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 : Members of Graduate Council

From : Christina Bryce
Assistant Graduate Secretary

The next meeting of Graduate Council will be held on **Tuesday February 19th 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 January 22nd, 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. Graduate Student Life Update
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. New Scholarships
XI. Universal Design for Learning
XII. Instructor Guide
XIII. Final Assessment Reports

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Tuesday January 22nd at 9:30 am in Council Chambers (GH-111)

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

Regrets: Dr. L. Thabane, Dr. S. Bannerman, Dr. M. Gough

By Invitation: Ms. C. Mascotto

I. Minutes of the meeting of December 4th, 2018

It was duly moved and seconded **'that Graduate Council approve the minutes of the meeting of December 4th, 2018'**.

The motion was **carried**.

II. The motion was carried. 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 announcement from the provincial government announcement around changes to tuition cuts and fee changes starting September 2019, noting there would be more detail when the budget was released in March;
- The uncertainty around graduate growth beyond the expiration of the current SMA.

In response to a question from a member, Dr. Welch confirmed that students from within Canada but outside of Ontario would be affected by the decrease as those groups aren't treated any differently for the purposes of tuition. In response to another question he noted that they are not sure what the effect will be on international Masters tuition rates but that a tuition rate decrease didn't seem to be required for this group. The arrangement at McMaster where international Ph.D. students paid domestic rates remained unchanged.

IV. Report from the Graduate Associate Deans

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

- The development of a handbook for graduate course instructors, noting that feedback has been positive and that input from Graduate Council would be welcome.

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

- An interesting meeting with Engineering for a program working on a stream in technology and design which may lead to some collaboration with communication and multimedia;
- The Faculty of Humanities Review report is now in and will be posted soon;
- The Cotutelle Working Group will be having another meeting shortly.

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

- An alumni event held at the University Club;
- The launch of the student ambassador program.

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

- The Faculty is exploring the development of a new professional program;
- The development of a joint degree possibilities with universities in Italy and France;
- The exploration of online components to graduate programs, noting that a number of programs have been approached by companies that help with online graduate education.

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

- The development of a Faculty policy about minimum funding retained when a student wins a big award;
- The work of the sub-committee of the Graduate Council Program Working Group regarding the definition of a course, including the how a unit count is developed when a course is not a traditional lecture-based. He asked for feedback and noted they are trying to make sure that they build a policy that's comprehensive.

Dr. Hassanein had no report

V. Report from the Associate Registrar and Graduate Secretary

There was no report.

VI. Graduate Student Life Update

Ms. Mascotto reported on the following items:

- Orientation for students starting in January, including events aimed at post-docs;
- Registration for Three Minute Thesis was open and closes on February 5th, nothing that McMaster is also hosting the provincial Three Minutes Thesis Competition;
- Graduate Writing support, including a February writing bootcamp and writing workshops with graduate writing consultant.

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

Dr. Hayward explained that the Biomedical Discovery and Commercialization internships have changed and the program has proposed a change to their calendar copy to reflect that. The second change

proposed was from Health Research Methodology, who discontinued a course and launched new courses. There was no overall change in their course requirements.

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

The motion was **carried**.

VIII. Scholarship Committee Membership Change

It was duly moved and seconded, **'that Graduate Council approve the changes to Scholarship Committee membership as set out in the document.'**

The motion was **carried**.

IX. New Scholarship

Dr. Welch noted that there was a friendly amendment to the scholarship as presented so that the 'Office' of Graduate Studies be replaced with 'School' of Graduate Studies.

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

The motion was carried.

X. Universal Design for Learning

This item was deferred for future meeting.

XI. Other Business

Ms. Lewis reported that the library had celebrated the anniversary of Bertram Russel coming to university. She noted that they are now turning their attention to celebrate STEM with a host of events that are going to be rolled out.

The meeting was adjourned at 10:02 am.

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To : Graduate Council

From : Christina Bryce
Assistant Graduate Secretary

At its meeting on November 28th and January 17th the Faculty of Engineering Graduate Curriculum and Policy Committee approved the following graduate curriculum recommendations.

Please note that these recommendations were approved at the January 29th meeting of the Faculty of Engineering Meeting.

FOR APPROVAL OF GRADUATE COUNCIL:

- **Change to Engineering Co-op Option**
- **Biomedical Engineering***
  - **Changes to Calendar Copy**
- **School of Engineering Practice and Technology**
  - **Program Requirement and Calendar Copy Changes**
- **Computing and Software**
  - **Change in Admission, Course Requirements and Calendar Copy**
  - **Change in Transfer Exam Process**
- **Engineering Physics**
  - **Change in Course Requirements and Calendar Copy**

FOR INFORMATION OF GRADUATE COUNCIL:

- **eHealth****
  - **Change in Course Description**
    - 701 Research and Evaluation Methods in eHealth
- **School of Engineering Practice and Technology**
  - New Courses
    - 6CG3 Fundamentals of computer graphics and animation development
    - 6VE3 Visual Effects and Animation Production Technology
    - 704 Project in Public Policy

        - 791 Augmented Reality, Virtual Reality and Mixed Reality
        - 792 GPU Intensive applications for real-time projects

    - **Change to Requisites**
        - 759 Prototyping Web and Mobile Applications
        - 761 Human-Centred Design
        - 770 Total Sustainability Management

- **Civil Engineering**
    - **New Course**
        - 745 Multivariate Statistical Models and Data Processing Methods in Civil Engineering
    - **New Cross-Listed Course**
        - 741 Discrete Choice Analysis

- **Computing and Software**
    - **New Courses**
        - 773 Randomized Algorithms and Probabilistic Techniques
        - 774 Foundations of Machine Learning

- **Engineering Physics**
    - **New Course**
        - 6QC3 Introduction to Quantum Computing
        - 702 Graduate Seminars
    - **Course Cancellations**
        - 700 Graduate Seminars (Master's)
        - 701 Graduate Seminars (PhD)
    - **Change in Course Description**
        - 6P03 Nuclear Power Plant Systems and Operation
        - 784 Nuclear Fuel Management
    - **Change in Course Title and Description**
        - 6D03 Nuclear Reactor Analysis
        - 6MD3 Advanced Materials and Next Generation Devices

