electrical Engineering

- ECE 710 / Engineering Optimization
- ECE 732 / Non-linear Control Systems
- ECE 736 / 3D Image Processing and Computer Vision
- ECE 744 / System-on-a-Chip (SOC) Design and Test: Part I - Methods
- ECE 772 / Neural Networks and Learning Machines
- 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
- CAS 771 / Introduction to Big Data Systems and Applications

### W Booth School of Engineering Practice and Technology

- SEP 6AS3 / Advanced System Components and Integration
- SEP 6AT3 / Conceptual Design of Electric and Hybrid Electric Vehicles
- SEP 6DM3 / Data Mining
- SEP 735 / ADDITIVE MANUFACTURING
- SEP 748 / Development of Sustainable Communities
- SEP 751 / Process Design and Control for Operability
- SEP 752 / Systems Modeling and Optimization
- SEP 754 / Process Design and Integration for Minimal Environmental Impact

- SEP 780 / Advanced Robotics and Automation

Manufacturing Engineering

- MANUF 6RM3 / Robot Mechanics and Mechatronics
- MANUF 710 / SYSTEM ANALYSIS SIMULATION

**CONTACT INFORMATION FOR THE RECOMMENDED CHANGE:**


Name:  V. Mahalec          Email:  mahalec@mcmaster.ca  Extension:  26386     Date submitted:  2019/02/15


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


SGS/2013

**McMaster University**

**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 **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 | Chemical Engineering |
|---|---|
| **NAME OF PROGRAM and PLAN** | Masters of Applied Science/Doctor of Philosophy |
| **DEGREE** | |

| NATURE OF RECOMMENDATION *(PLEASE CHECK APPROPRIATE BOX)* |
|---|
| **Is this change a result of an IQAP review? ☒ Yes ☐ No** |

| CREATION OF NEW MILESTONE ☐ |
|---|

| CHANGE IN ADMISSION REQUIREMENTS | | X | CHANGE IN COMPREHENSIVE EXAMINATION PROCEDURE | | CHANGE IN COURSE REQUIREMENTS | |
|---|---|---|---|---|---|---|
| **CHANGE IN THE DESCRIPTION OF A <u>SECTION</u> IN THE GRADUATE CALENDAR** | | | **EXPLAIN:** | | | |
| **OTHER CHANGES** | **EXPLAIN:** | | | | | |

1

**DESCRIBE THE <u>EXISTING</u> REQUIREMENT/PROCEDURE:**

The minimum English proficiency requirements for the Department of Chemical Engineering are:
- TOEFL (Test of English as a Foreign Language): 88 overall; valid for 2 years
- IELTS (International English Language Testing System): 7.0 overall with a minimum of 5.5 in each of the four components (reading, writing, speaking, listening); valid for 2 years

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

The minimum English proficiency requirements for the Department of Chemical Engineering will become:
- TOEFL (Test of English as a Foreign Language): <u>91</u> overall <u>with a minimum of 20 in each of the four components (reading, listening, speaking, writing)</u>; valid for 2 years
- IELTS (International English Language Testing System): 7.0 overall with a minimum of <u>6.0</u> in each of the four components (reading, writing, speaking, listening); valid for 2 years

**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?):**

One of the 'areas for enhancement or improvement' identified in our most recent IQAP review (April 9th & 10th 2018) was to related to the language requirements; the committee identified that "The Faculty of Engineering should encourage all graduate programs in the Faculty to address the matter of language proficiency requirements" and that "the resolution of this issue as a top priority".

The changes to the minima per category are particularly noteworthy in terms of ensuring that incoming graduate students have a complete set of language skills relevant to their success. These are now the second highest language requirements in Canada for Chemical Engineering – only second to the University of Toronto.

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

May 2020

**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):**

**CONTACT INFORMATION FOR THE RECOMMENDED CHANGE:**

Name:  David Latulippe    Email:  latulippe@mcmaster.ca  Extension:  24011  Date submitted:  Mar 1st, 2019

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

SGS/2013

**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: |
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| 1.    This form must be completed for **ALL** changes involving degree program requirements/procedures.  **All** sections of this form **must** be completed. |
| 2.    An electronic version of this form (must be in MS WORD **not** PDF) should be emailed to the Assistant Secretary, School of Graduate Studies (cbryce@mcmaster.ca). |
| 3.    A representative from the department is **required to attend** the Faculty Curriculum and Policy Committee meeting during which this recommendation for change in graduate curriculum will be discussed. |

| DEPARTMENT | Computing and Software |
|---|---|
| **NAME OF PROGRAM and PLAN** | Master of Applied Science (MASc) in Software Engineering |

| DEGREE | PhD |
|---|---|

| NATURE OF RECOMMENDATION *(PLEASE CHECK APPROPRIATE BOX)* |
|---|
| **Is this change a 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 IN THE GRADUATE CALENDAR** | x | | | | |
| **OTHER CHANGES** | | | | | |

**DESCRIBE THE EXISTING REQUIREMENT/PROCEDURE:**

Currently, there is no milestones regarding technical presentation and seminar attendance.

**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 strengthen technical oral/written presentation skills
- To broaden exposure to computing related research
- To facilitate group learning and cultivate better research culture

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

Sept, 2019

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

Full-time only

**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):**

1. Departmental seminar attendance
   - Minimum 4 times or 50% per academic year, whichever is lower during the first year of their program
2. Technical presentation
   - Students are required to participate the graduate poster & demo competition that is held annually once in the first two years of their program

Exception upon approval of petition, to be submitted by the student, explaining the reasons that attendance was not feasible by supervisor & graduate advisor.

**CONTACT INFORMATION FOR THE RECOMMENDED CHANGE:**

Name:  Rong Zheng       Email: rzheng    Extension: 22891    Date submitted:  March 1, 2019

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** | Computing and Software |
|---|---|
| **NAME OF PROGRAM and PLAN** | Master of Science in Computer Science |

| **DEGREE** | **PhD** |
|---|---|

| **NATURE OF RECOMMENDATION** *(PLEASE CHECK APPROPRIATE BOX)* |
|---|
| **Is this change a 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 IN THE GRADUATE CALENDAR** | x | | | | |
| **OTHER CHANGES** | | | | | |

| **DESCRIBE THE EXISTING REQUIREMENT/PROCEDURE:** |
|---|
| Currently, there is no milestones regarding technical presentation and seminar attendance. |

**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 strengthen technical oral/written presentation skills
- To broaden exposure to computing related research
- To facilitate group learning and cultivate better research culture

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

Sept, 2019

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

Full-time only

**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):**

1. Departmental seminar attendance
   - Minimum 4 times or 50% per academic year, whichever is lower during the first year of their programs
2. Technical presentation
   - Students are required to participate the graduate poster & demo competition that is held annually once in the first two years of their programs

Exception upon approval of petition, to be submitted by the student, explaining the reasons that attendance was not feasible by supervisor & graduate advisor.

**CONTACT INFORMATION FOR THE RECOMMENDED CHANGE:**

Name: Rong Zheng       Email: rzheng    Extension: 22891   Date submitted: March 1, 2019

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

SGS/2013

**McMaster University** **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 **ALL** changes involving degree program requirements/procedures. **All** sections of this form **must** be completed. |
| 2. An electronic version of this form (must be in MS WORD **not** PDF) should be emailed to the Assistant Secretary, School of Graduate Studies (cbryce@mcmaster.ca). |
| 3. A representative from the department is **required to attend** the Faculty Curriculum and Policy Committee meeting during which this recommendation for change in graduate curriculum will be discussed. |

| DEPARTMENT | Computing and Software |
|---|---|
| **NAME OF PROGRAM and PLAN** | PhD in SE and CS |

| DEGREE | PhD |
|---|---|

| NATURE OF RECOMMENDATION *(PLEASE CHECK APPROPRIATE BOX)* |
|---|
| **Is this change a 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 IN THE GRADUATE CALENDAR** | x | | | | |
| **OTHER CHANGES** | | | | | |

**DESCRIBE THE EXISTING REQUIREMENT/PROCEDURE:**

Currently, there is no milestones regarding technical presentation and seminar attendance.

**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 strengthen technical oral/written presentation skills
- To broaden exposure to computing related research
- To facilitate group learning and cultivate better research culture

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

Sept, 2019

**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):**

- Departmental seminar attendance
    - Minimum 4 times or 50% per academic year, whichever is lower during *each year* of the first two year of their programs
- Technical presentation
    - Students are required to participate the graduate poster & demo competition *once* that is held annually once in the first two years of their programs

Exception upon approval of petition, to be submitted by the student, explaining the reasons that attendance was not feasible by supervisor & graduate advisor.

**CONTACT INFORMATION FOR THE RECOMMENDED CHANGE:**

Name:  Rong Zheng        Email:  rzheng    Extension:  22891    Date submitted:  March 1, 2019

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

SGS/2013

**McMaster University**

**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 **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 | Mechanical Engineering | |
| --- | --- | --- |
| NAME OF PROGRAM and PLAN | Program: **GENPH** Plan: **MECHENPHD** | |
| DEGREE | Doctor of Philosophy in Mechanical Engineering | |
| **NATURE OF RECOMMENDATION** *(PLEASE CHECK APPROPRIATE BOX)*<br><br>**Is this change a 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** IN THE GRADUATE CALENDAR | EXPLAIN: | |
| OTHER CHANGES | EXPLAIN: | |

**DESCRIBE THE <u>EXISTING</u> REQUIREMENT/PROCEDURE:**

Students who transfer from the master's program (GENMC) to the doctoral program (GENPH) in mechanical engineering *without* completing their master's degree are required to complete a total of six (6) half courses, at least five of which should be at the 700 level.

Applicants admitted directly to the doctoral program (GENPH) in mechanical engineering *without* the prior completion of a master's degree are required to complete a total of six (6) half courses, at least five of which must be at the 700 level.

---

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

Recommended change for those who transfer from the master's program (GENMC) to the doctoral program (GENPH) in mechanical engineering *without* completing their master's degree: completion of four (4) half courses at the 700 level in total.

Recommended change for those who are admitted directly to the doctoral program (GENPH) in mechanical engineering *without* the prior completion of a master's degree: completion of four (4) half courses at the 700 level in total.

---

**RATIONALE FOR THE RECOMMENDED CHANGE (How does the requirement fit into the department's program and/or tie to existing Program Learning Outcomes from the program's IQAP cyclical review?):**

The recommended changes are expected to be conducive to optimal research efforts and timely thesis completion in the following ways:

1. increase the time available for research efforts (and shorten time to degree completion) by reducing time devoted to the completion of coursework; and
2. ensure that the courses used to fulfill the degree requirements are the most essential, relevant, and beneficial to the student's research.

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

**September 1, 2019.**

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

(The Department of Mechanical Engineering Handbook 2018-2019)

**Program start date prior to September 1, 2015**: Four half courses (50% MECHENG) at the 700 level are the minimum required beyond the Master's degree. Only courses delivered by departments in the School of Engineering and Applied Sciences (listed here: http://www.eng.mcmaster.ca/departments.html) do not require a petition to count toward degree requirements; however, they cannot replace a MECHENG course.

**Program start date between September 1, 2015 and September 1, 2019**: The minimum course requirements for this degree are two half-courses at the 700 level beyond the Master's degree, OR six half-courses, at least five of which should be at the 700 level, beyond the Bachelor's degree. Half of your courses are required to have "MECHENG" in the course code. Only courses delivered by departments in the School of Engineering and Applied Sciences (listed here: http://www.eng.mcmaster.ca/departments.html) do not require a petition to count toward course requirements; however, they cannot replace a MECHENG course.

**Program start date after September 1, 2019**: The minimum course requirements for this degree are two half-courses at the 700 level beyond the Master's degree; OR four half-courses at the 700 level beyond the Bachelor's degree. Half of your courses are required to have "MECHENG" in the course code. Only courses delivered by departments in the School of Engineering and Applied Sciences (listed here: http://www.eng.mcmaster.ca/departments.html) do not require a petition to count toward course requirements; however, they cannot replace a MECHENG course.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):**

(Academic Calendars, School of Graduate Studies>Faculty of Engineering>Mechanical Engineering, Ph.D.)

The minimum course program for this degree is at least foursix half courses, at the 700-level at least five of which should be at the 700-level, beyond the Bachelor's degree, or two half courses at the 700-level, beyond the Master's degree. A Ph.D. candidate is also required to pass a Comprehensive Examination designed to test their breadth of knowledge and the ability to synthesize and integrate ideas. A candidate must complete a thesis which embodies the results of original research and mature scholarship. The general University requirements for the thesis and oral defense will apply. In addition, all full-time graduate students are required to successfully complete MECH ENG 758 "Graduate Seminars in Mechanical Engineering." For further details see the MECH ENG 758 course description.Students holding a Bachelor's degree should enroll at the Master's level. Excellent students may be transferred to the Ph.D. program without completing their Master's degree.

**Direct Entry to Ph.D. program with only a B.Sc./B.Eng.**
Outstanding students* with a B.Sc./B.Eng. may be admitted directly into the Ph.D. program if they:
1. hold a B.Sc./B.Eng. in Mechanical Engineering with a minimum average of A- (McMaster 10/12) in the last two years of study;
2. submit a strong statement of research interest; and
3. garner a strong letter of support from the proposed supervisor.
*International students will need either: (i) a minimum TOEFL score of 100/120 with a writing score greater than or equal to 27 (out of 30); or (ii) a minimum IELTS score of 7.5 with a writing score greater than or equal to 7.0 (out of 9).

**Transfer from M.A.Sc. program to Ph.D. program without completion of the M.A.Sc. degree**
Outstanding students in the M.A.Sc. program may transfer to the Ph.D. program if they:
1. complete a minimum of TWO terms of study in the M.A.Sc. program;
2. complete a minimum of TWO half courses at the 700 level with a minimum average of A- (McMaster 10/12);
3. complete their M.A.Sc. supervisory meeting and receive a rating of EXCELLENT on their report; and
4. garner a strong letter of support from their supervisor.

(The Department of Mechanical Engineering Handbook 2018-2019)

**Program start date prior to September 1, 2015**: Four half courses (50% MECHENG) at the 700 level are the minimum required beyond the Master's degree. Only courses delivered by departments in the School of Engineering and Applied Sciences (listed here: http://www.eng.mcmaster.ca/departments.html) do not require a petition to count toward degree requirements; however, they cannot replace a MECHENG course.
**Program start date** : The minimum course requirements for this degree are two half-courses at the 700 level beyond the Master's degree, OR six half-courses, at least five of which should be at the 700 level, beyond the Bachelor's degree. Half of your courses are required to have "MECHENG" in the course code. Only courses delivered by departments in the School of Engineering and Applied Sciences (listed here: http://www.eng.mcmaster.ca/departments.html) do not require a petition to count toward course requirements; however, they cannot replace a MECHENG course.
sd

**CONTACT INFORMATION FOR THE RECOMMENDED CHANGE:**

Name: **Chan Ching**      Email: **chingcy@mcmaster.ca**      Extension: **24998**      Date submitted: <u>**11**</u>~~8~~-**Mar-19**

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

SGS/2013

**McMaster University**

**School of Graduate Studies**

1280 Main Street West
Hamilton, Ontario, Canada
L8S 4L8

Phone 905.525.9140
Ext. 23679
http://graduate.mcmaster.ca

To      :      Graduate Council

From   :      Christina Bryce
              Assistant Graduate Secretary

_____

At its meeting on March 19th and via e-ballot on March 27th, 2019 the Faculty of Health Sciences Graduate Policy and Curriculum Committee approved the following recommendations.

Please note that these recommendations were approved by the Executive Committee of the Faculty of Health Sciences.

**For Approval of Graduate Council**

- **Health Research Methodology**
    1. **Change to Comprehensive Exam Procedure**

- **Health Science Education**
    1. **Change to Calendar Copy**

- **Nursing**
    1. **Change to Course Requirements**

- **Physiotherapy**
    1. **Change to Calendar Copy**

- **Rehabilitation Science**
    1. **Change to Course Requirements and Calendar Copy**

**For Information of Graduate Council:**

- **Graduate Diploma in Clinical Epidemiology**
    1. **Change to Course Description**
        - 771 Fundamentals of Health Research and Evaluation Methods (Online)
    2. **Change to Course Requisites**
        - 772 Introduction to Research Methods for Randomized Controlled Trials (Online)
        - 773 Systematic Review Methods (Online)
        - 774 Introduction to Biostatistics (Online)

- **Health Science Education**
  1. **Course Cancellation**
     - 709 Thesis

- **Nursing**
  1. **New Course**
     - 704 Communication in Serious Illness

- **Occupational Therapy**
  1. **New Course**
     - 763 Foundational Knowledge 3
  2. **Change to Course Descriptions**
     - 616 Wellness, Health and Occupation: Foundational Knowledge 1
     - 626 Foundational Knowledge 2

- **Physiotherapy**
  1. **New Courses**
     - 701 PAEDIATRIC PHYSIOTHERAPY ELECTIVE
     - 702 ADVANCED ORTHOPEDIC ASSESSMENT AND TREATMENT
     - 703 WOMEN'S HEALTH
     - 797 Physiotherapy Theory and Practice Remediation
  2. **Change to Course Description**
     - 798 Physiotherapy Theory and Practice Remediation

- **Public Health**
  1. **Change to Course Descriptions**
     - 705 Master of Public Health Seminar Series Year One
     - 708 Master of Public Health Seminar Series Year Two

- **Rehabilitation Science**
  1. **Change to Requisite**
     - 735 Rehabilitation Research Project
  2. **Change to Course Title and Description**
     - 774 Exploring Research Methods

# RECOMMENDATION FOR CHANGE IN GRADUATE CURRICULUM - FOR CHANGE(S) INVOLVING DEGREE PROGRAM REQUIREMENTS / PROCEDURES / MILESTONES

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

| DEPARTMENT | Health Research Methods, Evidence, and Impact | | |
|---|---|---|---|
| **NAME OF PROGRAM and PLAN** | Health Research Methodology Graduate Program- PhD Stream | | |
| **DEGREE** | HRM PhD | | |
| **NATURE OF RECOMMENDATION** *(PLEASE CHECK APPROPRIATE BOX)* <br><br> **Is this change a result of an IQAP review? ☐ Yes ☒ No** | | | |
| **CREATION OF NEW MILESTONE ☐** | | | |
| **CHANGE IN ADMISSION REQUIREMENTS** | | **CHANGE IN COMPREHENSIVE EXAMINATION PROCEDURE** | X | **CHANGE IN COURSE REQUIREMENTS** | |
| **CHANGE IN THE DESCRIPTION OF A SECTION IN THE GRADUATE CALENDAR** | | **EXPLAIN:** | |
| **OTHER CHANGES** | **EXPLAIN:** | | |

**DESCRIBE THE <u>EXISTING</u> REQUIREMENT/PROCEDURE:**


<u>**Ph.D. SEMINAR**</u>
Students are expected to attend and participate in the Ph.D. seminar for 10 months including the oral defence sessions.