- **Materials Science and Engineering**
    - **Course Cancellations**
        - 713 Computational thermodynamics
        - 751 Effect of Length Scale on Mechanical Behaviour
        - 753 Fracture Mechanisms in Solids
        - 755 Deformation of Crystalline Materials
    - **New Course**
        - 751 Mechanical Properties of Materials

- **Mechanical Engineering**
    - **New Cross-Listed Courses**
        - 716 Engineering Optimization

- 725 Introduction to Transmission Electron Microscopy
- 726 Materials Characterization by Electron/Ion Microscopy
- 730 Thin Film Characterization
- 733 Nonlinear Optimization for Engineers
- 786 Artificial Intelligence and Machine Learning Fundamentals
- 787 Machine Learning: Classification Models
- 788 Neural Networks and Development Tools
- 789 Deep Learning and Its Applications

*also approved by the Faculty of Health Sciences
**also approved by the Faculty of Business and Faculty of Health Sciences

Proposed Revision to Admission Requirements of Engineering Graduate COOP and Work Experience Options

Existing:

Participation in this option will require the permission of the student's supervisory committee or in the case of the Professional Masters programs, the permission of the faculty advisor. Participants will be enrolled as full-time students in an Engineering graduate degree program (excluding UNENE or non-participating interdisciplinary programs) and be in good standing. Students who are having difficulties with progress in their course/thesis projects, are over-time in status, or otherwise deemed to not be in good standing by the department, should not be allowed to participate. No student may begin a work placement experience* ***for the first year of their program****, in order for them to complete the majority of their course load and to give supervisors the chance to evaluate the progress of the student, ensuring the work experience will not impede timely completion of the student's degree requirements.*

Proposed Change:

Participation in this option will require the permission of the student's supervisory committee or in the case of the Professional Masters programs, the permission of the faculty advisor. Participants will be enrolled as full-time students in an Engineering graduate degree program (excluding UNENE or non-participating interdisciplinary programs) and be in good standing. Students who are having difficulties with progress in their course/thesis projects, are over-time in status, or otherwise deemed to not be in good standing by the department, should not be allowed to participate. A student may begin a work placement experience* ***after at least 2 terms (i.e., 8 months) of their program****, in order for them to complete the majority of their course load and to give supervisors the chance to evaluate the progress of the student, ensuring the work experience will not impede timely completion of the student's degree requirements.*

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	Biomedical Engineering
NAME OF PROGRAM and PLAN	Biomedical Engineering, MASc..
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	X	**EXPLAIN:** A wording change only in the paragraph 'Biomedical Engineering Symposium' in the Requirements section			
OTHER CHANGES		**EXPLAIN:**			

DESCRIBE THE EXISTING REQUIREMENT/PROCEDURE:

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

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

Currently the Biomedical Engineering Symposium section includes the month that the Symposium was offered and it has changed from January **to the Spring**.

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):

The School of Biomedical Engineering holds an annual 2 day Biomedical Engineering Symposium. Attendance of all registered Masters and Ph.D. students in the Biomedical Engineering program is mandatory. Students are also required to present one seminar on the research they have carried out while enrolled in the program. Students can present their seminar during one of the following events: 1) The BME symposium **(Spring);** 2) Summer Seminar Day or 3) an annual retreat **(Fall).**

CONTACT INFORMATION FOR THE RECOMMENDED CHANGE:

Name: Jane Mah Email: jane@mcmaster.ca Extension: 23486 Date submitted: January 3, 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

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DEPARTMENT	Biomedical Engineering
NAME OF PROGRAM and PLAN	Biomedical Engineering, Ph.D.
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	X	**EXPLAIN:** A wording change only in the paragraph 'Biomedical Engineering Symposium' in the Requirements section
OTHER CHANGES		**EXPLAIN:**

DESCRIBE THE EXISTING REQUIREMENT/PROCEDURE:

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

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

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Name: Jane Mah Email: jane@mcmaster.ca Extension: 23486 Date submitted: January 3, 2018

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SGS/2013

McMaster University

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

DEPARTMENT	W Booth School of Engineering Practice and Technology
NAME OF PROGRAM and PLAN	Master of Engineering in Manufacturing Engineering
DEGREE	Master of Engineering in Manufacturing Engineering

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		**EXPLAIN:**			

DESCRIBE THE EXISTING REQUIREMENT/PROCEDURE:

1. The program length to complete the MEME program on a part time basis is 24 months.
2. The program length for full time is 1.5 years
3. Applicants must hold an honours degree in engineering
4. Applicants were required to find a project at the time of applying to the program and complete a project in the program
5. Projects have 3 tollgates
6. Project report is completed in the winter term
7. The examination board is comprised of their industrial supervisor, academic supervisor and program director (chair) or designate.

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

1. Change the length of the program to 28 months for part time studies
2. Change the length of the program to 12 months for full time studies
3. Applicants must have a degree in Engineering or Technology
4. Applicants have the option to complete a project, however they need to be accepted by the faculty lead to work on the project with the approval of the Associate Director in SEPT
5. Remove tollgates
6. Remove this statement from the calendar
7. The examination committee should be comprised of the academic advisor and second reader (faculty member)

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. Since students who are part time can only enroll in 9 units per academic year, it would take our part time students 28 months to complete the program since they would need to complete 24 units to fulfill their degree requirements. This is for both the project and course based stream.
2. Since the inception of the program, full time students have been able to complete the program in 12 months, not in 1.5 years. This causes confusion with applicants
3. The program is a hands-on program which is equally, if not more, suitable for applicants with a technology degree, such as a Bachelor of Technology, than for those with a B.Eng.
4. This reflects the current structure of our program where the project is optional and further allows the project to be selected after the enrollment date, instead of being required at the application time, which is very restrictive
5. The tollgate terminology and process is specific to the MEEI/MTEI program and hence very misleading to MEME applicants.
6. Students can complete the project in any term depending when they were admitted into the program
7. We are making the evaluation process consistent with the MED program which is more effective

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.

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):

Program Description

The Master of Engineering in Manufacturing Engineering is a 12 month program for full time and 28 months for part time students ~~one and a half year program~~ aimed at highly motivated students seeking advanced training in the broad area of 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 ~~an Honours Bachelor's degree in Engineering~~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 must complete a suitable industry-based project. Projects will normally be performed individually or by groups of two to three students which could be multi-disciplinary in composition. Projects should address a specific problem found in a manufacturing facility related to trouble-shooting, re-design or optimization. The problem should not be focused on the design of new processes or products as that lies beyond the purview of this program. It is expected that the majority of the projects will be developed from work undertaken during co-op or graduate employment experience and students should look for opportunities to develop projects with their employers.~~ 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 ~~also~~ encouraged to develop their own ideas and find industrial sponsors. ~~Identification of this project is the responsibility of the student and must be provided to the program lead at the time of applying to the program.~~ 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.

~~Projects will have three "tollgate" stages. Student groups must submit a project proposal by the end of September to their academic and industrial supervisors for approval of scope, deliverables and timeline. The interim project report, outlining progress-to-date, is due at the end of the fall semester for approval by the academic and industrial supervisors. The final written project report is normally due at the end of the winter semester. However, if the supervisors agree that the project group has not made sufficient progress by this point, they are free to request further work to meet the standards of the program.~~ The project team will orally defend their final project report to an examination ~~board~~committee comprised of their ~~industrial supervisor,~~ academic supervisor and the second reader (faculty member) ~~and program Director (Chair) or designate.~~

CONTACT INFORMATION FOR THE RECOMMENDED CHANGE:

Name: Lotfi Bekhir Email: belkhir@mcmaster.ca Extension: 26078 Date submitted: Nov. 13, 2018

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

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

DEPARTMENT	W Booth School of Engineering Practice and Technology
NAME OF PROGRAM and PLAN	Master of Engineering and Public Policy
DEGREE	Master of Engineering and Public Policy

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:** Update the calendar to reflect the changes to the program			
OTHER CHANGES		**EXPLAIN:**			

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

1. Students currently complete a Research Project - Inquiry/Thesis in Engineering and Public Policy
2. The following statement appears in the graduate calendar "The ideal candidate will have an undergraduate degree in engineering or applied science and 3-5 years of professional work experience".
3. The following statement appears in the graduate calendar "In addition to the general requirements for entry into a graduate program in Engineering, students must hold a 4-year engineering, science, technology or mathematics undergraduate degree, 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.
4. The following statement appears in the graduate calendar "to nurture a diverse group of students who will be active participants within the broader range of activities in the Walter G. Booth School of Engineering Practice and Technology"
5. The following statement appears in the graduate calendar " Three half-courses are required for electives. Students may select from the following options"

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

1. Introduce a new 3 unit project course, SEP 7XX, Public Policy Research Project
2. Remove this statement from the graduate calendar.
3. Revise the statement as follows, "Students should hold a 4-year engineering, science, technology or mathematics undergraduate degree, 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.
4. Remove this statement from the graduate calendar
5. Change this to "Recommended electives include but are not limited to:

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. To reflect the level of effort as at least one half course
2. We already state that applicants should hold a degree in STEM, not only in Engineering or applied science and we do accept applicants without 3-5 years of work experience.
3. To reflect the graduate calendar accurately and language clean up.
4. To reflect the graduate calendar accurately and language clean up.
5. To clarify that these are not the only electives students can select to complete their degrees requirement

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.

N/A

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

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

A professional Master's degree in Engineering and Public Policy (MEPP) is offered within the W Booth School of Engineering Practice and Technology. Engineers and applied scientists from a wide cross-section of organizations who want professional graduate training will find our program goes well beyond a conventional technical Master's to develop candidates as leaders in the public policy area. ~~The ideal candidate will have an undergraduate degree in engineering or applied science and 3-5 years of professional work experience.~~

Admission

~~In addition to the general requirements for entry into a graduate program in Engineering~~, S~~s~~tudents must hold a 4-year engineering, science, technology or mathematics undergraduate degree, 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. Applicants will be required to complete an online interview. Professional work experience is desirable but not essential.

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

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

to provide a high quality educational experience to graduate engineers and scientists in the areas of engineering, science and public policy;
to foster applied research in the areas of engineering, science and public policy through the successful completion and dissemination of a research paper;
to develop viable, working linkages between engineering, science and fields of study within social sciences and the humanities (public policy, economics, society, and others);
~~to nurture a diverse group of students who will be active participants within the broader range of activities in the Walter G. Booth School of Engineering Practice and Technology;~~

to produce graduates who will provide inspired leadership in the engineering, science and public policy areas within the public, private and NGO sectors.

Candidates may be enrolled on a full- or part-time basis. Full-time students will complete the degree in twelve consecutive months of study, beginning in September or January. Part-time students will normally be expected to complete the program in 28 months.

McMaster students may receive advanced standing for up to two courses (note that a maximum of two 600-level courses can count towards a SEPT graduate program) with the approval of the Associate Dean of Graduate Studies.

Focus Elective Courses

Required Courses

~~Four half-courses:~~ Candidates are required to take the following:

SEP 701 / Theory and Practice of Policy Analysis: Frameworks and Models
SEP 702 / Systems Engineering and Public Policy
SEP 709 / Emerging Issues, Technology and Public Policy
SEP 773 / Leadership for Innovation
OR
SEP 6EL3 / Leading Innovation
SEP 7XX / Public Policy Research Project

Three half-courses are required for electives. ~~Students may select from the following options:~~
Recommended electives include but are not limited to:

SEP 6I03 / Sustainable Manufacturing Processes
SEP 6X03 / LIVABLE CITIES, THE BUILT AND NATURAL ENVIRONMENT
SEP 705 / Green Engineering, Sustainability and Public Policy
SEP 706 / Energy and Public Policy
SEP 707 / Communication Technology and Public Policy
SEP 708 / Special Topics in Engineering and Public Policy
SEP 710 / International Governance and Environmental Sustainability
POL SCI 784 / Quantitative Political and Policy Analysis
POL SCI 785 / Public Sector Management
POL SCI 790 / The Politics of Economic Policy in Market Economies

Curriculum

The curriculum has the following components:

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Core courses that provide the content and methodological skills necessary for understanding and analyzing societal issues for which engineering and science can contribute to public policy solutions;
Focus elective courses that allow students to deepen their knowledge of a range of engineering, science and social science applications;
The completion of a substantive research paper on a problem at the interface of engineering, science and public policy