They will be expected to submit a 3 to 4 page (double-spaced) commentary following instructions provided by the seminar presenter in the pre-meeting materials, and may select the sessions of greatest interest or of greatest flexibility given individuals' schedules. *The content of the commentary should be scholarly and should provide a thoughtful overview of the primary readings, linking them together in an interesting way and following the instructions provided by the seminar presenter. **A summary of the content of the provided readings is not sufficient.***

**Students are expected to complete at least 2 commentaries before Christmas. Students responsible for an in-seminar presentation on the session topic may not submit a commentary for those sessions. If the student fails to accomplish this the Chair of the BCE and the student's dissertation supervisor will be notified.**

Students are expected to prepare 1 in-seminar presentation in an area of interest where they wish to gain expertise and breadth of exposure. Students will not prepare presentations within their fields of Independent Study or their dissertation fields. (As well students cannot submit a commentary for the session they present at). Students will use the initial list of papers identified by the faculty instructor for the relevant field session as the basis **for a more advanced study in the area,** addressing a related question or topic of interest. To complete this advanced study, **the student will be expected to identify additional, relevant readings**, and prepare a 15-minute presentation (with electronic aids). Students may draw on the Seminar Presenter or their seminar colleagues to assist in the identification of additional sources, or search strategies, but they are expected to complete the in-seminar presentation and commentaries independently. If students are concerned about potential overlap between their presentation and the presentation content of the faculty Seminar Presenter, they should communicate with the faculty member in advance of the session.

<u>**INDEPENDENT STUDY**</u>
The student is responsible for identifying an appropriate Independent Study topic and supervisor, in consultation with her/his dissertation supervisor (and supervisory committee, where appropriate). The student is also responsible for identifying an appropriate Member-at-Large, with the support of the Independent Study supervisor. The student should prepare a written plan of study that provides an overview of the Independent Study project, outlining any meeting schedule and the expectations for the Independent Study (including outlining the form and extent of a progress report that should be prepared to allow the supervisor to submit an Interim report on the student's progress to the Board of Comprehensive Exams in December).

The plan of study should be agreed to by the Independent Study supervisor, and together with a copy of the student's curriculum vitae and a brief description of their present and any previous thesis topics, should be submitted to the Administrative Assistant for distribution to the Board of Comprehensive Examinations by May 1. The plan of study should be reviewed and amended by the student and supervisor as necessary during the academic year, especially if major changes are made in the expectations (the Board should be notified of any such revisions).

**Student Interim Progress Report**

Students will submit in early December an interim progress report on their Independent Study to their Independent Study Supervisor and to the Administrative Assistant for distribution to the Board of Comprehensive Examinations. The nature and extent of the report will have been pre-specified in the student's plan of study, agreed to in the independent study proposal (and modified as required). The Independent Study Supervisor will use this report to provide an interim grade (worth 10% of the final Independent Study mark). In addition to the progress report, which is circulated to the Independent

Study Supervisor, the student is invited to submit any further comments relating to their progress in the Seminar or the Independent Study to the Board, in confidence.

### Interim Assessment from Independent Study Supervisor

The Independent Study Supervisor will submit an interim assessment of the student to the Administrative Assistant for distribution to the Board of Comprehensive Examination Chairs in mid-December. This assessment will consist of an evaluation of the student's interim progress report, which will be transmitted to the student directly, and any other comments on the student's progress of which the Board should be made aware, in confidence.

### Interim Assessment from the Comprehensive Seminar Coordinators

The Seminar Coordinators will submit a brief report to the Board of Comprehensive Examinations in mid-December regarding the progress of all students participating in the comprehensive examination seminar. The report will provide marks-to-date from written commentaries and in-Seminar presentations, and an assessment of attendance. Where appropriate, the Seminar Coordinators will also append any comments about students' progress of which the Board should be made aware (e.g., attendance problems).

### Interim Report

It is hoped that the interim evaluations will be helpful to the student in monitoring their own progress, and that they may indicate to the Board and the student whether there are problems arising with the process such that students who are not performing satisfactorily will improve their efforts to ensure success. Where appropriate, the Board will request a meeting with the student and/or Independent Study supervisor to discuss issues arising and to guide the parties to work toward a successful outcome.

### Student Final Report

Students will submit the final report on their Independent Study to their Independent Study Supervisor, Member at Large and to the Administrative Assistant, mid-to-late-March

### Final Report

The Board of Comprehensive Examinations will provide official notification to students of their final grade shortly after the completion of the student's oral defence. This final grade will summarize the marks the students have received throughout the process, as reported by the Seminar coordinators, the Independent Study supervisor, and the other evaluators.

## EVALUATION OF THE EXAMINATION

The final mark on the comprehensive examination sums the individual components of the examination. The Ph.D. seminar is worth 50% of the total grade and the Independent Study is worth 50%. The student must, however, receive a mark of at least a B- (70%) in each component to be considered to have passed the exam.

### Ph.D. SEMINAR
The Ph.D. Seminar is worth 50% of the final mark for the Comprehensive Exam. The mark for the Ph.D. seminar will be arrived at from a summation of the following components:
- Attendance: Students will receive 0.5% of their seminar grade for each session attended to a maximum of 10%
    - Assessed by Seminar Coordinators
- Commentaries: Students will receive a total of 60% of their final mark for preparing 4, 3-4 page (double-spaced) commentaries: 15% each = 60%.
    - Marked by the Seminar presenter
- Presentations: Students will receive a total of 30% of their final mark for providing 1 in-seminar presentation = 30%.

- o Students will be assessed on the quality of their presentation (electronic aids are expected) and their ability to facilitate discussion in a subsequent question and answer period.
- o Students will be assessed by the Seminar Presenter for that session

**INDEPENDENT STUDY**

The Independent Study is worth 50% of the final mark for the Comprehensive Exam. The mark for the Independent Study will be arrived at from a summation of the following components:

- Interim progress report: Students will receive 10% of their Independent Study mark from the assessment provided by their Independent Study supervisor of their interim progress report. Without a progress report a mark cannot be assigned.
- Final paper: Students will receive 50% of their Independent Study mark from the final paper. The final paper should review the student's Independent Study in sufficient depth to allow an expert in the field to evaluate the student's competence. The paper should be ***no more than 20-pages in length***, ***double-spaced***, excluding appendices such as graphs, figures, tables, references and glossaries of abbreviations.
  - o Students will be assessed by their Independent Study supervisor and the designated Member-at-Large
  - o The final mark for the Independent Study paper will average the marks of the two evaluators
- Oral Defence: Students will receive 40% of their Independent Study mark from the oral defence. Students are expected to prepare a 20 minute presentation, covering the material reviewed in the paper (the use of electronic aids is expected), and to orally explain and defend the material for a further 40 minutes.
  - o Students will be assessed by their Independent Study supervisor and the designated Member-at-Large

The final mark for the oral defence will average the marks of the two evaluators

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

There will be two content components to the PhD Comprehensive Exam in the HRM program. They are the **Seminar Series** and the **Independent Study (IS)** project. The Board of Comprehensive Examiners (BCE) will provide the oversight for these activities.

**Ph.D. SEMINAR**

The seminar series will consist of 10 biweekly seminars running from September to April during the 2nd academic year. The seminars will cover the following health research methodology topics (not in chronological order): (1) knowledge translation (2) research ethics (3) clinical epidemiology (4) HTA (5) clinical trials, (6) population health and health services research (focus on non-experimental designs) (7) qualitative and mixed methods (8) health policy (9) biostatistics and (10) philosophy of science. Each of these seminars will be led by an expert in that area.

Two weeks in advance of these seminars the students will be provided with 4 large comprehensive (breadth, not depth) questions on the seminar topic. Students will be given a bibliography of resources which they can use to assist in answering the questions. Students are expected to come to the seminars prepared to answer (discuss orally) the four questions.

In the first hour of the seminar the faculty facilitator may choose to provide a brief presentation on the topic. Then the students will break into four small groups and each group will be assigned to discuss amongst themselves one of the four questions from the answers that they have prepared. The seminar leader will move between the groups and act as a resource to help resolve disagreements. (The student composition of the four groups will change with each seminar.)

In the second and third hour a representative from each group will present to the other students in attendance the answer for the assigned question, which will be followed by an open discussion that will involve all the students. Thirty minutes will be allocated for each of the four questions. The seminar leader will also be available to respond to questions from the students in order to help the students better understand the topic. Participation in the seminar will have a grade value of 1% (10 seminars will account for 10% of the final seminar grade). There will be no written assignment for the seminar series.

In April of the 2$^{nd}$ academic year three or four dates will be set aside for a one hour oral examination that will be based upon the materials identified in the seminar questions. Each student will be asked to respond to three of the possible 40 seminar questions that had been previously discussed in the seminar series. The three questions will be chosen at random. The student will have 15 minutes for their response per question with an additional 5 minutes for any follow-up questions that the examiners may have. There will be two examiners from the BCE. The expectation for the depth of the exam will be at the level of general knowledge of health research methodology and is NOT intended to reflect a level of knowledge from an expert in that particular HRM field. Each question will count for 30% of the student's seminar series grade, and each examiner's mark will contribute to 50% of the student's oral exam mark.

## INDEPENDENT STUDY

**The independent study portion of the Comprehensive Examination process will not change in any substantial manner.** As before, the student will submit her/his IS proposal in May of their 1$^{st}$ academic year after it has been approved and signed by their IS supervisor and the IS member-at-large. The BCE will review the proposal and determines if it is acceptable for approval (end of May). The student will meet with the two advisors in September then begin the project. After meeting(s) with the member-at-large in September, the student may not have any further contact with the member-at-large. An interim report is due in December (and is evaluated by the IS supervisor - 10% of the IS mark).

Consistent with the current format, the final written report will be submitted in March and will be evaluated by the IS supervisor and the member-at-large, for 50% of the mark (i.e., 25% per evaluator). Students will receive 40% of their Independent Study mark from the oral defence. Students are expected to prepare a 20 minute presentation, covering the material reviewed in the paper (the use of electronic aids is expected), and to orally explain and defend the material for a further 40 minutes. The oral presentation will remain unchanged except that **the evaluators will be two members of the BCE instead of the IS supervisor and member-at-large.**

### EVALUATION OF THE COMPREHENSIVE EXAMINATION

The final mark on the comprehensive examination is sum the individual components of the examination. The Ph.D. seminar is worth 50% of the total grade and the Independent Study is worth 50%. The student must receive a mark of at least a B- (70%) **in each component** to be considered to have passed the exam.

Where there are two faculty members evaluating the same student (whether oral or written components) the default position is a 50% weighting for each person marking but if there is more than a 10% difference in their final score then they should discuss the marks and see if they can bring them closer together (they do not need to find one common mark that would apply to both of them, but a difference of 10% or less is required). If that is not attainable, then the student would be entitled to a re-run if they so requested, otherwise the original scores will stand.

## Ph.D. SEMINAR

The Ph.D. Seminar is worth 50% of the final mark for the Comprehensive Exam. The mark for the Ph.D. seminar will be arrived at from a summation of the following components:

- Attendance: Students will receive 1% of their seminar grade for each session they participate in for a total of 10%
  - Assessed by Seminar Coordinators
- Oral examination: Each student will answer three questions from the pool of 40 questions that had been discussed in the seminar series. The three questions will be selected at random. The student will have 15 minutes to give their response per question with an additional 5 minutes for any follow-up questions that the examiners may have. Each question will have a value of 15% per examiner for a total of 90%
  - Assessed by two members of the BCE

## INDEPENDENT STUDY

The Independent Study is worth 50% of the final mark for the Comprehensive Exam. The mark for the Independent Study will be arrived at from a summation of the following components:

- Interim progress report: Students will receive 10% of their Independent Study mark from the assessment provided by their Independent Study supervisor of their interim progress report. Without a progress report a mark cannot be assigned.
- Final paper: Students will receive 50% of their Independent Study mark from the final paper. The final paper should review the student's Independent Study in sufficient depth to allow an expert in the field to evaluate the student's competence. The paper should be *no more than 20-pages in length*, *double-spaced*, excluding appendices such as graphs, figures, tables, references and glossaries of abbreviations.
  - Students will be assessed by their Independent Study supervisor and the designated Member-at-Large (final mark will be the average of the two evaluators)
- Oral Defence: Students will receive 40% of their Independent Study mark from the oral defence. Students are expected to prepare a 20 minute presentation, covering the material reviewed in the paper (the use of electronic aids is expected), and to orally explain and defend the material for a further 40 minutes.
  - Students will be assessed by two members of the BCE (final mark will the average of the two evaluators)

The final mark for the PhD Comprehensive Exam is 50% for the IS project and 50% for seminar series. Students must pass ($\geq$70%) BOTH of these components. A student who fails either the IS project or the seminar series will be given a second opportunity to pass by re-writing their IS report or by participating in a second oral exam, respectively.

**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 impetus for change came from the feedback received from students and faculty regarding the comprehensive exam. Over the preceding 3 years feedback indicated that the independent study project was highly valued and should not change. On the other hand, the seminar series had serious problems. Students felt that the

presentation format did not enhance their knowledge particularly for students who were familiar with the topic of discussion. Second, the seminar commentaries that they had to produce were also not a sufficient educational exercise and that the feedback they received was insufficient to provide a meaningful learning experience. The various faculty members who agreed to conduct the seminars were disappointed with the student engagement and were very dissatisfied with the requirement to grade 12-15 papers following the seminars. The latter resulted in a paucity of faculty comments and feedback to the students in the papers that they had submitted. To be responsive to these criticisms the Comprehensive Examination process needed to make changes in the seminar series while maintaining the successful format used for the independent study project.

The purpose of the Comprehensive Examination is to ensure that all students have a broad knowledge in health research methodology at the PhD level. Changing the format of the seminars to cover these topics using a series of questions (problems) will ensure that the curriculum goals are adequately addressed and the oral exam is an opportunity for the student to demonstrate that they have a sufficient level of knowledge across a spectrum of health research methodologies. To minimize the anxiety associated with an oral exam, all students will have been exposed to the questions and the answers through their preparation and attendance in the seminar series.

The only change to the IS project was in the selection of examiners for the oral presentation. This was done in response to faculty feedback. It was felt to be redundant and limiting in perspective to have the same faculty who help the student conduct the project and who evaluated the written report, to also evaluate the oral presentation of the report. It would be advantageous to have faculty with perhaps a different perspective and "fresh eyes" to evaluate the oral presentation of the IS project.

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

2019-2020 Comprehensive Examination

---

**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):**

These changes will not affect what is already written in the graduate calendar. Nevertheless, we would like to take this opportunity to improve upon the wording used in the graduate calendar regarding the comprehensive exam.

"Candidates must also:

Pass a Comprehensive Examination between twelve and twenty-four months following the start of doctoral studies at McMaster. The examination will test the student's ability to acquire, evaluate critically, handle and conceptualize major issues in the discipline ~~of health research or~~methodology ~~sub-discipline to which their field of research belongs~~. They must ~~include~~ demonstrate at least two of the aforementioned ~~areas~~ abilities in a projec~~t that is~~ ~~not~~ ~~but these cannot be related~~ directly related to the~~ir~~ thesis~~They will also demonstrate a command of general knowledge in the field of health research methodology.~~topic."

---

**CONTACT INFORMATION FOR THE RECOMMENDED CHANGE:**

| Name:  Mitch Levine      Email:  levinem@mcmaster.ca      Extension:  ext 20210 Date submitted:  March 7 2019 |
| --- |
|  |

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

SGS/2013

**SCHOOL OF GRADUATE STUDIES**

## RECOMMENDATION FOR CHANGE IN GRADUATE CURRICULUM - FOR CHANGE(S) INVOLVING DEGREE PROGRAM REQUIREMENTS / PROCEDURES / MILESTONE

| 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 | Graduate Program in Health Science Education | |
|---|---|---|
| NAME OF PROGRAM and PLAN | Master of Science in Health Science Education – Changing Graduate Calendar for additional thesis information | |
| DEGREE | **Master of Science** | |

| NATURE OF RECOMMENDATION *(PLEASE CHECK APPROPRIATE BOX)* |
|---|
| **Is this change a result of an IQAP review? No** |

| CREATION OF NEW MILESTONE ☐ | | | | | |
|---|---|---|---|---|---|
| CHANGE IN ADMISSION REQUIREMENTS | | CHANGE IN COMPREHENSIVE EXAMINATION PROCEDURE | | CHANGE IN COURSE REQUIREMENTS | |
| CHANGE IN THE DESCRIPTION OF A <u>SECTION</u> IN THE GRADUATE CALENDAR | x | EXPLAIN: To have HS EDUC 709 (Thesis course) dropped as a course | | | |
| OTHER CHANGES | EXPLAIN: | | | | |

**DESCRIBE THE <u>EXISTING</u> REQUIREMENT/PROCEDURE:**

Thesis-based option students must:

- Complete, with at least a B- standing
    - The program's four required courses (two quarter courses and two half courses)
    - One graduate approved elective (half course)

| | o   A thesis |
|---|---|

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

Add another bullet point that thesis students are required to enrol into SGS 701 as a placeholder when they are not taking any other courses.

**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?):**

Health Science Education is a program with 2 streams (scholarly paper/course based and thesis) with both streams having full time and part time options.  The majority of students in the course-based stream enroll in the part time option as it is appealing given that they are clinical professionals who are trying to earn a degree while balancing professional responsibilities.

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

September 2019

**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):**

Thesis-based option students must:

- Complete, with at least a B- standing
    - o   The program's four required courses (two quarter courses and two half courses)
    - o   One graduate approved elective (half course)
    - o   Enrol into SGS 701 in each term that no other courses are being taken
    - o   A thesis

**CONTACT INFORMATION FOR THE RECOMMENDED CHANGE:**

Name:  Lawrence Grierson     Email:  griersle@mcmaster.ca         Extension:  22738     Date submitted:  01/21/18

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

SGS/2013

**McMaster University**

**SCHOOL OF GRADUATE STUDIES**

# RECOMMENDATION FOR CHANGE IN GRADUATE CURRICULUM - FOR CHANGE(S) INVOLVING DEGREE PROGRAM REQUIREMENTS / PROCEDURES / MILESTONES

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

<table>
<tr><td>**DEPARTMENT**</td><td colspan="3">Nursing Graduate Program</td></tr>
<tr><td>**NAME OF PROGRAM and PLAN**</td><td colspan="3">**Masters of Science Nursing – Thesis**</td></tr>
<tr><td>**DEGREE**</td><td colspan="3">**Masters of Sciences**</td></tr>
<tr><td colspan="4">**NATURE OF RECOMMENDATION** *(PLEASE CHECK APPROPRIATE BOX)*

**Is this change a result of an IQAP review? ☐ Yes ☒ No**</td></tr>
<tr><td colspan="4">**CREATION OF NEW MILESTONE ☐**</td></tr>
<tr><td>**CHANGE IN ADMISSION REQUIREMENTS**</td><td>**CHANGE IN COMPREHENSIVE EXAMINATION PROCEDURE**</td><td>**CHANGE IN COURSE REQUIREMENTS**</td><td>x</td></tr>
<tr><td>**CHANGE IN THE DESCRIPTION OF A <u>SECTION</u> IN THE GRADUATE CALENDAR**</td><td>x</td><td colspan="2">**EXPLAIN:** Changes need to be made because this is a change to a required course</td></tr>
<tr><td>**OTHER CHANGES**</td><td colspan="3">**EXPLAIN:**</td></tr>
</table>

**DESCRIBE THE <u>EXISTING</u> REQUIREMENT/PROCEDURE:**

Currently students in Masters of Science by Thesis (Nursing) take HRM 721 Fundamentals of Health Research Evaluation as a required course.

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

Students in Masters of Science by Thesis (Nursing) will take NUR 715 Introduction to Quantitative Research Methods in Health Research instead of HRM 721.

**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?):**

NUR 715 is a required course for students in the Masters Course Based and Masters Course Based NP program, and is designed to help students develop an understanding of quantitative research methods. The course includes readings and learning activities geared to nursing and health care and is more relevant that HRM 721.

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

September 2019

**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):**

M. Sc. by Thesis

Candidates must be full-time or part-time and must:

~~HTH RS M 721/Fundamentals of Health Research and Evaluation Methods~~

NUR 715 /Introduction to Quantitative Research Methods in Health Research

**CONTACT INFORMATION FOR THE RECOMMENDED CHANGE:**

Name:  Nancy Carter        Email:  carternm@mcmaster.ca        Extension:  22259        Date submitted: February 25, 2019

|  |
| --- |
|  |

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

SGS/2013

**SCHOOL OF GRADUATE STUDIES**

# RECOMMENDATION FOR CHANGE IN GRADUATE CURRICULUM - FOR CHANGE(S) INVOLVING DEGREE PROGRAM REQUIREMENTS / PROCEDURES / MILESTONES

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<tr><td><b>DEPARTMENT</b></td><td colspan="2">Physiotherapy</td></tr>
<tr><td><b>NAME OF PROGRAM and PLAN</b><br><br>*797</td><td colspan="2">Physiotherapy Theory and Practice Remediation</td></tr>
<tr><td><b>DEGREE</b></td><td colspan="2" align="center"><b>Master of Science (Physiotherapy)</b></td></tr>
<tr><td colspan="3" align="center"><b>NATURE OF RECOMMENDATION <i>(PLEASE CHECK APPROPRIATE BOX)</i></b><br><br><b>Is this change a result of an IQAP review? ☐ Yes ☒ No</b></td></tr>
<tr><td colspan="3"><b>CREATION OF NEW MILESTONE ☐</b></td></tr>
<tr><td><b>CHANGE IN ADMISSION REQUIREMENTS</b></td><td><b>CHANGE IN COMPREHENSIVE EXAMINATION PROCEDURE</b></td><td><b>CHANGE IN COURSE REQUIREMENTS</b></td></tr>
<tr><td><b>CHANGE IN THE DESCRIPTION OF A <u>SECTION</u> IN THE GRADUATE CALENDAR</b></td><td>YES</td><td><b>EXPLAIN:</b><br><br>Currently the graduate calendar states that all courses are required with the exception of PHYSIOTH 798 or PHYSIOTH 799; However, this should be revised to include the addition of the new PHYSIOTH 797 remediation course. Proposed wording is below.</td></tr>
<tr><td><b>OTHER CHANGES</b></td><td colspan="2"><b>EXPLAIN:</b></td></tr>
</table>

**DESCRIBE THE <u>EXISTING</u> 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 tracked changes version of the calendar section affected if applicable):**

Students will complete university-based course work, Clinical Education courses (clinical placements), an elective course and a research project. All students will be required to complete the equivalent of 23 required half-courses and one Program approved elective half-course over the five (5) units of full-time study, across two study years (24 months). All courses are required, with the exception of, PHYSIOTH 797,  PHYSIOTH 798  or  PHYSIOTH 799, which are offered to students eligible for remediation.

**Formatted:** Tab stops: Not at  3.81 cm +  4.13 cm

**CONTACT INFORMATION FOR THE RECOMMENDED CHANGE:**

Name:  Sarah Wojkowski   Email:  wojkows@mcmaster.ca        Extension:  27814Date submitted:  March 25, 2019

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

SGS/2013

3

**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: |
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| DEPARTMENT | School of Rehabilitation Science | | |
|---|---|---|---|
| **NAME OF PROGRAM and PLAN** | Course-Based MSc in Rehabilitation Science | | |
| **DEGREE** | **Master of Science** | | |

| NATURE OF RECOMMENDATION *(PLEASE CHECK APPROPRIATE BOX)* | | | |
|---|---|---|---|
| **Is this change a result of an IQAP review? ☐ Yes ☒ No** | | | |

| CREATION OF NEW MILESTONE ☐ | | | |
|---|---|---|---|

| **CHANGE IN ADMISSION REQUIREMENTS** | | **CHANGE IN COMPREHENSIVE EXAMINATION PROCEDURE** | | **CHANGE IN COURSE REQUIREMENTS** | X |
|---|---|---|---|---|---|
| **CHANGE IN THE DESCRIPTION OF A SECTION IN THE GRADUATE CALENDAR** | X | **EXPLAIN:**<br><br>The section of the graduate calendar listing the program course requirements will be changed. | | | |
| **OTHER CHANGES** | | **EXPLAIN:** | | | |

**DESCRIBE THE <u>EXISTING</u> REQUIREMENT/PROCEDURE:**

Currently, all students enrolled in the MSc course-based rehabilitation science program are required to take 3 courses:

1. RS 705: Evaluating Sources of Evidence
2. RS 706: Measurement in Rehabilitation
3. RS 708: Reasoning and Decision-Making

---

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

We would like to replace the *RS 708: Reasoning and Decision-Making* required course with a methods course. Students will have the choice of taking either:

*RS 774: Quantitative Research Methods* OR *RS 772: Introduction to Qualitative Research*

**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 *RS 708 Reasoning and Decision-Making* course is helpful to students in rehabilitation science who are also clinicians/practitioners. However, knowledge and skills in research is becoming increasingly importance for all in rehabilitation science, irrespective of whether students are providing client care.

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

July 1, 2019

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

None.

**PROVIDE A DESCRIPTION OF THE RECOMMENDED CHANGE TO BE INCLUDED IN THE CALENDAR (please include a tracked changes version of the calendar section affected if applicable):**

Course Requirements

---

The following are the course requirements of the online Masters of Rehabilitation Science program. Students must complete, with at least a B- standing, a minimum of three (3) required graduate half courses and five (5) electives. The elective components of the program are customized to the learners needs and may consist of a course-based only option, or a scholarly/research paper option.

Mandatory Courses

The following are the core mandatory (online) courses:

- REHAB 705 / Evaluating Sources of Evidence

- REHAB 706 / Measurement in Rehabilitation

- REHAB 774 / Quantitative Research Methods OR REHAB 772 / Introduction to Qualitative Research REHAB 708 / Reasoning and Decision-Making

**CONTACT INFORMATION FOR THE RECOMMENDED CHANGE:**

Name:  Dr. Julie Richardson  Email:  jrichard@mcmaster.ca     Extension:  27811     Date submitted:  2019.01.30

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

SGS/2013

**McMaster University**

**School of Graduate Studies**

1280 Main Street West
Hamilton, Ontario, Canada
L8S 4L8

Phone 905.525.9140
Ext. 23679
http://graduate.mcmaster.ca

To      :      Graduate Council

From    :      Christina Bryce
              Assistant Graduate Secretary

_____

At its meeting on December 11th 2018, January 30th 2019 and via e-ballot on February 20th the Faculty of Humanities Graduate Curriculum and Policy Committee approved the following recommendations.

Please note that these recommendations were approved by the Faculty of Humanities at their meeting on March 28th, 2019.

**For Approval of Graduate Council:**
      **a. Cognitive Science of Language**
          **i. Change to Program Requirements**

      **b. French**
          **ii. Change to Calendar Copy**

      **c. Philosophy**
          **iii. Change to Program Requirements and Calendar Copy**

**For Information of Graduate Council:**

      **d. Communication and New Media**
          **iv. Change to Prerequisite**
             • 718 Critical Approaches to Communication Policy & Law

      **e. Cognitive Science of Language**
          **v. New Course**
             • 6NN3 Cognitive Neurolinguistics Laboratory

      **f. Communication Management**
          **vi. Change to Course Title and Description**
             • 742 Social Media and Mobility: Strategy and Management

      **g. English and Cultural Studies**
          **vii. New Course**
             • 734 Appropriation and Canadian Literature: History, Theory, Controversies

      **h. History**
          **viii. New Course**
             • 790 MA Independent Study

i. **Philosophy**

    ix. **Change to Requisites**
- 6A03 Early Modern Philosophy
- 6C03 Philosophy of Constitutional Law
- 6D03 Twentieth Century Analytic Philosophy
- 6F03 Issues in Contemporary Continental Philosophy
- 6I03 Medieval Philosophy
- 6K03 Seminar in Ancient Philosophy
- 6XX3 Intermediate Logic

    x. **Course Cancellations**
- 6B03 Seminar in Ethics

    xi. **New Course**
- 6YY3 Topics in Ethics

**McMaster University** **SCHOOL OF GRADUATE STUDIES**

# RECOMMENDATION FOR CHANGE IN GRADUATE CURRICULUM - FOR CHANGE(S) INVOLVING DEGREE PROGRAM REQUIREMENTS / PROCEDURES / MILESTONES

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| DEPARTMENT | Linguistics and Languages |
|---|---|
| **NAME OF PROGRAM and PLAN** | Cognitive Science of Language |
| **DEGREE** | PhD |

| NATURE OF RECOMMENDATION *(PLEASE CHECK APPROPRIATE BOX)* |
|---|
| **Is this change a result of an IQAP review?** ☐ Yes ☒ No |

| CREATION OF NEW MILESTONE ☒ |
|---|

| CHANGE IN ADMISSION REQUIREMENTS | | CHANGE IN COMPREHENSIVE EXAMINATION PROCEDURE | | CHANGE IN COURSE REQUIREMENTS | x |
|---|---|---|---|---|---|
| CHANGE IN THE DESCRIPTION OF A <u>SECTION</u> IN THE GRADUATE CALENDAR | | EXPLAIN: | | | |
| OTHER CHANGES | EXPLAIN: | | | | |

**DESCRIBE THE <u>EXISTING</u> REQUIREMENT/PROCEDURE:**

Presently, there is a requirement for PhD students to give a presentation at the annual Student Research Day conference in early April. This requirement is part of the PASS/FAIL participation in the COGSCIL 726 Cognitive Science of Language PhD Lecture Series that has to be taken in the first year of studies. The present proposal is to de-couple the presentation requirement from this course, because it comes too early for the students. Instead of being a first-year requirement, a public oral presentation should be a second-year milestone, to be passed at a point when the students have had time to do research work in the context of their thesis or a comprehensive project.

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

Students in the PhD program in Cognitive Science of Language will be required to give a presentation at the annual Student Research Day departmental conference at the end of the Winter term of their second year of study. The topic of the presentation can, but does not have to, be thesis-related. The requirement of giving a presentation will be removed from COGSCIL 726 Cognitive Science of Language PhD Lecture Series.

**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 milestone is intended to be a professionalization element in the program, providing experience of public communication of research ideas and presentation of research.

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

Academic year 2019–2020.

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

The presentation requirement will be removed from COGSCIL 726 Cognitive Science of Language PhD Lecture Series.

**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):**

Section: Milestones: Presentation at annual Student Research Day

Students in the PhD program in Cognitive Science of Language are required to give a presentation at the annual Student Research Day departmental conference at the end of the Winter term of their second year of study. The topic of the presentation can, but does not have to, be thesis-related.

**CONTACT INFORMATION FOR THE RECOMMENDED CHANGE:**

Elisabt Seia

Name:  Elisabet Service     Email:  eservic@mcmaster.ca        Extension:  21352          Date submitted:  Jan 15, 2019

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

SGS/2013

**SCHOOL OF GRADUATE STUDIES**

# RECOMMENDATION FOR CHANGE IN GRADUATE CURRICULUM - FOR CHANGE(S) INVOLVING DEGREE PROGRAM REQUIREMENTS / PROCEDURES / MILESTONES

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| DEPARTMENT | Linguistics and Languages | |
|---|---|---|
| **NAME OF PROGRAM and PLAN** | Cognitive Science of Language | |
| **DEGREE** | PhD | |

| NATURE OF RECOMMENDATION *(PLEASE CHECK APPROPRIATE BOX)* |
|---|
| **Is this change a 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 <u>SECTION</u> IN THE GRADUATE CALENDAR** | | **EXPLAIN:** | | | |
| **OTHER CHANGES** | **EXPLAIN:** | | | | |

**DESCRIBE THE <u>EXISTING</u> REQUIREMENT/PROCEDURE:**

There is presently no formal requirement for this milestone.

---

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

Students in the PhD program in Cognitive Science of Language are required to submit a thesis proposal to their supervisory committee in the first term of their second year (Term 4). The format of the proposal should follow the guidelines for a SSHRC research proposal for doctoral scholarships. Students will then give an oral presentation of the proposal to their committee. The committee records a successful written description and oral presentation as a passed milestone. This milestone should be passed during the second year of study.

---

**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 milestone is intended to help the student formulate their thesis goals at a sufficiently early point in time to allow better time planning and the setting of goals that support finishing on scheduled time for the program.

---

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

Fall term 2019.

---

**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):**

Section: Milestones: Thesis proposal

Students in the PhD program in Cognitive Science of Language are required to submit a thesis proposal to their supervisory committee in the first term of their second year (Term 4). The format of the proposal should follow the guidelines for a SSHRC research proposal for doctoral scholarships. They will also give an oral presentation of this proposal to their committee. The thesis proposal milestone should be passed during the second year of study.

**CONTACT INFORMATION FOR THE RECOMMENDED CHANGE:**

*Elisabt Seia*

_____

Name:  Elisabet Service     Email:  eservic@mcmaster.ca        Extension:  21352        Date submitted:  ~~Nov~~ Jan ~~19~~15, 201~~8~~9

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

**McMaster University**

## 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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| 1. This form must be completed for **ALL** changes involving degree program requirements/procedures. **All** sections of this form **must** be completed. |
| 2. An electronic version of this form (must be in MS WORD **not** PDF) should be emailed to the Assistant Secretary, School of Graduate Studies (cbryce@mcmaster.ca). |
| 3. A representative from the department is **required to attend** the Faculty Curriculum and Policy Committee meeting during which this recommendation for change in graduate curriculum will be discussed. |

| DEPARTMENT | French | | |
|---|---|---|---|
| **NAME OF PROGRAM and PLAN** | French | | |
| **DEGREE** | **M.A.** | | |

| NATURE OF RECOMMENDATION *(PLEASE CHECK APPROPRIATE BOX)* |
|---|
| **Is this change a result of an IQAP review?** ☐ Yes ☒ No |

| CREATION OF NEW MILESTONE ☐ |
|---|

| CHANGE IN ADMISSION REQUIREMENTS | n/a | CHANGE IN COMPREHENSIVE EXAMINATION PROCEDURE | n/a | CHANGE IN COURSE REQUIREMENTS | n/a |
|---|---|---|---|---|---|

| CHANGE IN THE DESCRIPTION OF A **SECTION** IN THE GRADUATE CALENDAR | x | **EXPLAIN:**<br><br>Section : description of the M.A. in French<br><br>• a note indicating that M.A. with Thesis is not an automatic choice and that it needs approval of the Departmental Graduate Committee<br>• a note indicating that all M.A. students must complete three (3) graduate half courses in Term 1<br>• reversing the order of description between M.A. with Thesis and M.A. with Project (starting with M.A. with Project) |
|---|---|---|

| OTHER CHANGES | EXPLAIN:<br><br>n/a |
|---|---|

**DESCRIBE THE <u>EXISTING</u> REQUIREMENT/PROCEDURE:**

Currently, both streams (M.A. with Project and M.A. with Thesis) are open to all incoming students.

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

The Department recommends that admission to the M.A. thesis stream not be automatic with admission to the M.A. program. After submitting a formal request, students will require approval in writing from their prospective supervisor, submission of a formal thesis proposal and approval by the Departmental Graduate Studies Committee.

Registration in three (3) graduate half courses in the Fall Term will be obligatory for all M.A. students, independent of the stream pursued.

**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?):**

Previous experience shows that M.A. with Thesis is not beneficial to all students. The Department of French offers a one-year M.A. program. During this time, some students find it difficult to produce relevant research material to write a coherent 100/120-page thesis in French, while participating in graduate courses and working as Teaching Assistants at the same time.

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

September 2019

**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):**

## M.A. Degree

The following ~~programs~~ streams are available for the M.A. in French on a full- or part-time basis. Admission requirements conform to the general University regulations. Applicants whose specialization is in linguistics, French or Francophone literatures and cultures, are encouraged to apply to the M.A. program. The M.A. degree normally requires a full year to complete. Registration in three (3) graduate half courses in Term 1 is mandatory for all M.A. students, independent of the stream pursued.

### ~~A. M.A. with Thesis~~

~~The candidate is required to:~~

## ~~B~~A. M.A. with Project

The candidate is required to:

1. obtain a grade of at least B- in each of six half courses, one of which, FRENCH 705 Introduction to Literary and Critical Theory, is mandatory. Exceptionally, after consultation with the Department, one graduate course at the 700-level may be taken outside of the Department in a subject related to student's research. With the approval of the Graduate Program Committee a student may select a course of study under: FRENCH 730 Lectures Dirigées.

2. write in French, under the supervision of a member of the Department of French, a Major Research Paper (MRP) normally amounting to 35-45 double-spaced typewritten pages (excluding bibliography). The paper must be on an approved subject, present solid research and critical analysis. The student must successfully defend this project at an oral examination conducted in French.

## B. M.A. with Thesis

Admission to the M.A. thesis stream is not automatic with admission to the M.A. program. By the end of the first term and after submitting a formal request, students will require approval in writing from their prospective supervisor, submission of a formal thesis proposal and approval by the Departmental Graduate Studies Committee.

The candidate is required to:

1. obtain a grade of at least B- in each of four half courses, one of which, FRENCH 705 Introduction to Literary and Critical Theory, is mandatory. Exceptionally, after consultation with the Department, one graduate course at the 700-level may be taken outside of the Department in a subject related to a student's research. With the approval of the Graduate Program Committee a student may also select a course of study under: FRENCH 730 Lectures Dirigées.

2. write, under the supervision of a member of the Department of French, a thesis that would normally amount to 80-120 double-spaced typewritten pages. The thesis should be on an approved subject, embodying the results of original research and showing independent critical judgment. The student must successfully defend this thesis at an oral examination normally conducted in French.