SEP 6EL3 / Leading Innovation
SEP 6X03 / LIVABLE CITIES, THE BUILT AND NATURAL ENVIRONMENT
SEP 701 / Theory and Practice of Policy Analysis: Frameworks and Models
SEP 702 / Systems Engineering and Public Policy
SEP 703 / Applied Microeconomics and Environmental Economics
SEP 705 / Green Engineering, Sustainability and Public Policy
SEP 706 / Energy and Public Policy
SEP 707 / Communication Technology and Public Policy
SEP 708 / Special Topics in Engineering and Public Policy
SEP 709 / Emerging Issues, Technology and Public Policy
SEP 710 / International Governance and Environmental Sustainability
SEP 756 / International Water Policy
SEP 770 / Total Sustainability Management
SEP 771 / W Booth School of Engineering Practice and Technology Practitioner's Forum Part I
SEP 771 / W Booth School of Engineering Practice and Technology Practitioner's Forum Part II
SEP 772 / Innovation Studio
SEP 773 / Leadership for Innovation
SEP 784 / Government Policy and Business
SEP 7XX / Public Policy Research Project

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CONTACT INFORMATION FOR THE RECOMMENDED CHANGE:

Name: Lotfi Belkhir Email: belkhir@mcmaster.ca Extension: 26078 Date submitted: Nov 13/, 2018

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	W Booth School of Engineering Practice and Technology
NAME OF PROGRAM and PLAN	Master of Engineering Entrepreneurship and Innovation
DEGREE	**Master of Engineering Entrepreneurship and Innovation 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		**EXPLAIN:**

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

1. In the calendar, the following subheading and paragraph exists.

   Peer Evaluation and the Enterprise Project

   The ability to effectively work in a team environment is an important learning outcome of team-based project work on the Enterprise project, as in individual learning outcomes developed in a team environment. Candidates will be mentored on their progress in this aspect by their enterprise advisor based on input from their peers in the project team and from assesment of the enterprise advisor. Team member evaluations will be collected in confidence from team members by the enterprise advisor, or their designate, on a six-month basis. Every six months the Enterprise Advisor will review the performance of the individual candidate in the team with the candidate. The enterprise advisor will generate an assessment of performance. To successfully complete the program, the candidate must maintain an average rating of "Good" over the span of the enterprise project in team assessment and demonstrate individual achievement in team experienced learning outcomes.
2. The following statement exist in the calendar " A candidate is required to complete successfully two one-term advanced engineering courses and the six compulsory Engineering Entrepreneurship and Innovation module courses."

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

1. Change the following subheading and paragraph as follows:

   Leadership Skill Development and the Enterprise Project

   The ability to effectively work in a team environment is an important learning outcome of team-based project work on the Enterprise project. The MEEI and MTEI programs use a confidential service to provide each individual with personalized performance feedback from their peers on a periodic basis. Approaches to improving ones own performance include mentoring and guidance by their Enterprise Advisor.
2. Remove "engineering" from this sentence

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. The formal collection and evaluation of a team member's performance from the other team members proved to be unpractical and unnecessary. The change reflects a more practical and informal collection of their performance based on the of the Enterprise Advisor's interaction with the whole team as well as the specific members of that team on an ongoing basis. Also the formal rating was eliminated and has been replaced instead with an informal "good standing" approach, coupled with active mentoring and guidance by the Enterprise Advisor on an ongoing and as-needed basis.
2. Students can enroll in elective courses outside the Faculty of engineering with the approval of a faculty lead

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.

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):

~~Peer Evaluation and the Enterprise Project~~ Leadership Skill Development and the Enterprise Project

The ability to effectively work in a team environment is an important learning outcome of team-based project work on the Enterprise project. ~~, as in individual learning outcomes developed in a team environment. Candidates will be mentored on their progress in this aspect by their enterprise advisor based on input from their peers in the project team and from assesment of the enterprise advisor. Team member evaluations will be collected in confidence from team members by the enterprise advisor, or their designate, on a six-month basis. Every six months the Enterprise Advisor will review the performance of the individual candidate in the team with the candidate. The enterprise advisor will generate an assessment of performance. To successfully complete the program, the candidate must maintain an average rating of "Good" over the span of the enterprise project in team assesment and demonstrate individual achievement in team experienced learning outcomes.~~ The MEEI and MTEI programs use a confidential service to provide each individual with personalized performance feedback from their peers on a period basis. Approaches to improving ones own performance include mentoring and guidance by their Enterprise Advisor.

Admission

A candidate is required to complete successfully two one-term advanced ~~engineering~~ courses and the six compulsory Engineering Entrepreneurship and Innovation module courses. Additionally, full-time students must successfully complete SEP 771 Part I and II and SEP 772. A faculty advisor will assist the student in selecting relevant engineering courses. Students

will normally be required to complete two graduate level engineering courses. The objective is to acquire leading-edge engineering skills and apply them to the enterprise project.

CONTACT INFORMATION FOR THE RECOMMENDED CHANGE:

Name: Lotfi Belkhir Email: belkhir@mcmaster.ca Extension: 26078 Date submitted: Nov 14/18

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

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

1. This form must be completed for **ALL** changes involving degree program requirements/procedures. **All** sections of this form **must** be completed.

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

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

DEPARTMENT	W Booth School of Engineering Practice and Technology
NAME OF PROGRAM and PLAN	Master of Technology Entrepreneurship and Innovation
DEGREE	**Master of Technology Entrepreneurship and Innovation 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		**EXPLAIN:**			

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

1. In the calendar, the following subheading and paragraph exists.

   Peer Evaluation and the Enterprise Project

   The ability to effectively work in a team environment is an important learning outcome of team-based project work on the Enterprise project, as in individual learning outcomes developed in a team environment. Candidates will be mentored on their progress in this aspect by their enterprise advisor based on input from their peers in the project team and from assesment of the enterprise advisor. Team member evaluations will be collected in confidence from team members by the enterprise advisor, or their designate, on a six-month basis. Every six months the Enterprise Advisor will review the performance of the individual candidate in the team with the candidate. The enterprise advisor will generate an assessment of performance. To successfully complete the program, the candidate must maintain an average rating of "Good" over the span of the enterprise project in team assesment and demonstrate individual achievement in team experienced learning outcomes.