**CONTACT INFORMATION FOR THE RECOMMENDED CHANGE:**

Name:  Elzbieta Grodek     Email:   grodeke@mcmaster.ca     Extension:  24515     Date submitted:  Jan. 15, 2019

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

SGS/2013

**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 **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 | Philosophy | |
|---|---|---|
| **NAME OF PROGRAM and PLAN** | Philosophy PhD | |
| **DEGREE** | **PhD** | |

| NATURE OF RECOMMENDATION *(PLEASE CHECK APPROPRIATE BOX)* |
|---|
| **Is this change a 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 <u>SECTION</u> IN THE GRADUATE CALENDAR** | X | **EXPLAIN:** | | | |
| **OTHER CHANGES** | **EXPLAIN:** | | | | |

**DESCRIBE THE <u>EXISTING</u> REQUIREMENT/PROCEDURE:**

In order to be eligible to take the QE the student must complete all their course requirements and have achieved (by the end of the 20th month in the program) a GPA on courses taken towards the Ph.D. of at least 9.5.

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

In order to be eligible to take the QE, the student must have achieved (by the end of the 20th month in the program) a GPA on **five graduate** courses taken towards the PhD of at least 9.5.

**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 propose changing our current language to allow students to count their best five grades (in grad courses taken towards the PhD) for the purposes of this calculation. The main motivation for this change is to ensure a PhD student who receives an "F" for a grad course can still unambiguously meet the department's requirement of a GPA of 9.5 to be eligible to take the QE, assuming he or she takes an additional course to replace the failed course and receives otherwise good grades (and has the support of the department). The problem is that an F (note that any grade of C+ or lower in a grad course is officially recorded as an F) counts as a zero for the purposes of calculating a GPA, which makes a 9.5 overall average almost unattainable.

In effect, this enables a student to count their five best grades if they have taken more than the usual five courses. It would address the case of the student who fails a course, since in all such cases the student is asked to replace the failed course by taking another course.

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

2019-2020

**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 below

**CONTACT INFORMATION FOR THE RECOMMENDED CHANGE:**

Name:  Stefan Sciaraffa     Email:  chphilo@mcmaster.ca        Extension:  23467        Date submitted:  19-01-16

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

**Compehensive/Qualifying Exam:**

McMaster University regulations require that Ph.D. candidates take a Comprehensive Examination; in the Philosophy Department, this consists in candidates successfully completing Area Requirements and passing the Ph.D. Qualifying Exam (QE) by the end of their second year. Candidates are required to demonstrate to the Program Committee's satisfaction, a comprehensive knowledge of the central areas of philosophy by demonstrating competence in 5 areas of philosophy from the 2 lists below. No more than three areas may be selected from one list:

**Historical**
Ancient and Medieval Philosophy
Modern Philosophy 1600 to 1800
Continental Philosophy from 1800
British and American Philosophy from 1800

**Systematic**
Ethics and Value Theory
Metaphysics and Epistemology
Social, Political, and Legal Philosophy
Logic, Philosophy of Language, and Philosophy of Science.

Competence in a given area may be demonstrated by completing two graduate semester courses in the area with at least a B+ or equivalent in each course. Normally, the following are recognized as equivalents of two semester courses:

1. A three hour written examination on selected primary texts in the area. The examination may be repeated only once.

2. The candidate's MA thesis, if it was on a topic in the area.

3. The written portion of the QE on a topic in the area, conditional on its passing in the exam.

4. A published paper in the area, subject to approval by the Program Committee, provided that it appear in a peer-reviewed professional journal in philosophy (graduate-student edited journals are specifically excluded).

Candidates are required to successfully complete the QE in which a written dissertation proposal is presented and defended in an oral exam. In order to be eligible to take the QE the student must complete all their course requirements and have achieved (by the end of the 20th month in the program) a GPA on five graduate courses taken towards the Ph.D. of at least 9.5. Additionally, prior to taking the QE, some students may be required to demonstrate competence in one or more skills, which their supervisory committee decides, in consultation with the Ph.D. Advisor, is needed for their dissertation (e.g., a language other than English, logic).

**Dissertation**

Students must also write a satisfactory dissertation and defend it at an Oral Examination.

A detailed description of the doctoral program is available at
http://philos.humanities.mcmaster.ca/graduate-programs/ph-d-program/.

**McMaster University** **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:** |
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| DEPARTMENT | Philosophy | |
|---|---|---|
| **NAME OF PROGRAM and PLAN** | Philosophy PhD | |
| **DEGREE** | **PhD** | |

| **NATURE OF RECOMMENDATION** *(PLEASE CHECK APPROPRIATE BOX)* |
|---|
| **Is this change a 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 <u>SECTION</u> IN THE GRADUATE CALENDAR** | X | **EXPLAIN:** | | | |
| **OTHER CHANGES** | **EXPLAIN:** | | | | |

**DESCRIBE THE <u>EXISTING</u> REQUIREMENT/PROCEDURE:**

Competence in a given field may be demonstrated by completing two graduate (one term) courses with at least a B+ (or equivalent) in each course. Normally the following are recognized as equivalents of two one-term courses:

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

Competence in a given field may be demonstrated by completing two graduate (one term) courses with at least a B+ (or equivalent) in each course. **A Major Research Paper, completed by a student fast-tracking from the MA program, can count as the equivalent of a single course for this purpose at the discretion of the PhD Advisor.** Normally the following are recognized as equivalents of two one-term courses:

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**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 propose changing our current language to allow students who have fast-tracked into the PhD program to have their MRP count towards satisfying an area requirement, as the equivalent of taking a grad course in that area. The MRP was only introduced a few years back, together with the MA to PhD fast-track option, and it's not currently reflected in our rules about the area requirements.

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

2019-2020

---

**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 below

---

**CONTACT INFORMATION FOR THE RECOMMENDED CHANGE:**

Name:  Stefan Sciaraffa     Email:  chphilo@mcmaster.ca          Extension:  23467          Date submitted:  19-01-16

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

## Compehensive/Qualifying Exam:

McMaster University regulations require that Ph.D. candidates take a Comprehensive Examination; in the Philosophy Department, this consists in candidates successfully completing Area Requirements and passing the Ph.D. Qualifying Exam (QE) by the end of their second year. Candidates are required to demonstrate to the Program Committee's satisfaction, a

comprehensive knowledge of the central areas of philosophy by demonstrating competence in 5 areas of philosophy from the 2 lists below. No more than three areas may be selected from one list:

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1. A three hour written examination on selected primary texts in the area. The examination may be repeated only once.

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4. A published paper in the area, subject to approval by the Program Committee, provided that it appear in a peer-reviewed professional journal in philosophy (graduate-student edited journals are specifically excluded).

Candidates are required to successfully complete the QE in which a written dissertation proposal is presented and defended in an oral exam. In order to be eligible to take the QE the student must complete all their course requirements and have achieved (by the end of the 20th month in the program) a GPA on courses taken towards the Ph.D. of at least 9.5. Additionally, prior to taking the QE, some students may be required to demonstrate competence in one or more skills, which their supervisory committee decides, in consultation with the Ph.D. Advisor, is needed for their dissertation (e.g., a language other than English, logic).

**Dissertation**

Students must also write a satisfactory dissertation and defend it at an Oral Examination.

A detailed description of the doctoral program is available at
http://philos.humanities.mcmaster.ca/graduate-programs/ph-d-program/.

# McMaster University

**School of Graduate Studies**

1280 Main Street West
Hamilton, Ontario, Canada
L8S 4L8

Phone 905.525.9140
Ext. 23679
http://graduate.mcmaster.ca

To : Graduate Council

From : Christina Bryce
    Assistant Graduate Secretary

_____

At its meeting on February 5th, the Faculty of Science Graduate Curriculum, Policy, Admissions and Study Committee approved the following graduate curriculum recommendations.

Please note that these recommendations were approved at the Faculty of Science meeting on March 28th.

**For Approval of Graduate Council:**
   i.   **Biology**
        1. **Changes to Course Requirements, Program Requirements and Calendar Copy**

   ii.  **Statistics**
        1. **Change to Course Requirements**

   iii. **Radiation Sciences**
        1. **Change to Course Requirements and Calendar Copy**

**For Information of Graduate Council:**
   iv.  **Neuroscience***
        1. **Change to Evaluation**
           a. 700 The Nervous System

   v.   **Psychology**
        1. **Change in Course Title**
           a. 734 Neural Network Models for Cognition and Perception

   vi.  **Kinesiology**
        1. **Course Description Change**
           a. 713 Directed Reading in Kinesiology
        2. **New Course**
           a. 730 Experiential Learning in Kinesiology

*also approved by the Faculty of Health Sciences

# RECOMMENDATION FOR CHANGE IN GRADUATE CURRICULUM - FOR CHANGE(S) INVOLVING DEGREE PROGRAM REQUIREMENTS / PROCEDURES / MILESTONES

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

| **DEPARTMENT** | BIOLOGY | |
|---|---|---|
| **NAME OF PROGRAM and PLAN** | GSC_MS (Masters) | |
| **DEGREE** | **Masters** | |

| **NATURE OF RECOMMENDATION** *(PLEASE CHECK APPROPRIATE BOX)* |
|---|
| **Is this change a result of an IQAP review? ⊠ Yes ☐ No** |

| **CREATION OF NEW MILESTONE ☐** |
|---|

| **CHANGE IN ADMISSION REQUIREMENTS** | | **CHANGE IN COMPREHENSIVE EXAMINATION PROCEDURE** | | **CHANGE IN COURSE REQUIREMENTS** | **X** |
|---|---|---|---|---|---|
| **CHANGE IN THE DESCRIPTION OF A <u>SECTION</u> IN THE GRADUATE CALENDAR** | | **EXPLAIN:** This change is related to the second paragraph of our MSc requirement in the calendar. Specifically, here we clarify the course requirement and provide additional course information that are relevant and beneficial to all MSc students. | | | |
| **OTHER CHANGES** | | **EXPLAIN:** | | | |

**DESCRIBE THE <u>EXISTING</u> REQUIREMENT/PROCEDURE:**

Currently MSc students are required to take two graduate level courses, two thirds of which must be at the 700 level.

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

The M.Sc. candidate is required to complete satisfactorily two half courses in Biology or related fields, both of which must be at the 700 level. Students are encouraged to take BIO 712 "Communication and Scholarship Skills in Biology" during their study. The Department may require the student to take additional graduate or undergraduate courses to resolve program deficiencies. Students must plan their course requirements in consultation with their supervisory committee. A minimum passing grade is B- in each course. The candidate is required to present a thesis that demonstrates the ability to do original research. The candidate must be able to defend his/her thesis in the final oral examination.

**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 original description was a bit confusing to some students. In addition, we have added a recommendation that all MSc students are encouraged to take BIO 712 or equivalent during their graduate studies.

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

September 2019

**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):**

Please see attached **the revised calendar copy**.

**CONTACT INFORMATION FOR THE RECOMMENDED CHANGE:**

Name: Jianping Xu          Email: jpxu@mcmaster.ca          Extension: 27934   Date submitted: Oct. 10/18

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

SGS/2013

**SCHOOL OF GRADUATE STUDIES**

# RECOMMENDATION FOR CHANGE IN GRADUATE CURRICULUM - FOR CHANGE(S) INVOLVING DEGREE PROGRAM REQUIREMENTS / PROCEDURES / MILESTONES

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

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<tr>
<td>**DEPARTMENT**</td>
<td>BIOLOGY</td>
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<tr>
<td>**NAME OF PROGRAM and PLAN**</td>
<td>GSC_MS (Masters)</td>
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<td>**DEGREE**</td>
<td>**Masters**</td>
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**NATURE OF RECOMMENDATION** *(PLEASE CHECK APPROPRIATE BOX)*

**Is this change a result of an IQAP review? ☐ Yes ☒ No**

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<tr>
<td colspan="4">**CREATION OF NEW MILESTONE ☐**</td>
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<tr>
<td>**CHANGE IN ADMISSION REQUIREMENTS**</td>
<td>**CHANGE IN COMPREHENSIVE EXAMINATION PROCEDURE**</td>
<td>**CHANGE IN COURSE REQUIREMENTS**</td>
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<td>**CHANGE IN THE DESCRIPTION OF A SECTION IN THE GRADUATE CALENDAR**</td>
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**EXPLAIN:**

For new students who start their program in January and May, their FIRST supervisory committee meeting must be held by the end of October of the same calendar year.  For new students who start their program in September, their FIRST supervisory committee meeting should be held within 12 months (by the end of August in the following year).

Each graduate student must have one supervisory committee meeting in each academic year. After the first year, all returning students must have their annual meeting by the end of October in each year. However, earlier and more frequent meetings are recommended when the supervisor and/or the student deem such meeting(s) are necessary.

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| OTHER CHANGES | EXPLAIN: |
|---|---|

**DESCRIBE THE EXISTING REQUIREMENT/PROCEDURE:**

Previously, supervisory committee reports were due by August 31st.

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

The changes are in response to new SGS regulations about the timing of student supervisory committee meeting and reports.

**RATIONALE FOR THE RECOMMENDED CHANGE (How does the requirement fit into the department's program and/or tie to existing Program Learning Outcomes from the program's IQAP cyclical review?):**

The recommended changes provided here are in response to the new requirements and guidelines by the School of Graduate Studies.  Although SGS Calendar 2.7. Supervision section states a deadline of "no later than November 30th.", having a departmental chosen October deadline allows sufficient time to ensure the November deadline is met.

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

September 2017 as requested by SGS.

**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):**

Please see attached.

**CONTACT INFORMATION FOR THE RECOMMENDED CHANGE:**

Name:  Jianping Xu          Email:  jpxu@mcmaster.ca          Extension:  27934   Date submitted:  Oct. 10/18

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

SGS/2013

**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: |
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| 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 | | BIOLOGY |
|---|---|---|
| **NAME OF PROGRAM and PLAN** | | GSC_PHD |
| **DEGREE** | **Ph.D.** | |

| NATURE OF RECOMMENDATION *(PLEASE CHECK APPROPRIATE BOX)* |
|---|
| **Is this change a 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 IN THE GRADUATE CALENDAR** | | **EXPLAIN:**<br><br>For new students who start their program in January and May, their FIRST supervisory committee meeting must be held by the end of October of the same calendar year.  For new students who start their program in September, their FIRST supervisory committee meeting should be held within 12 months (by the end of August in the following year).<br><br>Each graduate student must have one supervisory committee meeting in each academic year. After the first year, all returning students must have their annual meeting by the end of October in each year. However, earlier and more frequent meetings are recommended when the supervisor and/or the student deem such meeting(s) are necessary.<br><br>The Comprehensive Examination Study Topics form must be completed at the FIRST supervisory committee meeting. | | | |

| OTHER CHANGES | | EXPLAIN: |
|---|---|---|

**DESCRIBE THE <u>EXISTING</u> REQUIREMENT/PROCEDURE:**

Previously, supervisory committee reports were due by August 31st.

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

The changes are in response to new SGS regulations about the timing of student supervisory committee meeting and reports.

**RATIONALE FOR THE RECOMMENDED CHANGE (How does the requirement fit into the department's program and/or tie to existing Program Learning Outcomes from the program's IQAP cyclical review?):**

The recommended changes provided here are in response to the new requirements and guidelines by the School of Graduate Studies.   Although SGS Calendar 2.7. Supervision states a deadline of "no later than November 30th", having a departmental chosen October deadline allows sufficient time to ensure the November deadline is met.

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

September 2017 as requested by SGS.

**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):**

Please see attached.

**CONTACT INFORMATION FOR THE RECOMMENDED CHANGE:**

Name:  Jianping Xu          Email:  jpxu@mcmaster.ca          Extension:  27934    Date submitted:  Oct. 10/18

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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| **DEPARTMENT** | | BIOLOGY | | |
| --- | --- | --- | --- | --- |
| **NAME OF PROGRAM and PLAN** | | GSC_MS (Masters) and GSC_PH (PhD) | | |
| **DEGREE** | **Masters and PhD** | | | |
| **NATURE OF RECOMMENDATION** *(PLEASE CHECK APPROPRIATE BOX)* <br><br> **Is this change a 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 <u>SECTION</u> IN THE GRADUATE CALENDAR** | | **EXPLAIN:** | | |
| **OTHER CHANGES** | **EXPLAIN:** <br><br> It is recommended that graduate students should try to attend all departmental seminars. All graduate students must attend a minimum of 12 seminars per year.  These may include Departmental, research-group focussed, or outside of biology seminars.  Attendance will be reported through Seminar Attendance Recording Form signed by the supervisor, and handed in at the annual supervisory committee meeting as part of the supervisory committee report. | | | |

**DESCRIBE THE <u>EXISTING</u> REQUIREMENT/PROCEDURE:**

Students have not been required to attend departmental seminars.

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

This is an additional requirement for all graduate students in Biology.

**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 requirement will hopefully achieve several goals in our graduate program, some of which were noted by the IQAP review team: e.g. (i) expose our graduate students to a diversity of research from experts, (ii) help develop students' presentation skills; (iii) increase interactions among graduate students; and (iv) increase attendance at our seminar series. The self-reporting mechanism will also ensure that the task in not onus for any particular member of the department.

*(This is in response to "Recommendation #5" of the 2018 IQAP External Reviewers' Report on Biology MSc and PhD – Page 21).*

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

September 2019

**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):**

Each year, every graduate student must attend at least 12 seminars per year and the Seminar Attendance Recording form must be submitted at the annual supervisory committee meeting.  Refer to the appropriate section of the program guide available from the Department for more details.

**CONTACT INFORMATION FOR THE RECOMMENDED CHANGE:**

Name:  Jianping Xu          Email:  jpxu@mcmaster.ca          Extension:  27934   Date submitted:  Oct. 10/18

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

**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: |
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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 | BIOLOGY | |
|---|---|---|
| **NAME OF PROGRAM and PLAN** | GSC_MS (Masters) | |
| **DEGREE** | **Masters** | |

| NATURE OF RECOMMENDATION *(PLEASE CHECK APPROPRIATE BOX)* |
|---|
| **Is this change a 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 IN THE GRADUATE CALENDAR** | | **EXPLAIN:** | | | |
| **OTHER CHANGES** | **EXPLAIN:**<br><br>It is recommended that the supervisory committee for MSc students be composed of the supervisor and two other faculty members, one of whom could be from another Graduate Unit. | | | | |

**DESCRIBE THE <u>EXISTING</u> REQUIREMENT/PROCEDURE:**

M.Sc. Students: The supervisory committee must consist of a minimum of two "research-stream" faculty members. While one member must be a full-time Biology faculty (normally the Supervisor), the other could either be a Biology associate or adjunct, or a tenured full-time faculty from another department at McMaster University.

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

The recommendation is that, if possible, that we increase the current supervisory committee membership for each MSc student from two to three. While one member must be a full-time Biology faculty (normally the Supervisor), the other two could either be a Biology associate or adjunct with pre-approved graduate supervisory membership status, or a tenured full-time faculty from another department at McMaster University.

**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 IQAP external review committee recommended that each graduate student must have a supervisory committee consisting of three faculty members, including the supervisor. At present, each of our PhD students has a three-member supervisory committee while MSc students each requires a minimum of two-member supervisory committee.  Due to the diverse nature of our graduate programs, in several fields, we have only a limited number of faculty.  Thus, it's difficult to meet the three-member committee membership.  This is complicated by the fact that each MSc thesis examination committee requires an expert of the field but is external to the supervisory committee. Thus, we opted to RECOMMEND that the MSc supervisory committee be composed of three members to partially fulfill the IQAP recommendation.

*(This is in response to "Recommendation #7" of the 2018 IQAP External Reviewers' Report on Biology MSc and PhD – Page 21).*

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

September 2019

**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):**

**n/a**

**CONTACT INFORMATION FOR THE RECOMMENDED CHANGE:**

Name:  Jianping Xu          Email:  jpxu@mcmaster.ca          Extension:  27934   Date submitted:  Oct. 10/18

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

SGS/2013

**SCHOOL OF GRADUATE STUDIES**

# RECOMMENDATION FOR CHANGE IN GRADUATE CURRICULUM - FOR CHANGE(S) INVOLVING DEGREE PROGRAM REQUIREMENTS / PROCEDURES / MILESTONES

<table>
<tr><td colspan="3"><u>IMPORTANT:  PLEASE READ THE FOLLOWING NOTES BEFORE COMPLETING THIS FORM</u>:<br><br>1.   This form must be completed for <b><u>ALL</u></b> changes involving degree program requirements/procedures.  <b><u>All</u></b> sections of this form <b><u>must</u></b> be completed.<br><br>2.   An electronic version of this form (must be in MS WORD <b><u>not</u></b> PDF) should be emailed to the Assistant Secretary, School of Graduate Studies (cbryce@mcmaster.ca).<br><br>3.   A representative from the department is <b><u>required to attend</u></b> the Faculty Curriculum and Policy Committee meeting during which this recommendation for change in graduate curriculum will be discussed.</td></tr>
<tr><td><b>DEPARTMENT</b></td><td colspan="2">BIOLOGY</td></tr>
<tr><td><b>NAME OF PROGRAM and PLAN</b></td><td colspan="2">GSC_MS (Masters) and GSC_PH (PhD)</td></tr>
<tr><td><b>DEGREE</b></td><td colspan="2"><b>Masters and PhD</b></td></tr>
<tr><td colspan="3"><b>NATURE OF RECOMMENDATION</b> <i>(PLEASE CHECK APPROPRIATE BOX)</i><br><br><b>Is this change a result of an IQAP review? ☒ Yes ☐ No</b></td></tr>
<tr><td colspan="3"><b>CREATION OF NEW MILESTONE</b> ☐</td></tr>
</table>

<table>
<tr>
<td><b>CHANGE IN ADMISSION REQUIREMENTS</b></td>
<td></td>
<td><b>CHANGE IN COMPREHENSIVE EXAMINATION PROCEDURE</b></td>
<td></td>
<td><b>CHANGE IN COURSE REQUIREMENTS</b></td>
<td><b>X</b></td>
</tr>
<tr>
<td colspan="2"><b>CHANGE IN THE DESCRIPTION OF A <u>SECTION</u> IN THE GRADUATE CALENDAR</b></td>
<td colspan="4"><b>EXPLAIN:</b><br><br>We strongly recommend that our MSc and PhD students take Biology 712 "Communication and Scholarship Skills in Biology" Course or equivalent during their graduate studies.</td>
</tr>
<tr>
<td colspan="2"><b>OTHER CHANGES</b></td>
<td colspan="4"><b>EXPLAIN:</b></td>
</tr>
</table>

**DESCRIBE THE <u>EXISTING</u> REQUIREMENT/PROCEDURE:**

Currently MSc students are required to take two 700 level courses.  PhD students are not required to take additional courses.

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

We strongly recommend that all graduate students take BIO 712 or equivalent during their graduate studies.

**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?):**

As the name indicates, BIO 712 is a broad course on "Communication and Scholarship Skills in Biology". It involves multiple faculty across different fields in Biology. In this course, students will have first-hand experience in applying best practises in scientific communication in Biology. They will experience and learn critical analysis, individual and group writing, visual and verbal communication, and peer review. Students will obtain a working knowledge of the epistemic rules for funding, publication, critique and ethics in Biology. In its first offering in the 2017-2018 academic year, the course attracted students from all graduate disciplines in biology. All students rated this course highly and they conveyed their enthusiasms to the IQAP review committee. Based on both students' feedback and the IQAP review committee's recommendation, we now strongly recommend that all incoming graduate students take this course (or an equivalent) during their graduate studies in Biology at McMaster.

*(This is in response to "Recommendation #4" of the 2018 IQAP External Reviewers' Report on Biology MSc and PhD – Page 20).*

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

September 2019

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

The IQAP recommendation was that all our graduate students MUST take BIO712 during their graduate studies in Biology, in addition to the existing two-course requirement. However, the department felt that increasing course load would take away research time and lead to increased completion time for our graduate students. In addition, BIO712 is still being fine-tuned and we prefer to wait until a satisfying and broadly applicable format emerges.

**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.

**CONTACT INFORMATION FOR THE RECOMMENDED CHANGE:**

Name:  Jianping Xu          Email:  jpxu@mcmaster.ca          Extension:  27934    Date submitted:  Oct. 10/18

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

SGS/2013

# Biology, M.Sc.

## Requirements

The requirements for the M.Sc. degree appear under the Regulations for the Master''s degree near the beginning of this Calendar. A candidate for the M.Sc. degree in Biology is normally required to spend at least one calendar year in full-time graduate study at McMaster University. Completion of the M.Sc. degree, however, typically requires two years of full-time study.

The M.Sc. candidate is required to complete satisfactorily ~~not fewer than one full course~~ BIO712 and two ~~other~~ half courses in Biology or related fields, both of which ~~at least one half course~~ must be at the 700 level. Students are encouraged to take BIO 712 "Communication and Scholarship Skills in Biology" during their study. ~~If a 600-level course is taken, it must be in Biology.~~ The Department may require the student to take additional graduate or undergraduate courses to resolve program deficiencies. Students must plan their course requirements in consultation with their supervisory committee. A minimum passing grade is B- in each course. The candidate is ~~also~~ required to present a thesis ~~which~~ that demonstrates the ability to do original research. The candidate ~~will~~ must be ~~required~~ able to defend his/her thesis in the final oral examination. ~~The Department may require the student to take additional graduate or undergraduate courses to remove program deficiencies.~~

All M.Sc. students are required to have annual supervisory committee meetings. For new students who start their program in January and May, their first supervisory committee meeting must be held by the end of October of the same year. For new students who start their program in September, their first supervisory committee meeting should be held within 12 months (by the end of August in the following year). However, earlier and more frequent meetings are recommended when the supervisor and/or the student deem such meeting(s) are necessary. Each ~~year, every year~~ graduate student must ~~Students are required to~~ attend at least 12 seminars per year (per 12 months) and the Seminar Attendance ~~attendance r~~ Recording form must be submitted at the annual

supervisory committee meeting.  Please rRefer to the appropriate section of the program guide available from the Department of Biology -for more details.-

# Ph.D. Program Transfer

Students in the M.Sc. program can be considered for transfer to thea Ph.D. program, normally after one year. The first supervisory committee of an M.Sc. student must take place within 9 months of joining the program. The process of transfer to thea Ph.D. program will begin soon after thisthe first supervisory committee meeting, and the examination must be completed within 12-20 months after the start of the M.Sc. program. Prior to transfer, the candidate must have completed a minimum of one graduate half course (preferably at the 700-level) and obtained the average grade of B+ or better. Transfer from the M.Sc. to the Ph.D. program will be initiated by a mutual agreement between the student and supervisor. Refer to the appropriate section of the program guide available from the Department of Biology for more details. Enrolment in the Ph.D. program is dependent upon the successful completion of the transfer examination.

# Note:

Candidates for the M.Sc. degree who wish to complete the requirements in time for a particular convocation, should submit their theses to the Department a full two weeks ahead of the date given elsewhere in the calendar, in order to give their examiners adequate time to review their theses.)

# Biology, Ph.D.

## Requirements

Ph.D. candidates in Biology are bound by School of Graduate Studies regulations. There is no course requirement for s~~S~~~~For s~~tudents entering the Ph.D. program with an M.Sc. degree ~~there is no minimum course requirement~~must complete BIO712 or equivalent, ~~but all students must complete~~~~and~~but all students must complete a thesis embodying independent original research. Students with a B.Sc. degree directly entering our Ph.D. program are required to complete a minimum of t~~wo~~hree~~wo~~ 700-level half courses in Biology or related fields, ~~including BIO712 or equivalent,~~ plus a thesis. Students are encouraged to take BIO 712 "Communication and Scholarship Skills in Biology" during their study. The ~~department~~ supervisory committee may require a Ph.D. student to take graduate or undergraduate courses to re~~solve~~~~move~~ program deficiencies. Students must plan their course requirements in consultation with their supervisory committee. In addition to courses, the supervisory committee will identify study topics for the student ~~that are chosen~~ to broaden their breadth of scientific knowledge, extending beyond the topic of their Ph.D. research.

All Ph.D. students are required to have annual supervisory committee meetings. For new students who start their program in January and May, their first supervisory committee meeting must be held by the end of October of the same ~~calendar~~ year. For new students who start their program in September, their first supervisory committee meeting should be held within 12 months (by the end of August in the following year). However, earlier and more frequent meetings are recommended when the supervisor and/or the student deem such meeting(s) are necessary. A Ph.D. candidate must pass a comprehensive examination in order to continue in the program. ~~The first supervisory committee meeting of the student will take place within 9 months of the registration as a doctoral candidate. In this meeting the comprehensive examination procedure, examiners and time frame will be discussed.~~ The comprehensive exam normally takes place between 12 and 20~~16~~ months (with an upper limit of 24 months in exceptional cases) after the initial date of registration in the Ph.D. program. The comprehensive examination topics, procedure, examiners and time frame are typically determined at the first supervisory committee meeting. The Comprehensive Examination Study Topics ~~, examination topics~~form ~~()~~ must be completed at the FIRST supervisory committee meeting. Please r~~R~~efer to the appropriate sections of the program guide available from the Department of Biology for more details.

Candidates for both M.Sc. and Ph.D. degrees are expected to participate regularly in departmental programs and activities (e.g. seminars). Eachh year, every graduate student must is expected to attend at least 12 seminars per year (12 months) and the Seminar Attendance Recording Form attendance record (), must be submitted at the annual supervisory committee meeting. Refer to the appropriate section of the program guide available from the Department for more details.  Graduate students entering the final year of the Ph.D. degree are required to present the results of their research project to the department during a public supervisory committee meeting. At this meeting students will present a comprehensive overview of the field of investigation in the form of a written report submitted to the supervisory committee and an oral presentation describing the rationale, experimental approaches, and outcomes of their research project. A question period follows the presentation.

In the final Ph.D. Thesis Defensee Examination, the candidate will be expected to defend his/her thesis which embodies the results of original research. The general requirements concerning the thesis appear earlier in this Calendar.

**SCHOOL OF GRADUATE STUDIES**

# RECOMMENDATION FOR CHANGE IN GRADUATE CURRICULUM - FOR CHANGE(S) INVOLVING DEGREE PROGRAM REQUIREMENTS / PROCEDURES / MILESTONES

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| DEPARTMENT | Mathematics and Statistics |
| --- | --- |
| **NAME OF PROGRAM and PLAN** | Statistics M.Sc. |
| **DEGREE** | **M.Sc** |

| NATURE OF RECOMMENDATION *(PLEASE CHECK APPROPRIATE BOX)* |
| --- |
| **Is this change a result of an IQAP review? ☒ Yes ☐ No** |

| CREATION OF NEW MILESTONE ☐ |
| --- |

| **CHANGE IN ADMISSION REQUIREMENTS** | | **CHANGE IN COMPREHENSIVE EXAMINATION PROCEDURE** | | **CHANGE IN COURSE REQUIREMENTS** | X |
| --- | --- | --- | --- | --- | --- |
| **CHANGE IN THE DESCRIPTION OF A <u>SECTION</u> IN THE GRADUATE CALENDAR** | | **EXPLAIN: add the following in the program requirements section** <br><br> All students entering the program are required to take the zero credit statistics seminar course STATS 770. In addition, the following requirements apply to students in different options. | | | |

| OTHER CHANGES | EXPLAIN:<br><br>**See the attachment.** |
|---|---|

**DESCRIBE THE <u>EXISTING</u> REQUIREMENT/PROCEDURE:**

All students are required to take four compulsory courses including STATS 770.

---

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

STATS 770 is converted to a zero credit course that is required by all new master students in statistics. A new course STATS 771: Statistical Research Project is introduced. It is a required course for all students in the course work option.

**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?):**

In the most recent IQAP review, both faculty and students expressed misgivings about STAT 770, the seminar course, in its present form.  It is not clear that the course achieves its educational learning outcomes.  Students are not engaged in this course, and terminal M.Sc. students get little content value from the reports. The proposed changes provide better ways to achieve the educational goals of the current STAT 770.  The new format gives students more options on their research projects. These include but not limited to

- o a small, well-contained project;
- o reports on simpler papers that are related to seminar topics, but more directly interesting or useful;
- o reports on papers relating to topics encountered in the courses taken in each semester (e.g. from a vetted list or selected by students through literature searches); or
- o reports on papers of direct interest to individual students.

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

September 1, 2019

**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 the tracked changes version of the calendar. The part with colour is new.

**CONTACT INFORMATION FOR THE RECOMMENDED CHANGE:**

Name:  Shui  Feng   Email:  shuifeng@mcmaster.ca   Extension:  24723       Date submitted:  October 26,2018

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

SGS/2013

# Statistics, M.Sc.

## B. Program Requirements

Students can earn the M.Sc. degree following one of the options below. In both options students can take up to two 600-level courses to fulfill their graduate course requirements. ~~All Master statistics students are required to attend the weekly Statistics seminar during the Fall and Winter terms, and also submit written reports on six seminars delivered during the year.~~ All Master statistics students entering the program are required to take the zero credit statistics seminar course STATS 770. In addition, the following requirements apply to students in different options.

## Thesis Option

Students choosing the **Thesis Option** are required to complete six one-semester graduate courses (consisting of ~~four~~ three compulsory and ~~two~~ three elective courses) and a thesis. Equivalent in work to two one-semester courses, the thesis is written under the supervision of a faculty member of the program in a topic of mutual interest to student and supervisor. The degree requirements are normally completed in four academic terms.

## Coursework Option

The **Coursework Option** requires completion of eight one-term graduate courses (consisting of four compulsory and four elective courses). The degree requirements are normally completed in two or three academic terms.

# C. Examinations

No examinations will be required except as stipulated by individual instructors in individual courses.

# D. Thesis

For those in the **Thesis Option**, a thesis will typically be 50 to 150 pages in length, exclusive of tables, graphs and appendices, written and bound in the usual format for a thesis. Standard statistical analyses applied to a novel application, or original contributions to statistical methodology with adequate presentation of background material will be acceptable thesis work. Students will be required to defend their theses orally.

# Courses

## Required Courses

 In the Statistics Program, there are required, elective, and special topics courses. Required courses cover the basic theoretical concepts that are considered essential for all students. Another required course develops a broad knowledge of statistics through attendance at research seminars as well as report-writing skills through critical written reviews of the seminars. The elective courses are traditional statistics courses covering a sufficient variety of topics to offer students a choice based upon their individual interests. Approved courses from other graduate programs may be taken as elective courses for graduate credit.

STATS 743 / Foundations of Statistics (two one-term courses)
STATS 752 / Linear Models and Experimental Designs (one one-term course)

[STATS 770 / Statistics Seminar](#)
STATS 771 / Statistical Research Project (required for course work option)

**McMaster University** **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 **ALL** changes involving degree program requirements/procedures.  **All** sections of this form **must** be completed.<br><br>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).<br><br>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 | Interdisciplinary graduate programs in radiation sciences and health physics |
|---|---|
| **NAME OF PROGRAM and PLAN** | Health & Radiation Physics |
| **DEGREE** | MSc |

| NATURE OF RECOMMENDATION *(PLEASE CHECK APPROPRIATE BOX)* |
|---|
| **Is this change a result of an IQAP review?**☐ Yes ☐ No |

| CREATION OF NEW MILESTONE☐ |
|---|

| CHANGE IN ADMISSION REQUIREMENTS | | CHANGE IN COMPREHENSIVE EXAMINATION PROCEDURE | | CHANGE IN COURSE REQUIREMENTS | X |
|---|---|---|---|---|---|
| **CHANGE IN THE DESCRIPTION OF A <u>SECTION</u> IN THE GRADUATE CALENDAR** | | **EXPLAIN:** | | | |

| OTHER CHANGES | X | **EXPLAIN:**<br><br>Students are required to take four 700 level courses. Three of these are prescribed (Med Phys 7772, Med Phys 775, Med Phys 776). The fourth can be one of four listed options Med Phys 779, Med Phys 771, Med Phys 774, Med Phys 778).<br><br>Previously, Med Phys 773 was required. This was a radiation biology course. Many students have already completed the required basic radiation biology, either at McMaster or at some other universities. Those students who lack this prior learning will be told by the program to take an appropriate course to fill the lack. |
|---|---|---|

**DESCRIBE THE <u>EXISTING</u> 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 tracked changes version of the calendar section affected if applicable):**

See attached

**CONTACT INFORMATION FOR THE RECOMMENDED CHANGE:**

Name:  David Chettle  Email:  chettle@mcmaster.ca  Extension:  27340          Date submitted:  29th January 2019

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

SGS/2013

**McMaster University** **SCHOOL OF GRADUATE STUDIES**

## RECOMMENDATION FOR CHANGE IN GRADUATE CURRICULUM - FOR CHANGE(S) INVOLVING DEGREE PROGRAM REQUIREMENTS /PROCEDURES / MILESTONES

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| DEPARTMENT | Interdisciplinary graduate programs in radiation sciences and health physics | | |
| --- | --- | --- | --- |
| **NAME OF PROGRAM and PLAN** | Health Physics, Medical Physics, Radiation Biology | | |
| **DEGREE** | MSc, PhD | | |
| **NATURE OF RECOMMENDATION** *(PLEASE CHECK APPROPRIATE BOX)* <br><br> **Is this change a result of an IQAP review?** ☐ Yes ☐ No | | | |
| **CREATION OF NEW MILESTONE** ☐ | | | |

| **CHANGE IN ADMISSION REQUIREMENTS** | | **CHANGE IN COMPREHENSIVE EXAMINATION PROCEDURE** | | **CHANGE IN COURSE REQUIREMENTS** | X |
| --- | --- | --- | --- | --- | --- |
| **CHANGE IN THE DESCRIPTION OF A <u>SECTION</u> IN THE GRADUATE CALENDAR** | | **EXPLAIN:** <br><br> Articulating the expectation of prior learning | | | |
| **OTHER CHANGES** | **EXPLAIN:** <br><br> In order to succeed in graduate programs in radiation sciences, a student requires prior learning in areas such as radiation biology, radioactivity and radiation interactions and radiation and radioisotope methodology. Courses in these areas are offered at the senior undergraduate level at McMaster and a number of other universities. However, some otherwise well qualified students apply to one of these programs, while missing prior learning in one, or more, of these areas. When this happens, rather than rejecting a strong candidate, the program will specify 600 level courses that the student can take in order to satisfy these prior learning expectations. | | | |

**DESCRIBE THE <u>EXISTING</u> REQUIREMENT/PROCEDURE:**

The program has been listing the 600 level course as required and then seeking a waiver when a student has fulfilled this requirement at McMaster or another university. This has proved to have two disadvantages. There has been excessive use of waivers, often requiring extensive correspondence when ensuring that a student is clear to graduate. Secondly, the situation can arise in which a student has more than one third of courses at the 600 level, in contravention of provincial level rules.