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

1. Change the following subheading and paragraph as follows:

   Leadership Skill Development and the Enterprise Project

   The ability to effectively work in a team environment is an important learning outcome of team-based project work on the Enterprise project. The MEEI and MTEI programs use a confidential service to provide each individual with personalized performance feedback from their peers on a period basis. Approaches to improving ones own performance include mentoring and guidance by their Enterprise Advisor.

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

1. The formal collection and evaluation of a team member's performance from the other team members proved to be unpractical and unnecessary. The change reflects a more practical and informal collection of their performance based on the of the Enterprise Advisor's interaction with the whole team as well as the specific members of that team on an ongoing basis. Also the formal rating was eliminated and has been replaced instead with an informal "good standing" approach, coupled with active mentoring and guidance by the Enterprise Advisor on an ongoing and as-needed basis.

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.

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):

~~Peer Evaluation and the Enterprise Project~~ Leadership Skill Development and the Enterprise Project

The ability to effectively work in a team environment is an important learning outcome of team-based project work on the Enterprise project. ~~, as in individual learning outcomes developed in a team environment. Candidates will be mentored on their progress in this aspect by their enterprise advisor based on input from their peers in the project team and from assesment of the enterprise advisor. Team member evaluations will be collected in confidence from team members by the enterprise advisor, or their designate, on a six-month basis. Every six months the Enterprise Advisor will review the performance of the individual candidate in the team with the candidate. The enterprise advisor will generate an assessment of performance. To successfully complete the program, the candidate must maintain an average rating of "Good" over the span of the enterprise project in team assesment and demonstrate individual achievement in team experienced learning outcomes.~~ The MEEI and MTEI programs use a confidential service to provide each individual with personalized performance feedback from their peers on a period basis. Approaches to improving ones own performance include mentoring and guidance by their Enterprise Advisor.

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CONTACT INFORMATION FOR THE RECOMMENDED CHANGE:

Name: Lotfi Belkhir Email: belkhir@mcmaster.ca Extension: 26078 Date submitted: Nov 14/18

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

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	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		**EXPLAIN:**			

DESCRIBE THE EXISTING REQUIREMENT/PROCEDURE:

1. SEP 761, Human Centred Design is listed as an elective
2. The following bullet point in the calendar suggests the program emphasizes "Sustainable Community Infrastructure (renewable energy systems, environmental systems, sustainable products and systems design, local economy)" as an area of competency.
3. The following exists in the calendar "Innovative new designs and the ability to improve performance of existing systems have become a basis for a competitive advantage in the marketplace. 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. The Master of Engineering Design program provides its participants with technical expertise and leadership capabilities required to invent novel solutions and to lead technically-oriented organizations. Strong emphasis on solving engineering problems from industrial practice is accomplished via industrially motivated and supported projects.

4. Admission is offered in January.
5. This statement exists in the calendar "The following course requirements need to be fulfilled by the candidate".
6. The sub-streams "Process design, Process Control, or Plant Operations" and "Control Systems Engineering" exist in the calendar.
7. The following text exists in the calendar "Innovation and creative system, solutions, or product design are emphasized through problem solving via interdisciplinary teams in a design studio environment, while learning about the use of materials in product design and design for manufacturing are led by the faculty who are also members of McMaster's advanced centres (including Centre for Automotive Materials, Manufacturing Research Institute, Institute for Polymer Production Technology and the Centre for Advanced Polymer Processing and Design). The interdisciplinary nature of the program enables its participants to work on a variety of designs, such as industrial machinery, consumer products, automotive, etc.
8. Sustainable Community Infrastructure stream exists in the calendar.

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

1. List SEP 761, Human Centred Design as strongly recommended for Product Design students.
2. Remove this from the calendar.
3. Make revisions to this paragraph (tracking changes below)
4. Remove admission for January.
5. Remove this from the calendar.
6. Remove sub-streams "Process Design, Process Control, or Plant Operations" and "Control Systems Engineering".
7. Make revisions to this statement (tracking changes below).
8. Remove Sustainable Community Infrastructure stream from the calendar.
9. Add recommended electives for Product Design stream which are as follows,

   SEP 7xx / Augmented Reality, Virtual Reality and Mixed Reality

   SEP 7xx / GPU Intensive applications for real-time projects

   SEP 714 / Workflow Management for Animated Prototypes
   SEP 715 / Rendering techniques

10. Include “augmented reality and virtual reality” in the calendar.
11. Add new course “SEP 7XX”, Augmented Reality, Virtual Reality and Mixed Reality
12. Add new course “SEP 7XX”, GPU Intensive applications for real-time projects

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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. This course is important to most PD students but not necessary for all.
2. With Sustainable Community Infrastructure being removed, it would not make sense to leave this in.
3. These changes reflect a shift in the MED program towards teaching innovation and creative competencies.
4. We have not accepted students in January the past two years therefore this is misleading to applicants.
5. Redundant.
6. These have never been in use since the inception of the MED program.
7. These connections have never been part of the program.
8. This stream has had very low enrollment over the past several years. There are no full-time faculty with the expertise in this area in SEPT.
9. Since we are offering courses in augmented reality and virtual reality, it would make sense to include this in the calendar.
10. through 12. A new stream in Augmented Reality (AR) and Virtual Reality (VR) is planned for the MED program. At the moment, projects and courses are planned prior to the introduction of a new stream in the area of AR/VR.

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, pPerformance, 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 ~~invent novel solutions~~innovate and to lead technically-oriented organizations. Strong emphasis on applying design competencies to real world problems ~~solving engineering problems from industrial practice~~ is accomplished via industrially motivated and supported projects.

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

- Leadership, collaboration, and management skills ~~to~~for ~~lead~~ diverse teams.
- Design thinking and innovations methodologies.
- Engineering disciplines leading to breakthrough design and operation of systems in:
  - ~~Sustainable community infrastructure (renewable energy systems, environmental systems, sustainable products and systems design, local economy)~~
  - ~~P~~process industries (refining, chemicals, specialty chemicals, pharmaceuticals, power, oil and gas production, and similar)
  - ~~M~~manufacturing of industrial and consumer products
  - ~~H~~health, wellness and aging device and software solutions, and
  - augmented reality and virtual reality

Admission

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 ~~and~~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 ~~or January~~. 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 Students with Related Work Experience or Course Work beyond the Bachelor's Degree in the Graduate Calendar.)

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~~8~~ 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 ~~M~~management ~~C~~capabilities courses that will enable M.Eng. Design graduates to deal with complex situations in the work environment, to lead teams, ~~and~~ 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.

Process and Production Systems

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

~~The following course requirements need to be fulfilled by the candidate:~~

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 (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 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.

~~**Process Design, Process Control, or Plant Operations**~~

Recommended ~~courses for candidates focusing on *Process Design, Process Control, or Plant Operations*~~ include, however not limited to the following:

- SEP 751 / Process Design and Control for Operability
- SEP 752 / Systems Modelling and Optimization
- SEP 6C03 / Statistics for Engineers
- 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 /SEP 767 Multivariate Statistical Methods for Big Data Analysis and Process Improvement

~~**Control Systems Engineering**~~

~~Recommended courses for students with a background or interest in *Control Systems Engineering* are:~~

- 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

Innovativeon and creative systems, solutions, orand product designs are emphasized through problem solving viadesign interdisciplinary teams in a collaborative design studio environment.; while learning about the use of materials in product design and design for manufacturing are led by the faculty who are also members of McMaster's advanced centres (including Centre for Automotive Materials, Manufacturing Research Institute, Institute for Polymer Production Technology and the Centre for Advanced Polymer Processing and Design). The interdisciplinary nature of the program enables its participants to work on a variety of designs 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 (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 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:

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- SEP 757 / Hardware Prototyping Tools and Methods
- OR
- SEP 758 / Prototyping Tools (Mobile Applications)
- SEP 761 / Human Centered Design

Other recommended elective include:

SEP 714 Fundamentals of animation workflow

SEP 715 Production rendering techniques

SEP 7XX / Augmented Reality, Virtual Reality and Mixed Reality

SEP 7XX / GPU Intensive applications for real-time projects

~~Sustainable Community Infrastructure~~

~~Candidates in this field of study cover various aspects of the design of sustainable communities, including:~~

- ~~Public realm spaces (parks, sidewalks, recreation facilities)~~
- ~~Storm water management~~
- ~~Housing and energy efficient buildings~~

- Development of local business
- Sustainable transportation systems
- Sustainable energy generation

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

Mandatory Courses

Candidates are required to take:

- 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 773 / Leadership for Innovation
- OR
- SEP 6EL3 / Leading Innovation

Electives

Candidates are required to take four elective courses, which should be selected from graduate courses offered by departments within the Faculty of Engineering. Suggested courses in sustainable energy systems and manufacturing are:

Strongly Recommended

- SEP 6X03 / LIVABLE CITIES, THE BUILT AND NATURAL ENVIRONMENT
- OR
- SEP 748 / Development of Sustainable Communities

Other Electives

- SEP 6I03 / Sustainable Manufacturing Processes
- SEP 705 / Green Engineering, Sustainability and Public Policy

- ~~SEP 746 / Design of Sustainable Community Infrastructure~~
- ~~SEP 747 / Energy Efficient Buildings~~
- ~~SEP 757 / Hardware Prototyping Tools and Methods~~
- ~~SEP 758 / Prototyping Tools (Mobile Applications)~~
- ~~Candidates are required to have their elective course selection approved by the Associate Director of Graduate Studies in SEPT.~~

Engineering Design Courses

Return to: Faculty of Engineering

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

Courses

1. Add new course “SEP 7XX”, Augmented Reality, Virtual Reality and Mixed Reality
2. Add new course “SEP 7XX”, GPU Intensive applications for real-time projects

CONTACT INFORMATION FOR THE RECOMMENDED CHANGE:

Name: Lotfi Belkhir Email: belkhir@mcmaster.ca Extension: 26078 Date submitted: Nov. 13, 2018

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

SGS/2013

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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	WBooth School of Engineering Practice & Technology
NAME OF PROGRAM and PLAN	Master of Engineering Design
DEGREE	**Master of Engineering Design**

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	x	**EXPLAIN:** Add new courses			

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

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

1. Add new courses and as recommended electives for Product Design stream which are as follows:

   SEP 6CG3 / Fundamentals of computer graphics and animation development

   SEP 6VE3 / Visual Effects and Technology for Animation Production

RATIONALE FOR THE RECOMMENDED CHANGE (How does the requirement fit into the department's

1. A new stream in Augmented Reality (AR) and Virtual Reality (VR) is planned for the MED program. At the moment, projects and courses are planned prior to the introduction of a new stream in the area of AR/VR. Since we are offering courses in augmented reality and virtual reality, it would make sense to include this in the calendar.

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):

Product Design

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 (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 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
- SEP 758 / Prototyping Tools (Mobile Applications)
- SEP 761 / Human Centred Design

Other recommended elective include:

SEP 6CG3 / Fundamentals of computer graphics and animation development

SEP 6VE3 / Visual effects and technology for animation production

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

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Courses

- SEP 6AS3 / Advanced System Components and Integration
- SEP 6AT3 / Conceptual Design of Electric and Hybrid Electric Vehicles
- SEP 6BC3 / Building Science
- SEP 6BI3 / Bioinformatics
- SEP 6BL3 / Biomaterials and Biocompatibility
- SEP 6BM3 / Biopharmaceuticals
- SEP 6BS3 / Biotechnology Regulations
- SEP 6C03 / Statistics for Engineers
- SEP 6CS3 / Computer Security
- SEP 6DA3 / Data Analytics and Big Data
- SEP 6DM3 / Data Mining
- SEP 6DV3 / Vehicle Dynamics
- SEP 6EL3 / Leading Innovation
- SEP 6ES3 / Real-Time Systems
- SEP 6IC3 / Industrial Networks and Controllers
- SEP 6I03 / Sustainable Manufacturing Processes
- SEP 6MS3 / Modelling and Simulation
- SEP 6PD3 / Power System Analysis and Control
- SEP 6PM3 / Project Management
- SEP 6PQ3 / Power Quality
- SEP 6SS3 / System Specification and Design
- SEP 6TB3 / Advanced biotechnology
- SEP 700 / M.Eng. Project in Engineering Design Part I
- SEP 700 / M.Eng. Project in Engineering Design Part II
- SEP 714 / Workflow Management for Animated Prototypes
- SEP 715 / Rendering techniques
- SEP 730 / Reliability and Risk Management
- SEP 732 / Sustainable Energy - Technology and Options Selection
- SEP 733 / Project Management
- SEP 746 / Design of Sustainable Community Infrastructure
- SEP 747 / Energy Efficient Buildings
- SEP 748 / Development of Sustainable Communities
- SEP 750 / Model Predictive Control Design and Implementation
- 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 757 / Hardware Prototyping Tools and Methods
- SEP 758 / Prototyping Tools (Mobile Applications)
- SEP 759 / Prototyping Web and Mobile Applications
- SEP 760 / Design Thinking
- SEP 761 / Human-Centred Design
- SEP 763 / Special Topics in Engineering Design
- SEP 767 / Multivariate Statistical Methods for Big Data Analysis and Process Improvement