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

The explicitly required courses will those presently listed at the 700 level. No 600 level courses will be listed as required in the Calendar.

Previously, one of the required courses was Med Phys 773. This has been found to have considerable overlap with Med Phys 6U03 (both address fundamentals of radiation biology). This situation was found to be not functioning well and sometimes confusing. In practice, the key content of Med Phys 773 has been part of prior learning students completed at McMaster and some other universities. This is why Med Phys 773 has been cancelled and so removed from program requirements. For many students that content will be part of prior learning; for some students the program will require them to take an additional course, Med Phys 6U03, to fulfill the expected prior learning.

**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 serves to articulate the expected prior learning for the radiation sciences graduate programs.

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

September 2019.

**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):**

See attached

**CONTACT INFORMATION FOR THE RECOMMENDED CHANGE:**

Name:  David Chettle          Email:  chettle@mcmaster.ca          Extension:  27340          Date submitted:  29-01-19

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

SGS/2013

**McMaster University**

# RECOMMENDATION FOR CHANGE IN GRADUATE CURRICULUM - FOR CHANGE(S) INVOLVING DEGREE PROGRAM REQUIREMENTS /PROCEDURES / MILESTONES

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| DEPARTMENT | Interdisciplinary graduate programs in radiation sciences and health physics |
| --- | --- |
| **NAME OF PROGRAM and PLAN** | Radiation Sciences – Radiation Biology |

| DEGREE | MSc |
| --- | --- |

| NATURE OF RECOMMENDATION *(PLEASE CHECK APPROPRIATE BOX)* |
| --- |
| **Is this change a result of an IQAP review?**☐ Yes ☐ No |

| CREATION OF NEW MILESTONE☐ |
| --- |

| CHANGE IN ADMISSION REQUIREMENTS | | CHANGE IN COMPREHENSIVE EXAMINATION PROCEDURE | | CHANGE IN COURSE REQUIREMENTS | X |
| --- | --- | --- | --- | --- | --- |

| **CHANGE IN THE DESCRIPTION OF A <u>SECTION</u> IN THE GRADUATE CALENDAR** | X | **EXPLAIN:**<br><br>Changes have been made to try to clarify this situation. There are two sub sets to this program. There is the Radiation Biology, there is also Radiation Biology – Medical Radiation Sciences. The latter is particularly appropriate for people working in Radiation Therapy. Such people might well take this part time. There is one course which is specific to the Medical Radiation Sciences stream, which is Med Phys 781 "Advanced Clinical Practicum in Medical Radiation Sciences". This course is required for students in this stream. |
| --- | --- | --- |
| **OTHER CHANGES** | X | **EXPLAIN:**<br><br>Two other courses, Med Phys 6B03 and Med Phys 773 had previously been listed. Steudents |

| | from McMaster and from some other universities may already have covered the required material in these courses. If they have not, the program will require them to take appropriate courses to fill this lack. |

**DESCRIBE THE <u>EXISTING</u> REQUIREMENT/PROCEDURE:**

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**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 tracked changes version of the calendar section affected if applicable):**

See attached

**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

**SCHOOL OF GRADUATE STUDIES**

## RECOMMENDATION FOR CHANGE IN GRADUATE CURRICULUM - FOR CHANGE(S) INVOLVING DEGREE PROGRAM REQUIREMENTS /PROCEDURES / MILESTONES

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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.

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| | |
|---|---|
| **DEPARTMENT** | Interdisciplinary graduate programs in radiation sciences and health physics |
| **NAME OF PROGRAM and PLAN** | Radiation Sciences |
| **DEGREE** | **PhD** |

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**NATURE OF RECOMMENDATION** *(PLEASE CHECK APPROPRIATE BOX)*

**Is this change a result of an IQAP review?**☐ **Yes** ☐ **No**

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**CREATION OF NEW MILESTONE**☐

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| **CHANGE IN ADMISSION REQUIREMENTS** | | **CHANGE IN COMPREHENSIVE EXAMINATION PROCEDURE** | | **CHANGE IN COURSE REQUIREMENTS** | X |
|---|---|---|---|---|---|
| **CHANGE IN THE DESCRIPTION OF A <u>SECTION</u> IN THE GRADUATE CALENDAR** | | **EXPLAIN:**<br><br>The previous listing explicitly showed courses (or material) that would normally have been at the MSc level or before. The exception could be for a student joining our program directly at the PhD level, rather than beginning with the MSc. In this case, they would almost certainly not have completed Med Phys 775, or anything like it. The materials in the other previously listed courses (Med Phys 6R03, Med Phys 773 for Medical Physics; Med Phys 6B03, Med Phys 773 for Radiation Biology) will normally have been completed a the MSc level, or even before in some cases. So this is expected prior learning and students who lack this will be directed by the program to take appropriate courses to fill this lack.<br><br>For most PhD students, the courses requirement amounted to two | | | |

1

| | | 700 level course, without any specific course requirement and that will remain the case. |
|---|---|---|
| **OTHER CHANGES** | **EXPLAIN:** | |

**DESCRIBE THE <u>EXISTING</u> REQUIREMENT/PROCEDURE:**

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**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 tracked changes version of the calendar section affected if applicable):**

See attached

**CONTACT INFORMATION FOR THE RECOMMENDED CHANGE:**

| Name:  David Chettle | Email:  chettle@mcmaster.ca | Extension:  27340 | Date submitted:  29-01-19 |

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

SGS/2013

# Health and Radiation Physics, M.Sc.

The M.Sc. in Health and Radiation Physics is relatively course intensive and is designed to provide the education, training and professional development required for a career in Health Physics.

## M.Sc. Degree

### Admission

Normal admission requirements are a B.Sc. honours degree, at least B+ standing (or equivalent) in Physics, Biophysics, Engineering Physics, or Chemistry, or some course of study approved by the Radiation Sciences Graduate Program.

### Requirements

A candidate for the M.Sc. degree must:

### Course Requirements

Complete satisfactorily the courses:

MED PHYS 772 / Medical Health Physics
MED PHYS 773 / Basic Clinical Radiobiology
MED PHYS 775 / Advanced Radiation Physics
MED PHYS 776 / Introduction to Operational Health Physics

### Additional Required Courses

Students must complete satisfactorily one additional 700-level course from the following list:

MED PHYS 770 / Medical Imaging Systems I
MED PHYS 771 / Isotopes In-Vivo
MED PHYS 778 / Radiation Oncology Physics *or*
MED PHYS 774 / Monte Carlo simulation for Medical, Health and Radiation Physics
MED PHYS 778 / Radiation Oncology Physics

Students are expected to have knowledge in Radiation Biology and in Radiation & Radioisotope Methodology. If a student lacks this knowledge, she/he will be directed by the program to pursue appropriate additional learning opportunities.Students who have not

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satisfactorily completed MED PHYS 6R03 must also complete this course satisfactorily.

## Comprehensive Examination

Pass a final comprehensive examination.

## Research Report

Complete and defend a research report based on a project approved by the Program.

## Course Substitutions

A student with a strong background in Health and Radiation Physics may be permitted to replace one or more of the core courses with relevant courses approved by the Department. A student may not take more than one 600-level full graduate course to satisfy the minimum course requirements.

Requirements

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M.Sc. in Radiation Sciences (Medical Physics)

---

The M.Sc. in Radiation Sciences (Medical Physics) requires that a candidate complete satisfactorily the courses below. Candidates for this M.Sc. are also required to present and defend a thesis, which shall embody the results of original research. Candidates are expected to have knowledge in Radiation Biology and in Radiation & Radioisotope Methodology. If a candidate lacks this knowledge, she/he will be directed by the program to pursue appropriate additional learning opportunities.

- ~~MED PHYS 6R03 / Radiation and Radioisotope Methodology~~

- MED PHYS 775 / Advanced Radiation Physics

- ~~MED PHYS 773 / Basic Clinical Radiobiology~~

- one other half course

M.Sc. in Radiation Sciences (Radiation Biology)

---

The M.Sc. in Radiation Sciences (Radiation Biology) requires that a candidate complete satisfactorily the courses below. Candidates for this M.Sc. are also required to present and defend a thesis, which shall embody the results of original research. Candidates are expected to have knowledge in Radiation Biology and in Radioactivity & Radiation Interactions. If a candidate lacks this knowledge, she/he will be directed by the program to pursue appropriate additional learning opportunities.

~~Candidates in the Medical Radiation Sciences stream are required to complete the course noted below (MED PHYS 6B03 and MED PHYS 773) as well as MED PHYS 781. Candidates for this M.Sc. are also required to present and defend a thesis, which shall embody the results of original research.~~

- ~~MED PHYS 6B03 / Radioactivity and Radiation Interactions~~

- ~~MED PHYS 773 / Basic Clinical Radiobiology~~

~~One other half course at the 700 level which can be~~

---

- MED PHYS 779 / Radiation Health Risks and Benefits or

- MED PHYS 780 / Radiation Effects in Plants and Animals or

- ~~MED PHYS 781 / Advanced Clinical Practicum in Medical Radiation Sciences~~

- MED PHYS 782 / Modern Radiation Biology - Implications for the Certainty with which Scientific Positions are Held

Candidates in the Medical Radiation Sciences stream are required to complete the course noted below. Candidates for this M.Sc. are also required to present and defend a thesis, which shall embody the results of original research.

- MED PHYS 781 / Advanced Clinical Practicum in Medical Radiation Sciences

One other half course at the 700 level which can be

---

- MED PHYS 779 / Radiation Health Risks and Benefits or

- MED PHYS 780 / Radiation Effects in Plants and Animals or

- MED PHYS 782 / Modern Radiation Biology - Implications for the Certainty with which Scientific Positions are Held

# Radiation Sciences (Medical Physics/Radiation Biology), Ph.D

## Ph.D. Degree

## Course Requirements

The minimum course requirement for the Ph.D. degree in Radiation Sciences in both fields of Medical Physics and Radiation Biology is the completion of at least one full course at the 700-level beyond the courses required for the M.Sc. degree.

### Medical Physics field

Candidates in the Medical Physics field must complete the following:

MED PHYS 773 / Basic Clinical Radiobiology
MED PHYS 6R03 / Radiation and Radioisotope Methodology,
Two half courses at the 700 level, including
MED PHYS 775 / Advanced Radiation Physics
one other half course at the 700-level unless it has already been completed
Candidates are expected to have knowledge in Radiation Biology and in Radiation & Radioisotope Methodology. If a candidate lacks this knowledge, she/he will be directed by the program to pursue appropriate additional learning opportunities.

### Radiation Biology field

Candidates in the Radiation Biology field must complete the following:

MED PHYS 6B03 / Radioactivity and Radiation Interactions
MED PHYS 773 / Basic Clinical Radiobiology
two half courses at the 700 level
Candidates are expected to have knowledge in Radiation Biology and in Radioactivity & Radiation Interactions. If a candidate lacks this knowledge, she/he will be directed by the program to pursue appropriate additional learning opportunities.

## Comprehensive Examination

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Every candidate for the Ph.D. must pass a Comprehensive Examination concerned with Radiation Sciences, but outside their own immediate area of research.

## Thesis

A thesis must be presented embodying the results of original research, and this thesis will be defended in a final oral examination.

**McMaster University**

**SCHOOL OF GRADUATE STUDIES**

☒ **RECOMMENDATION FOR CHANGE IN GRADUATE CURRICULUM - FOR CHANGE(S) INVOLVING COURSES & MILESTONES**

| IMPORTANT:  PLEASE READ THE FOLLOWING NOTES BEFORE COMPLETING THIS FORM: |
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| 1.   This form must be completed for ALL course changes.  Sections of this form pertaining to your requested change must be completed. |
| 2.   An electronic version of this form (must be MS WORD not PDF) should be emailed to the Assistant Secretary, School of Graduate Studies (cbryce@mcmaster.ca). |
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| DEPARTMENT | PSYCH | | |
|---|---|---|---|
| **COURSE TITLE** | **Neural Network Models for Cognition and Perception** | | |

| COURSE NUMBER | 734 | **COURSE CREDIT** | | |
|---|---|---|---|---|
| | | 6 Unit Course  (   ) | 3 Unit Course  ( X ) | 1.5 Unit Course    (   ) |
| **INSTRUCTOR(S)** | Dr. Sue Becker | | | |
| **REQUISITE(S)** **(Pre/Co/Anti or program enrollment requirement)** | | | | |

| NATURE OF RECOMMENDATION  *(PLEASE CHECK APPROPRIATE BOX)* |
|---|
| **Is this change a result of an IQAP review?** ☐ Yes ☒ No |

| NEW COURSE | | DATE TO BE OFFERED (FOR NEW COURSES ONLY): | WAS THE PROPOSED COURSE OFFERED ON DEAN'S APPROVAL? |
|---|---|---|---|
| WILL THE COURSE BE CROSS-LISTED (COMBINED SECTIONS) WITH ANOTHER DEPARTMENT?        IF YES, PLEASE NOTE WHICH DEPARTMENT: | | | |

 ATTACH TO THIS FORM ANY RELEVANT CORRESPONDENCE WITH THE OTHER DEPARTMENT(S).  NOTE: CROSS-LISTING OF COURSES REQUIRES WRITTEN APPROVAL FROM EACH DEPARTMENT AND FACULTY CONCERNED.  IF YOU WOULD LIKE TO REMOVE A CROSS-LISTING YOU MUST INCLUDE A WRITTEN EXPLANATION AGREED UPON BY BOTH DEPARTMENTS AFFECTED.

*FOR ALL NEW CROSS-LISTINGS PLEASE NOTE WHICH DEPARTMENT OWNS THE COURSE:

| CHANGE IN COURSE TITLE | X | PROVIDE THE **NEW** COURSE TITLE:<br><br>==MACHINE LEARNING METHODS FOR BRAIN MODELLING AND NEURAL DATA ANALYSIS== | |
|---|---|---|---|
| **CHANGE IN COURSE DESCRIPTION** | | **600-LEVEL COURSE** *(Undergraduate course for graduate credit) Please see #4 on page 2 of this form* | |
| **COURSE**<br><br>**CANCELLATION** | | PROVIDE THE REASON FOR COURSE CANCELLATION:<br><br><br>PLEASE NOTE: CROSS-LISTED (COMBINED SECTIONS) COURSES CAN ONLY BE CANCELLED BY THE DEPARTMENT WHO OWNS THE COURSE. | |
| **OTHER CHANGES** | X | EXPLAIN: CHANGE IN PREREQUISITES AND CORRECTION IN UNITS<br><br>==COURSE IS CROSS-LISTED AS: CSE 734 / NEURAL NETWORK MODELS OF COGNITION AND PERCEPTION==<br><br>==THE COURSE NAME SHOULD BE CHANGED THERE AS WELL TO: . CSE 734 / MACHINE LEARNING METHODS FOR BRAIN MODELLING AND NEURAL DATA ANALYSIS== | |

**BRIEF COURSE DESCRIPTION FOR CALENDAR** - Provide a brief description *(maximum 6 lines)* to be included in the Graduate Calendar.

**CONTENT/RATIONALE** - Provide a brief description, i.e., outline the topics or major sub-topics, and indicate the principal texts to be used.

This course previously focused entirely on computational models of the neural networks of the brain, hence the former title of "Neural Network Models for Cognition and Perception" was entirely appropriate. In recent years the content of the course has broadened to include brain-inspired machine learning methods, and applying machine learning methods to neural data. Hence the proposed new name of the course "Machine learning methods for brain modelling and neural data analysis" better reflects the content of the course, and also lets non-PNB graduate students in other graduate programs know that it may be a course of interest if they wish to learn more broadly about machine learning and big data analytic methods which is hugely popular in many different disciplines.

---

1. **STATEMENT OF PURPOSE (How does the course fit into the department's program and/or tie to existing Program Learning Outcomes from the program's IQAP cyclical review (if applicable)?)**

2. **EXPECTED ENROLMENT:**

3. **DESCRIBE IN DETAIL THE METHOD OF PRESENTATION OF COURSE MATERIAL (i.e., lectures, seminars):**

4.   **DESCRIBE IN DETAIL THE METHOD OF EVALUATION (**<u>percentage breakdown, if possible</u>**): (For 600-level course, indicate the** <u>Extra Work</u> **to be required of graduate students, i.e., exams, essays, etc.  Please also note if a lab or tutorial will be included.)**

5.   **TO PREVENT OVERLAP, IS A COURSE IN THE SAME OR A RELATED AREA OFFERED IN ANOTHER DEPARTMENT? IF YES, PLEASE ATTACH TO THIS FORM ANY RELEVANT CORRESPONDENCE WITH THE OTHER DEPARTMENT(S).**

6.   **IF THE COURSE IS INTENDED PRIMARILY FOR STUDENTS OUTSIDE YOUR DEPARTMENT, DO YOU HAVE THE SUPPORT OF THE DEPARTMENT/PROGRAM CONCERNED?**

**PLEASE PROVIDE THE CONTACT INFORMATION FOR THE RECOMMENDED CHANGE:**

Name:  Judith Shedden     Email: shedden@mcmaster.ca      Extension: 24345        Date submitted:  November 12, 2018

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

SGS /2015

**McMaster University**

**SCHOOL OF GRADUATE STUDIES**

☒ **RECOMMENDATION FOR CHANGE IN GRADUATE CURRICULUM - FOR CHANGE(S) INVOLVING COURSES & MILESTONES**

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| DEPARTMENT | Kinesiology | | |
|---|---|---|---|
| **COURSE TITLE** | Directed Reading in Kinesiology | | |

| **COURSE NUMBER** | 713 | **COURSE CREDIT** | | |
|---|---|---|---|---|
| | | 6 Unit Course  (   ) | 3 Unit Course  ( X ) | 1.5 Unit Course    (   ) |

| **INSTRUCTOR(S)** | Faculty |
|---|---|
| **REQUISITE(S)**<br><br>**(Pre/Co/Anti or program enrollment requirement)** | Registration in the Kinesiology Ph.D. Program |

| NATURE OF RECOMMENDATION  *(PLEASE CHECK APPROPRIATE BOX)* |
|---|
| **Is this change a result of an IQAP review?** ☐ **Yes** ☐ **No** |

| NEW COURSE | DATE TO BE OFFERED (FOR NEW COURSES ONLY): | WAS THE PROPOSED COURSE OFFERED ON DEAN'S APPROVAL? |
|---|---|---|
| WILL THE COURSE BE CROSS-LISTED (COMBINED SECTIONS) WITH ANOTHER DEPARTMENT?         IF YES, PLEASE NOTE WHICH DEPARTMENT: | | |
| ATTACH TO THIS FORM ANY RELEVANT CORRESPONDENCE WITH THE OTHER DEPARTMENT(S).  NOTE: CROSS-LISTING OF COURSES REQUIRES WRITTEN APPROVAL FROM EACH DEPARTMENT AND FACULTY CONCERNED.  IF YOU WOULD LIKE TO REMOVE A CROSS-LISTING YOU MUST INCLUDE A WRITTEN EXPLANATION AGREED UPON BY BOTH DEPARTMENTS AFFECTED.  <br><br>*FOR ALL NEW CROSS-LISTINGS PLEASE NOTE WHICH DEPARTMENT OWNS THE COURSE: | | |

| CHANGE IN COURSE TITLE | | PROVIDE THE **NEW** COURSE TITLE: |
|---|---|---|
| **CHANGE IN COURSE DESCRIPTION** | x | **600-LEVEL COURSE** *(Undergraduate course for graduate credit) Please see #4  on page 2 of this form* |

1

| COURSE CANCELLATION | | **PROVIDE THE REASON FOR COURSE CANCELLATION:**<br><br>**PLEASE NOTE: CROSS-LISTED (COMBINED SECTIONS) COURSES CAN ONLY BE CANCELLED BY THE DEPARTMENT WHO OWNS THE COURSE.** |
|---|---|---|
| **OTHER CHANGES** | x | **EXPLAIN:** Some concern has been expressed by course instructors that limiting the major evaluative component to only a grant proposal is too restrictive. Expanding the written component to include other research appropriate efforts (see below) would allow for greater instructor autonomy in course design and would enhance the student experience. |

**BRIEF COURSE DESCRIPTION FOR CALENDAR - Provide a brief description** *(maximum 6 lines)* **to be included in the Graduate Calendar.**

This course is for PhD candidates only and is designed as an advanced reading course in an area of kinesiology pertinent to the student's course of research. A course outline must be submitted to the Graduate Coordinator in the Department of Kinesiology at the start of term. As part of the course evaluation, candidates will be required to prepare a research paper, such as research grant proposal, systematic review of the literature or research report, that would meet the high academic standard of peer review .

**CONTENT/RATIONALE - Provide a brief description, i.e., outline the topics or major sub-topics, and indicate the principal texts to be used.**

---

**1. STATEMENT OF PURPOSE (How does the course fit into the department's program and/or tie to existing Program Learning Outcomes from the program's IQAP cyclical review (if applicable)?)**

Provides PhDs with a tailored exploratory readings experience that broadens current learning and develops analytical skills of review and information assimilation.

**2. EXPECTED ENROLMENT:**

Two per term, 3 terms per year

**3. DESCRIBE IN DETAIL THE METHOD OF PRESENTATION OF COURSE MATERIAL (i.e., lectures, seminars):**

A course outline listing the expectations of both the student and the evaluation plan (marking scheme) must be submitted to the Grad Coordinator in the Department of Kinesiology at the beginning of the term. As part of the course evaluation, students will be required to prepare a research paper that would meet the high academic standard of peer review such as research grant proposal, systematic review or research report. Depending on the expectations, the student may be required to prepare other material (agreed upon in the outline) to prove comprehensive knowledge of a reading topic.

**4. DESCRIBE IN DETAIL THE METHOD OF EVALUATION (<u>percentage breakdown, if possible</u>): (For 600-level course, indicate the <u>Extra Work</u> to be required of graduate students, i.e., exams, essays, etc. Please also note if a lab or tutorial will be included.)**

Each outline will contain an evaluation plan (marking scheme) that is agreed upon by the student and the instructor. Weighting will very from student to student, from instructor to instructor so that the course can be tailored for each student and his/her particular stream of research.

**5. TO PREVENT OVERLAP, IS A COURSE IN THE SAME OR A RELATED AREA OFFERED IN ANOTHER DEPARTMENT? IF YES, PLEASE ATTACH TO THIS FORM ANY RELEVANT CORRESPONDENCE WITH THE OTHER DEPARTMENT(S).**

None of which we are aware.

**6. IF THE COURSE IS INTENDED PRIMARILY FOR STUDENTS OUTSIDE YOUR DEPARTMENT, DO YOU HAVE THE SUPPORT OF THE DEPARTMENT/PROGRAM CONCERNED?**

Intended for KIN PhD students; students from other departments must receive permission from intended instructor and Associate Chair, Graduate Programs, Kinesiology. Instructors must be faculty members, associate members or adjunct members of Kinesiology.

**PLEASE PROVIDE THE CONTACT INFORMATION FOR THE RECOMMENDED CHANGE:**

Name: Jim Lyons        Email: lyonsjl@mcmaster.ca        Extension: 27899        Date submitted:

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

SGS /2015

☒ **RECOMMENDATION FOR CHANGE IN GRADUATE CURRICULUM - FOR CHANGE(S) INVOLVING COURSES & MILESTONES**

| IMPORTANT:  PLEASE READ THE FOLLOWING NOTES BEFORE COMPLETING THIS FORM: |
|---|
| 1.   This form must be completed for ALL course changes.  Sections of this form pertaining to your requested change must be completed. |
| 2.   An electronic version of this form (must be MS WORD not PDF) should be emailed to the Assistant Secretary, School of Graduate Studies (cbryce@mcmaster.ca). |
| 3.   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 | Kinesiology | | |
|---|---|---|---|
| **COURSE TITLE** | Experiential Learning in Kinesiology | | |
| **COURSE NUMBER** | 730 | **COURSE CREDIT** | |
| | | 6 Unit Course  (   )     3 Unit Course  ( X )     1.5 Unit Course    (   ) | |
| **INSTRUCTOR(S)** | Faculty | | |
| **REQUISITE(S)** **(Pre/Co/Anti or program enrollment requirement)** | Registration in the Kinesiology Ph.D. Program | | |

| NATURE OF RECOMMENDATION  *(PLEASE CHECK APPROPRIATE BOX)* |
|---|
| **Is this change a result of an IQAP review? ☐ Yes ☐ No** |

| NEW COURSE | X | DATE TO BE OFFERED (FOR NEW COURSES ONLY): September 2019 | WAS THE PROPOSED COURSE OFFERED ON DEAN'S APPROVAL? |
|---|---|---|---|
| WILL THE COURSE BE CROSS-LISTED (COMBINED SECTIONS) WITH ANOTHER DEPARTMENT?  NO  IF YES, PLEASE NOTE WHICH DEPARTMENT: ATTACH TO THIS FORM ANY RELEVANT CORRESPONDENCE WITH THE OTHER DEPARTMENT(S).  NOTE: CROSS-LISTING OF COURSES REQUIRES WRITTEN APPROVAL FROM EACH DEPARTMENT AND FACULTY CONCERNED.  IF YOU WOULD LIKE TO REMOVE A CROSS-LISTING YOU MUST INCLUDE A WRITTEN EXPLANATION AGREED UPON BY BOTH DEPARTMENTS AFFECTED. *FOR ALL NEW CROSS-LISTINGS PLEASE NOTE WHICH DEPARTMENT OWNS THE COURSE: | | | |
| **CHANGE IN COURSE TITLE** | | PROVIDE THE NEW COURSE TITLE: | |
| **CHANGE IN COURSE DESCRIPTION** | | 600-LEVEL COURSE *(Undergraduate course for graduate credit) Please see #4  on page 2 of this form* | |

| | | |
|---|---|---|
| **COURSE**<br><br>**CANCELLATION** | | **PROVIDE THE REASON FOR COURSE CANCELLATION:**<br><br><br>**PLEASE NOTE: CROSS-LISTED (COMBINED SECTIONS) COURSES CAN ONLY BE CANCELLED BY THE DEPARTMENT WHO OWNS THE COURSE.** |
| **OTHER CHANGES** | x | **EXPLAIN:** |

**BRIEF COURSE DESCRIPTION FOR CALENDAR - Provide a brief description *(maximum 6 lines)* to be included in the Graduate Calendar.**

This course is an experiential learning opportunity that may take the form of an intensive course, workshop, or field placement where qualified graduate students gain advanced training in an area of Kinesiology pertinent to the student's course of research. Successful completion of this learning opportunity is equivalent to a KINESIOL graduate course credit. These learning opportunities will vary from year to year in terms of duration and location, and may be supervised by, or otherwise include involvement with, faculty from across the department, university as well as colleagues worldwide. Please contact the Graduate Administrator/Associate Chair Graduate Program well in advance of the start of the course to confirm eligibility.

**CONTENT/RATIONALE - Provide a brief description, i.e., outline the topics or major sub-topics, and indicate the principal texts to be used.**

Specific topics covered in this course will vary on a case by case basis as determined by the specific learning opportunity or placement. Generally, topics covered will revolve around issues relevant to the study of human movement with an emphasis on content and experiences not typically available to the student through our current course offerings. There will be no `principle` textbook used.

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**1. STATEMENT OF PURPOSE (How does the course fit into the department's program and/or tie to existing Program Learning Outcomes from the program's IQAP cyclical review (if applicable)?)**

**This course will allow the Department to increase Experiential Learning opportunities for our graduate students,**

**2. EXPECTED ENROLMENT:**

Two per term, 3 terms per year

**3. DESCRIBE IN DETAIL THE METHOD OF PRESENTATION OF COURSE MATERIAL (i.e., lectures, seminars):**

Depending upon the type of placement (e.g., intensive "boot camp" styled course, workshop, field placement, etc.), the learning opportunities associated with this course may vary from year to year in terms of lengths and locations as well as with respect to specific content requirements. Although a Kinesiology faculty member will be appointed as the primary course supervisor, the placement may involve supervision by, or otherwise interaction with faculty beyond the department. Specific methods of presentation of course material may also vary depending upon the type of learning experience.

**4. DESCRIBE IN DETAIL THE METHOD OF EVALUATION (percentage breakdown, if possible): (For 600-level course, indicate the Extra Work to be required of graduate students, i.e., exams, essays, etc. Please also note if a lab or tutorial will be included.)**

Given the potential year to year variability in available placements (see Section 3 above), specific learning opportunities and their associated methods of evaluation, will likewise vary. For this reason, it is particularly important that a detailed course outline be completed for this course. Each such outline must contain a detailed evaluation plan (marking scheme) that is agreed upon by the

student, the instructor and the placement supervisor (if not the instructor).  Although grade weighting may vary from student to student and from instructor to instructor (so that the course can be tailored for each student and his/her particular stream of research) it is important that a level of evaluative consistency across experiences be maintained. Thus, as part of the course evaluation, all students will be required to prepare a research paper, such as a research grant proposal, systematic or scoped review of the literature, or research report, that would meet the high academic standard of peer review. Where appropriate, additional methods of evaluation are encourasged and should also be considered. These may include external student assessments from the placement supervisor, progress reports, student self-reflections on the specific experiential opportunity, etc.)

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5.  **TO PREVENT OVERLAP, IS A COURSE IN THE SAME OR A RELATED AREA OFFERED IN ANOTHER DEPARTMENT? IF YES, PLEASE ATTACH TO THIS FORM ANY RELEVANT CORRESPONDENCE WITH THE OTHER DEPARTMENT(S).**

None of which we are aware.

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6.  **IF THE COURSE IS INTENDED PRIMARILY FOR STUDENTS OUTSIDE YOUR DEPARTMENT, DO YOU HAVE THE SUPPORT OF THE DEPARTMENT/PROGRAM CONCERNED?**

Intended for KINESIOLOGY PhD students; students from other departments must receive permission from intended instructor and Associate Chair, Graduate Studies, Kinesiology.  Instructors must be faculty members, associate members or adjunct members of Kinesiology.

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**PLEASE PROVIDE THE CONTACT INFORMATION FOR THE RECOMMENDED CHANGE:**

Name:  Jim Lyons          Email:  lyonsjl@mcmaster.ca          Extension: 27899          Date submitted:

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

SGS /2015

To : Graduate Council

From : Christina Bryce
Assistant Graduate Secretary

_____

At its meeting on March 5th, 2019 the Faculty of Social Sciences Graduate Curriculum and Policy Committee approved the following recommendations.

Please note that these recommendations were approved by the Faculty of Social Sciences.

**For Approval of Graduate Council:**

      i. **Anthropology**
          1. **Change to Research Areas**

      ii. **Social Work**
          1. **Change to Calendar Copy**

**For Information of Graduate Council:**

      iii. **Religious Studies**
          1. **New Course:**
              a. 6Z06 Introduction to Reading Japanese

      iv. **Sociology**
          1. **New Course:**
              a. 723 Participatory and Community-Based Social Research

**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. <br><br> 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). <br><br> 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** | Anthropology | | |
|---|---|---|---|
| **NAME OF PROGRAM and PLAN** | Masters | | |
| **DEGREE** | **Masters** | | |
| **NATURE OF RECOMMENDATION** *(PLEASE CHECK APPROPRIATE BOX)* <br><br> **Is this change a 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 IN THE GRADUATE CALENDAR** | | **EXPLAIN:** <br><br> Remove Linguistic Anthropology | | | |
| **OTHER CHANGES** | **EXPLAIN:** | | | | |

**DESCRIBE THE <u>EXISTING</u> REQUIREMENT/PROCEDURE:**

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

The department has decided to remove Linguistic Anthropology from the calendar as we no longer support this field of our 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?):**

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

Fall/Winter 2019/2020

**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):**

**CONTACT INFORMATION FOR THE RECOMMENDED CHANGE:**

Name:  John Silva          Email:  silvaj@mcmaster.ca          Extension:  24424          Date submitted: 07/02/2019

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

SGS/2013

**SCHOOL OF GRADUATE STUDIES**

**RECOMMENDATION FOR CHANGE IN GRADUATE CURRICULUM - FOR CHANGE(S) INVOLVING DEGREE PROGRAM REQUIREMENTS / PROCEDURES / MILESTONES**

<table>
<tr>
<td colspan="2"><u>IMPORTANT: PLEASE READ THE FOLLOWING NOTES BEFORE COMPLETING THIS FORM</u>:<br><br>1. This form must be completed for <b><u>ALL</u></b> changes involving degree program requirements/procedures. <b><u>All</u></b> sections of this form <b><u>must</u></b> be completed.<br><br>2. An electronic version of this form (must be in MS WORD <b><u>not</u></b> PDF) should be emailed to the Assistant Secretary, School of Graduate Studies (cbryce@mcmaster.ca).<br><br>3. A representative from the department is <b><u>required to attend</u></b> the Faculty Curriculum and Policy Committee meeting during which this recommendation for change in graduate curriculum will be discussed.</td>
</tr>
<tr>
<td><b>DEPARTMENT</b></td>
<td>School of Social Work</td>
</tr>
<tr>
<td><b>NAME OF PROGRAM and PLAN</b></td>
<td>Updating Calendar copy for:<br>GDip Community-Engaged Research and Evaluation (ENGAGEDIP)<br>MSW Critical Analysis (CSOCWRKMSW) & Critical Leadership (CRTLEADMSW)</td>
</tr>
<tr>
<td><b>DEGREE</b></td>
<td><b>Graduate Diploma and Masters of Social Work</b></td>
</tr>
</table>

<table>
<tr>
<td colspan="3"><b>NATURE OF RECOMMENDATION</b> <i>(PLEASE CHECK APPROPRIATE BOX)</i><br><br><b>Is this change a result of an IQAP review? ☐ Yes ☒ No</b></td>
</tr>
<tr>
<td colspan="3"><b>CREATION OF NEW MILESTONE ☐</b></td>
</tr>
<tr>
<td><b>CHANGE IN ADMISSION REQUIREMENTS</b></td>
<td><b>CHANGE IN COMPREHENSIVE EXAMINATION PROCEDURE</b></td>
<td><b>CHANGE IN COURSE REQUIREMENTS</b></td>
</tr>
</table>

<table>
<tr>
<td><b>CHANGE IN THE DESCRIPTION OF A <u>SECTION</u> IN THE GRADUATE CALENDAR</b></td>
<td>X</td>
<td><b>EXPLAIN:</b><br><br>With introduction of new GDip Community-Engaged Research (ENGAGEDIP) program in January 2019, add "advanced credit" wording to MSW and GDip Calendar sections.</td>
</tr>
<tr>
<td><b>OTHER CHANGES</b></td>
<td>X</td>
<td><b>EXPLAIN:</b><br><br>With implementation of "Student Advisor Summary" table in mosaic, needed to update MSW Critical Analysis (CSOCWRKMSW) elective course offerings Calendar wording so an "in-program" petition form is not needed for every student that takes a course outside our School.</td>
</tr>
</table>

**DESCRIBE THE <u>EXISTING</u> REQUIREMENT/PROCEDURE:**

# Current MSW Calendar Copy:

**Critical Analysis of Social Work**

A commitment to critical analysis in the service of social justice underpins this stream in the M.S.W. program. This degree focuses on the development of analytic skills with regard to social work practice and social policy. Students will build on existing knowledge to increase their ability to identify and analyze practice and policy theories and examine how they are utilized within a changing social, political, economic and global context.

Students will engage analyzing social problems and policies, critique existing practices, challenge established knowledge, research alternative approaches and contribute to the development of innovative policies and practices.

This MSW stream prepares students for advanced practice grounded in the critical analysis of social work - analysis understood as the crucial foundation of change processes aimed at fostering just practices and policies. Graduates exercise the critical conceptual abilities and research skills developed in the program in a wide range of agency and community settings, with an appreciation of the intersection of practice and policy at micro, meso and macro levels.

Candidates may be enrolled on a full- or part-time basis. Full-time students will complete the degree in twelve consecutive months of study, beginning in September. Part-time students will normally be expected to complete the degree in about three years.

**Critical Leadership in Social Services and Communities**

This stream in the M.S.W. program is grounded in a recognition of the contemporary conditions of social service and community work, and in expansive and critical definitions of leadership. The degree aims to foster progressive leadership in the community and social service sectors.

Students will engage foundational conceptual frameworks underpinning critical practice and policy in social work. They will build on existing knowledge and work experience to identify and analyze how contemporary social, political and economic forces are (re)shaping social services and communities, and particularly how these forces shape leadership and leadership practices, including practices of research and evaluation.