- SEP 770 / Total Sustainability Management
- SEP 771 / W Booth School of Engineering Practice and Technology Practitioner's Forum Part I
- SEP 771 / W Booth School of Engineering Practice and Technology Practitioner's Forum Part II
- SEP 772 / Innovation Studio
- SEP 773 / Leadership for Innovation
- SEP 774 / Nanobiotechnology
- SEP 780 / Advanced Robotics and Automation
- SEP 781 / Contaminated Site Management
- SEP 782 / Modern Power System Design
- SEP 783 / Electromagnetics Sensors and Actuators
- SEP 768 / Special Topics in Additive Manufacturing
- SEP 769 / Systems Engineering & Cyber Physical Systems
- "SEP 6VE3", Visual Effects and Animation Production Technology.
- "SEP 6CG3", Fundamentals of computer graphics and animation development
- SEP 791 / Augmented Reality, Virtual Reality and Mixed Reality
- SEP 792 / Interactive applications utilizing GPU's for real-time projects

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CONTACT INFORMATION FOR THE RECOMMENDED CHANGE:

Name: Vladimir Mahalec Email: mahalec@mcmaster.ca Extension: 26386 Date submitted: Jan 4, 2019

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

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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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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	Direct-entry 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	x	**CHANGE IN COMPREHENSIVE EXAMINATION PROCEDURE**		**CHANGE IN COURSE REQUIREMENTS**	x

CHANGE IN THE DESCRIPTION OF A SECTION IN THE GRADUATE CALENDAR	x	Currently, no description of the rules pertaining to direct-entry PhD programs exists in calendar description. **EXPLAIN:** The accelerated direct-entry PhD program is designed for students who hold first-class standing with Bachelor's degrees in CS, SE or closely related fields for *direct entry* to PhD programs with *reduced* course loads offered by the department of Computing and Software. The typical duration of the program is 5 years.

OTHER CHANGES		**EXPLAIN:** 1. **Name change**: "Direct-entry PhD" to "Accelerated Direct-entry PhD". The program has fewer course requirements (6) compared to the normal Master's + PhD (total 8) and existing direct entry PhD requirement (8)

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

Students need to take 8 courses. For admission, students are required to have a Bachelor's degree in Computer Science, Software Engineering or related field with last two year GPA no less than A- (or 10/12).

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

Accelerated Direct-entry PhDs in SE and CS

- Program structure
- Typical duration: 5 years with funding supports

Comprehensive timeline

- Part I & II: 24 months

Graduate courses in the Dept. of Computing and Software are grouped in three categories, i) Theory of computation and mathematics of computing (Theory), ii) Software and its engineering (Software), and iii) Computer systems and applications (Systems). Categorization of existing courses can be found in the department handbook.

Course requirements (6 courses total):

- CS: 2 Theory, 1 Systems, 1 SE, 2 free choices or 1 Theory, 2 Systems, 1 SE, 2 free choices
- SE: 2 SE, 1 Theory, 1 Systems, 2 free choices
- Free choices can be from other departments subject to the approval of supervisor and graduate chair.

Admission requirements

- Students with a Bachelor's degree in Computer Science, Software Engr. or closely related fields
- Core course GPA: $\geq$ 10/12, where core courses are listed in the table below.

Computer Science (CS)	**Software Engineering (SE)**
2 Calculus Courses	3 Calculus Courses
Linear Algebra	Linear Algebra
Discrete Mathematics	Discrete Mathematics
Data Structures & Algorithms	Data Structures & Algorithms
Statistics/Probabilities	Statistics/Probabilities
Operating Systems/Concurrent Systems	Operating Systems/Concurrent Systems
Software Development	Software Design
Compilers	Software Requirements
Computer Architecture	Introduction to Programming
Databases	Control theory

Programming Languages	
Computer Networks	
Theory of Computation	

For CS, only the best 7 out of the last 9 courses on the list are used in the GPA calculation

- English requirements for non-native speakers are TOEFEL $\geq$ 100/120 with writing score $\geq$ 5 (out of 6) or IELTS 7.5 with writing score $\geq$ 7.5 (out of 9)
- Research experiences at undergraduate level are highly valued

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?):

Requirements for direct-entry PhD programs were not previously formally documented and publicized. Tightening admission requirements increases the likelihood of success of students in the program. Reduced course loads allow students to spend more time on research and complete the programs in 5 years.

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):

The accelerated direct-entry PhD program in Computer Science and the accelerated direct-entry PhD program in Software Engineering are designed for talented students with Bachelor's degrees in CS, SE or closely related fields for *direct entry* to PhD programs. Typical duration of the programs are 5 years with *a total* course load of 6 courses.

CONTACT INFORMATION FOR THE RECOMMENDED CHANGE:

Name: Rong Zheng Email: rzheng Extension: 22891 Date submitted:

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

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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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 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		**EXPLAIN:**
OTHER CHANGES		**EXPLAIN:** Changes of transfer rule and procedure from Master's program to PhD

DESCRIBE THE EXISTING REQUIREMENT/PROCEDURE:

2.2 Transfer from the Department's Master's programs to the Ph.D. program in Com- puter Science (without completion of the Master's degree)

Excellent students in the M.Sc. (Computer Science) or in the M.Eng. or M.A.Sc. (Software Engineering) programs may be admitted to the Computer Science Ph.D. program if:

1. The candidate has completed the course requirements of the Master's program with at least an A– average.
2. The candidate's course background is appropriate for the Computer Science Ph.D.
3. The candidate has already shown significant progress and maturity in his/her research.
4. The Supervisor fully supports the transfer.
5. The Transfer Committee (see below) approves the transfer.