This M.S.W. degree prepares students for formal and informal leadership roles in social and community services. Students will consider a range of theories of critical leadership and of social and organizational change, and demonstrate a capacity to apply coursework knowledge and concepts in practice by undertaking a leadership practicum in a social or community service setting.

Candidates may be enrolled on a full-time or part-time basis. Full-time students will complete the degree in twelve consecutive months of study, beginning in September. Part-time students will normally complete the degree in three years.

**Admission**

For Students applying to the Critical Analysis of Social Work stream:
Admission requirements:

- B.S.W. degree from an accredited social work program

- half course in introductory social research methods;

2

- B+ standing in senior level social work courses.

For Students applying to the Critical Leadership in Social Services and Communities stream:
Admission requirements:

- B.S.W. degree from an accredited social work program

- half course in introductory social research methods

- B+ standing in senior level social work courses

- experience working in social services or communities / community services

**Curriculum**

For Students in the Critical Analysis of Social Work stream, the curriculum has three main components:

1. Required courses that provide the content and methodological skills necessary for policy and practice analysis;

2. Elective courses that enable students to deepen their knowledge of practice and policy in the inner workings of social agencies and in social change efforts at the community level;

3. Thesis designed to integrate analytical and evaluative skills and to contribute to the critical analysis of policy and practice.

**Required Courses**

**Two half courses:**

- SOC WORK 700 / Social Work Practice: Critical Frameworks

- SOC WORK 701 / Social Policy: Critical Frameworks

One full course (over all three terms):

- SOC WORK 739 / Critical Approaches to Social Work Knowledge & Research Methods

**Two elective courses**

At least one of:

- SOC WORK 721 / Changing Communities: Tensions and Possibility for Citizenship and Social Justice

- SOC WORK 740 / Changing Social Service Organizations: Implications for Workers and Service Users

**One additional elective**

Electives enable students to deepen their knowledge in a substantive field of their choice and to develop a capacity to analyze systematically existing policies or practices in that field. All students take one elective which can be selected from the following:

- SOC WORK 705 / Directed Readings

- SOC WORK 721 / Changing Communities: Tensions and Possibility for Citizenship and Social Justice

- SOC WORK 722 / Topics in Advanced Social Work

- SOC WORK 740 / Changing Social Service Organizations: Implications for Workers and Service Users

**Additional Information**

In planning the course of study, students should consult with their advisor concerning possible elective(s) which may be taken outside the School of Social Work. Electives offered in a given year are subject to the availability of faculty.

**Thesis**

Each student is required to complete a thesis. It offers students an opportunity to build upon their particular experiences and interests and upon perspectives and materials introduced in courses, and to demonstrate their capacities for critical analysis. The thesis (12,500 words) is supervised by a faculty member and orally examined by a committee including the supervisor and two other faculty members.

**Curriculum**

For Students in Critical Leadership in Social Services and Communities, the curriculum has two main components:

- Required courses that provide foundational knowledge of the critical analysis of social work practice, and the critical analysis of policy; and required courses that provide analyses and conceptual frameworks about changing conditions in social services and communities, and about leadership

- A practicum of 450 hours that involves a practical experience of leadership. An MSW-prepared social worker will provide field instruction and mentorship.

**Required Courses**

- SOC WORK 700 / Social Work Practice: Critical Frameworks

- SOC WORK 701 / Social Policy: Critical Frameworks

- SOC WORK 741 / Changing Social Services, Changing Communities: Focus on Leadership

- SOC WORK 742 / Organizational and Social Change: Theories, Practices and Possibilities for Leadership

- SOC WORK 743 / Critical Approaches to Evidence and Evaluation in Social Services & Communities

- SOC WORK 750 / Leadership Seminar

- SOC WORK 751 / Leadership Practicum

**And one of:**

- SOC WORK 740 / Changing Social Service Organizations: Implications for Workers and Service Users

- SOC WORK 721 / Changing Communities: Tensions and Possibility for Citizenship and Social Justice

**Practicum**

Each student will have a leadership practicum (SOC WORK 751) in a social service agency or community organization. Students will take on a leadership project - for example, lead the development of a new policy, move a service initiative forward, or explore and provide recommendations about how a community need might be better met. Field instruction will be provided by a social worker who holds an MSW degree. Students' experiences, observations and actions in the field setting will become topics for reflection in the accompanying seminar (SOC WORK 750). The practicum will be 450 hours long (this number of hours is required for accreditation by the Canadian Association for Social Work Education).

# Current Graduate Diploma in Community-Engaged Research and Evaluation Calendar copy:

The Graduate Diploma in Community-Engaged Research and Evaluation aims to foster critical and ethical practice in community-engaged research and evaluation. Students who complete the program will understand the historical, theoretical and ethical bases of community-based research (CBR) and be able to apply and communicate CBR principles; understand and be able to apply critical conceptual frameworks to evaluation practices in social services and communities, and identify justice-oriented alternatives or improvements; demonstrate a capacity to undertake a community-engaged research or evaluation project that reflects concepts and ethical frameworks highlighted in the program.

Candidates are enrolled on a part-time basis, and will normally complete the program in sixteen months of study, beginning in January.

**Admission**

To be eligible for admission to the Community-Engaged Research and Evaluation diploma program, applicants must have:

• A completed B.S.W. or B.A. degree with a B+ average on senior level courses;

• Experience working in social services or communities / community services.

Applications should be made to the School of Social Work prior to April 15th for admission the following January.

**Curriculum**

**Two half courses**:

SOCSCI 701 / Critical Approaches to Community Based Research

SOC WORK 743 / Critical Approaches to Evidence and Evaluation in Social Services & Communities

**One full course (over two terms):**

SOC WORK 744 / Research Experience and Seminar

## Current Graduate Diploma in Critical Leadership in Social Services and Communities Calendar copy:

This Graduate Diploma is designed for people who have an MSW or an MA and who are currently providing formal or informal leadership in social services or communities. It offers critical analyses and conceptual frameworks about changing conditions in social services and communities (with particular attention to evidence-based practice, audit and accountability); a range of models for progressive and transformative leadership, and opportunities to reflect on leadership practice with respected local leaders; opportunities to share knowledge with people who are engaged in the daily work of leading and sustaining progressive public services.

Candidates are enrolled on a full-time or part-time basis. Full-time students will complete the program in twelve consecutive months of study, beginning in September. Part-time students will normally be expected to complete the diploma in two years.

### Admission
To be eligible for admission to the Critical Leadership in Social Services and Communities diploma program, applicants must have:

A completed M.S.W. or M.A. degree with an average of at least an A- on whole degree. In exceptional circumstances, applicants with a B.S.W. or B.A. and an A- average on senior level undergraduate courses may apply if they have extensive leadership experience;

Community or social service leadership experience.

### Curriculum
Students take one of two courses that consider specific contexts of social work practice: institutional contexts (SOC WORK 740 ) or community contexts (SOC WORK 721 ). They take two courses focused explicitly on aspects of leadership: a theory and praxis course, and a course focused on leadership specifically in the contexts of contemporary social services and communities. Their final course considers critical approaches to evidence and evaluation, a key feature of contemporary leadership.

Students will be required to complete four (4) half courses; three required and one elective which include:

### Three Required Courses:

SOC WORK 741 / Changing Social Services, Changing Communities: Focus on Leadership

SOC WORK 742 / Organizational and Social Change: Theories, Practices and Possibilities for Leadership

SOC WORK 743 / Critical Approaches to Evidence and Evaluation in Social Services & Communities

### One Elective Course:

One of:

SOC WORK 740 / Changing Social Service Organizations: Implications for Workers and Service Users

SOC WORK 721 / Changing Communities: Tensions and Possibility for Citizenship and Social Justice

### Additional Comments

Students entering the Critical Leadership in Social Services and Communities diploma program who have already successfully completed SOC WORK 721 in their previous master's degree, must take either SOC WORK 740 or an elective (in the School of Social Work or in another department) approved by the School's Chair of Graduate Studies.

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

# Recommended Change to MSW Calendar Copy:

**Critical Analysis of Social Work**

A commitment to critical analysis in the service of social justice underpins this stream in the M.S.W. program. This degree focuses on the development of analytic skills with regard to social work practice and social policy. Students will build on existing knowledge to increase their ability to identify and analyze practice and policy theories and examine how they are utilized within a changing social, political, economic and global context.

Students will engage analyzing social problems and policies, critique existing practices, challenge established knowledge, research alternative approaches and contribute to the development of innovative policies and practices.

This MSW stream prepares students for advanced practice grounded in the critical analysis of social work - analysis understood as the crucial foundation of change processes aimed at fostering just practices and policies. Graduates exercise the critical conceptual abilities and research skills developed in the program in a wide range of agency and community settings, with an appreciation of the intersection of practice and policy at micro, meso and macro levels.

Candidates may be enrolled on a full- or part-time basis. Full-time students will complete the degree in twelve consecutive months of study, beginning in September. Part-time students will normally be expected to complete the degree in about three years.

**Critical Leadership in Social Services and Communities**

This stream in the M.S.W. program is grounded in a recognition of the contemporary conditions of social service and community work, and in expansive and critical definitions of leadership. The degree aims to foster progressive leadership in the community and social service sectors.

Students will engage foundational conceptual frameworks underpinning critical practice and policy in social work. They will build on existing knowledge and work experience to identify and analyze how contemporary social, political and economic forces are (re)shaping social services and communities, and particularly how these forces shape leadership and leadership practices, including practices of research and evaluation.

This M.S.W. degree prepares students for formal and informal leadership roles in social and community services. Students will consider a range of theories of critical leadership and of social and organizational change, and demonstrate a capacity to apply coursework knowledge and concepts in practice by undertaking a leadership practicum in a social or community service setting.

Candidates may be enrolled on a full-time or part-time basis. Full-time students will complete the degree in twelve consecutive months of study, beginning in September. Part-time students will normally complete the degree in three years.

**Admission**

For Students applying to the Critical Analysis of Social Work stream:
Admission requirements:

- B.S.W. degree from an accredited social work program

- half course in introductory social research methods;

- B+ standing in senior level social work courses.

For Students applying to the Critical Leadership in Social Services and Communities stream:

Admission requirements:

- B.S.W. degree from an accredited social work program

- half course in introductory social research methods

- B+ standing in senior level social work courses

- experience working in social services or communities / community services

**Curriculum**

For Students in the Critical Analysis of Social Work stream, the curriculum has three main components:

4. Required courses that provide the content and methodological skills necessary for policy and practice analysis;

5. Elective courses that enable students to deepen their knowledge of practice and policy in the inner workings of social agencies and in social change efforts at the community level;

6. Thesis designed to integrate analytical and evaluative skills and to contribute to the critical analysis of policy and practice.

**Required Courses**

**Two half courses:**

- SOC WORK 700 / Social Work Practice: Critical Frameworks

- SOC WORK 701 / Social Policy: Critical Frameworks

**One full course (over all three terms):**

- SOC WORK 739 / Critical Approaches to Social Work Knowledge & Research Methods

**Two elective courses**

At least one of:

- SOC WORK 721 / Changing Communities: Tensions and Possibility for Citizenship and Social Justice

- SOC WORK 740 / Changing Social Service Organizations: Implications for Workers and Service Users

**One additional elective**

One elective course offered by Social Work OR by another department or academic unit (provided that permission has been obtained from those departments or academic units, and School of Social Work's Graduate Chair).

~~Electives enable students to deepen their knowledge in a substantive field of their choice and to develop a capacity to analyze systematically existing policies or practices in that field. All students take one elective which can be selected from the following:~~

- ~~SOC WORK 705 / Directed Readings~~

- ~~SOC WORK 721 / Changing Communities: Tensions and Possibility for Citizenship and Social Justice~~

- ~~SOC WORK 722 / Topics in Advanced Social Work~~

- ~~SOC WORK 740 / Changing Social Service Organizations: Implications for Workers and Service Users~~

**~~Additional Information~~**

~~In planning the course of study, students should consult with their advisor concerning possible elective(s) which may be taken outside the School of Social Work. Electives offered in a given year are subject to the availability of faculty.~~

**Thesis**

Each student is required to complete a thesis. It offers students an opportunity to build upon their particular experiences and interests and upon perspectives and materials introduced in courses, and to demonstrate their capacities for critical analysis. The thesis (12,500 words) is supervised by a faculty member and orally examined by a committee including the supervisor and two other faculty members.

**Curriculum**

For Students in Critical Leadership in Social Services and Communities, the curriculum has two main components:

- Required courses that provide foundational knowledge of the critical analysis of social work practice, and the critical analysis of policy; and required courses that provide analyses and conceptual frameworks about changing conditions in social services and communities, and about leadership

- A practicum of 450 hours that involves a practical experience of leadership. An MSW-prepared social worker will provide field instruction and mentorship.

**Required Courses**

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- SOC WORK 700 / Social Work Practice: Critical Frameworks

- SOC WORK 701 / Social Policy: Critical Frameworks

- SOC WORK 741 / Changing Social Services, Changing Communities: Focus on Leadership

- SOC WORK 742 / Organizational and Social Change: Theories, Practices and Possibilities for Leadership

- SOC WORK 743 / Critical Approaches to Evidence and Evaluation in Social Services & Communities

- SOC WORK 750 / Leadership Seminar

- SOC WORK 751 / Leadership Practicum

**And one of:**

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- SOC WORK 740 / Changing Social Service Organizations: Implications for Workers and Service Users

- SOC WORK 721 / Changing Communities: Tensions and Possibility for Citizenship and Social Justice

**Practicum**

Each student will have a leadership practicum (SOC WORK 751) in a social service agency or community

organization. Students will take on a leadership project - for example, lead the development of a new policy, move a service initiative forward, or explore and provide recommendations about how a community need might be better met. Field instruction will be provided by a social worker who holds an MSW degree. Students' experiences, observations and actions in the field setting will become topics for reflection in the accompanying seminar (SOC WORK 750). The practicum will be 450 hours long (this number of hours is required for accreditation by the Canadian Association for Social Work Education).

## Additional Information

 Students entering either stream of the MSW program who have successfully completed the **Community-Engaged Research and Evaluation graduate diploma** may receive 3 units of advanced credit if approved by the School of Social Work's Graduate Chair.

## Recommended Change to: Graduate Diploma in Community-Engaged Research and Evaluation Calendar copy:

The Graduate Diploma in Community-Engaged Research and Evaluation aims to foster critical and ethical practice in community-engaged research and evaluation. Students who complete the program will understand the historical, theoretical and ethical bases of community-based research (CBR) and be able to apply and communicate CBR principles; understand and be able to apply critical conceptual frameworks to evaluation practices in social services and communities, and identify justice-oriented alternatives or improvements; demonstrate a capacity to undertake a community-engaged research or evaluation project that reflects concepts and ethical frameworks highlighted in the program.

Candidates are enrolled on a part-time basis, and will normally complete the program in sixteen months of study, beginning in January.

**Admission**

To be eligible for admission to the Community-Engaged Research and Evaluation diploma program, applicants must have:

• A completed B.S.W. or B.A. degree with a B+ average on senior level courses;

• Experience working in social services or communities / community services.

Applications should be made to the School of Social Work prior to April 15th for admission the following January.

**Curriculum**

**Two half courses**:

SOCSCI 701 / Critical Approaches to Community Based Research

SOC WORK 743 / Critical Approaches to Evidence and Evaluation in Social Services & Communities

**One full course (over two terms):**

SOC WORK 744 / Research Experience and Seminar

Additional Information:

Students entering the **Community-Engaged Research and Evaluation** diploma program who have already successfully completed Soc Work 743 or Soc Sci 701 may receive one of these courses as advanced credit if approved by the School of Social Work's Graduate Chair.

# Recommended change to Graduate Diploma in Critical Leadership in Social Services and Communities Calendar copy:

This Graduate Diploma is designed for people who have an MSW or an MA and who are currently providing formal or informal leadership in social services or communities. It offers critical analyses and conceptual frameworks about changing conditions in social services and communities (with particular attention to evidence-based practice, audit and accountability); a range of models for progressive and transformative leadership, and opportunities to reflect on leadership practice with respected local leaders; opportunities to share knowledge with people who are engaged in the daily work of leading and sustaining progressive public services.

Candidates are enrolled on a full-time or part-time basis. Full-time students will complete the program in twelve consecutive months of study, beginning in September. Part-time students will normally be expected to complete the diploma in two years.

**Admission**
To be eligible for admission to the Critical Leadership in Social Services and Communities diploma program, applicants  must have:

A completed M.S.W. or M.A. degree with an average of at least an A- on whole degree. In exceptional circumstances, applicants with a B.S.W. or B.A. and an A- average on senior level undergraduate courses may apply if they have extensive leadership experience;

Community or social service leadership experience.

**Curriculum**
Students take one of two courses that consider specific contexts of social work practice:  institutional contexts (SOC WORK 740 ) or community contexts (SOC WORK 721 ). They take two courses focused explicitly on aspects of leadership: a theory and praxis course, and a course focused on leadership specifically in the contexts of contemporary social services and communities. Their final course considers critical approaches to evidence and evaluation, a key feature of contemporary leadership.

Students will be required to complete four (4) half courses; three required and one elective which include:

**Three Required Courses:**

SOC WORK 741 / Changing Social Services, Changing Communities: Focus on Leadership

SOC WORK 742 / Organizational and Social Change: Theories, Practices and Possibilities for Leadership

SOC WORK 743 / Critical Approaches to Evidence and Evaluation in Social Services & Communities

**One Elective Course:**

One of:

SOC WORK 740 / Changing Social Service Organizations: Implications for Workers and Service Users

SOC WORK 721 / Changing Communities: Tensions and Possibility for Citizenship and Social Justice

**Additional Comments**

i)   Students entering the Critical Leadership in Social Services and Communities diploma program who have already successfully completed SOC WORK 721 in their previous master's degree, must take either SOC WORK 740 or an elective (in the School of Social Work or in another department) approved by the School of Social Work's Chair of Graduate Studies Chair.

ii)   Students entering the Critical Leadership in Social Services and Communities graduate diploma program who have already successfully completed Soc Work 743 may receive advanced credit if approved by the School of Social Work's Graduate Chair.

**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?):**

Re: Advanced Credit
With introduction of new Community-Engaged Research and Evaluation (ENGAGEDIP) graduate diploma program starting in January 2019, we see a need to formalize advanced credit option for students who have already taken Soc Work 743 and/or SocSci 701 as part of their previous Master's or Graduate Diploma program.

Re: Elective Course taken in MSW Critical Analysis program
Since Calendar wording is being transferred over to "Student Advisor Summary" table in mosaic, clarification on courses taken outside the School of Social Work for elective credit in the MSW Critical Analysis (CSOCWRKMSW) program was needed.

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

September 2019.

**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):**

See above.

**CONTACT INFORMATION FOR THE RECOMMENDED CHANGE:**

Name:  Chris Sinding        Email: sinding@mcmaster.ca    Extension: 22740  Date submitted:  Dec. 14, 2018

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

SGS/2013