Transfer procedures:

1. The student prepares a Transfer Report that contains two parts:
   a) Status report, transcript of courses, and progress in research so far.
   b) Brief research proposal for Ph.D. studies. (This is not the "thesis proposal" referred to in the Comprehensive Examination section.)
2. A Transfer Committee is appointed by the Department Chair or delegate. The purpose of the Transfer Committee is to decide if the student is qualified to transfer to the Ph.D. program and if the transfer is in the best interest of the student. The Transfer Committee Chair is the Computer Science Grad- uate Advisor. At least three additional members are selected according to the same rules as for the Supervisory Committee (see below). Normally the Transfer Committee, except the Computer Science Graduate Advisor, will act as the Supervisory Committee in case the transfer request is approved.
3. The Admission Authority1 advises the School of Graduate Studies about honoring the transfer request.
4. A transferring student must complete four courses beyond the Master's requirements, see Section ??.

2.3 Transfer from the Department's Master's programs to the Ph.D. program in Com- puter Science (with concurrent completion of the Master's degree)

Excellent students in the M.Sc. (Computer Science) or in the M.A.Sc. (Software Engineering) programs may be admitted to the Computer Science Ph.D. program if:

1. The candidate has completed the course requirements of the Master's program with at least an A– average.
2. The candidate's course background is appropriate for the Computer Science Ph.D.
3. The candidate has already shown significant progress and maturity in his/her research.
4. The candidate is expected to complete the Master's degree within two months from the date of reclas- sification.
5. The proposed Ph.D. Supervisor fully supports the transfer.
6. The Admission Authority approves the transfer.

Transfer procedures:

1. The student, after consultation with the supervisor, notifies the Computer Science Graduate Advisor that he/she wishes to transfer to the Ph.D. program with concurrent completion of the Master's degree.
2. The supervisor makes a recommendation concerning the transfer.
3. The Admission Authority advises the School of Graduate Studies about honoring the transfer request.
4. A student who does not complete the Master's degree within two months of the transfer date will lose his/her status as a Ph.D. candidate.

2.4 Transfer from the Department's Master's programs to the Ph.D. program in Com- puter Science (at completion of the Master's degree)

Excellent students completing the M.Sc. (Computer Science) or the M.Eng. or M.A.Sc. (Software Engineer- ing) programs may be admitted to the Computer Science Ph.D. program if:

1. The candidate has completed the course requirements of the Master's program with at least a B+ average.
2. The candidate's course background is appropriate for the Computer Science Ph.D.
3. The person or body responsible for making admission recommendations to the School of Graduate Studies.
4. The proposed Ph.D. Supervisor fully supports the transfer (and the Transfer Committee in case of an M.Eng. student).
5. The Admission Authority approves the admission.

Transfer procedures for students in thesis-oriented programs:

1. When the thesis is ready for defense, the candidate, after consultation with the supervisor, notifies the Computer Science Graduate Advisor that he/she intends to transfer to the Ph.D. program.
2. In addition to their normal function with regard to the Master's thesis defense, each member of the Examination Committee will make a recommendation to the Admission Authority concerning transfer to the Ph.D. program.
3. The Admission Authority advises the School of Graduate Studies about honoring the transfer request.

Transfer procedures for students in the M.Eng. program:
The student prepares a Transfer Report that contains two parts:
a) Status report, transcript of courses and progress in research so far.
b) Brief research proposal for Ph.D. studies. (This is not the "thesis proposal" referred to in the Comprehensive Examination section.)
A Transfer Committee is appointed by the Department Chair or delegate. The Transfer Committee Chair is the Computer Science Graduate Advisor. At least three additional members are selected according to the same rules as for the Supervisory Committee (see below). Normally the Transfer Committee, except the Computer Science Graduate Advisor, will act as the Supervisory Committee in case the transfer request is approved.
The Admission Authority advises the School of Graduate Studies about honoring the transfer request.

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

Advanced students in the Software Engineering M.Eng. or M.A.Sc. programs or in the Computer Science M.Sc. program may be admitted to the Computer Science Ph.D. program without completing the Master's program if the candidate has:
(i) completed the course requirements of the program with an average of at least A-,
(ii) shown significant progress and maturity in research,
(iii) the full support of the supervisor,
(iv) the approval of the admission authority of the Ph.D. program
(v) the approval of the School of Graduate Studies

Requesting a Transfer:
(i) A student wishing to transfer from a Masters program to the PhD program must prepare a transfer request that contains four sections:
(a) A status report including transcript of courses taken and grades earned, (b) A description of the research or project carried out in the present program, (c) An application for the new program,
(d) A statement by the supervisor indicating why he/she supports the transfer.
(ii) The transfer request is considered by the same committee that processes other requests for ad- mission to the Ph.D. program. If the committee approves the transfer, it sends the application to the School of Graduate Studies in the usual way.
(iii) A transferring student must complete four courses beyond the Master's requirements

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

The current program description is rather lengthy and confusing. It is inconsistent with the corresponding sections in PhD in SE.

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): N/A
CONTACT INFORMATION FOR THE RECOMMENDED CHANGE: Name: Rong Zheng Email: rzheng Extension: 22891 Date submitted:

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

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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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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	Engineering Physics
NAME OF PROGRAM and PLAN	N/A
DEGREE	**M.A.Sc., 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 SECTION IN THE GRADUATE CALENDAR	X	**EXPLAIN:** combine ENGPHYS 701 with ENGPHYS 700 to form a single course ENGPHYS 702.			
OTHER CHANGES		**EXPLAIN:**			

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

ENGPHYS 700 is currently running together with ENGPHYS 701, as an additional requirement by the department. ENGPHYS 700 and ENGPHYS 701 are not counted towards the existing course requirements. The course is currently run over the Fall and Winter semester and offered annually. The course is required by all new graduate students, and open to existing graduate students. Each student is currently required to prepare and present a 30-minute seminar (based upon extensive research work and literature surveys, related to their research) and attend/participate in at least 90% of the course seminars in each term within the course. The seminars are advertised as part of the departmental seminar series. Staff, faculty, and students from Engineering Physics and other departments will be welcome to attend. The course is pass/fail, without a letter grade. The course is worth 3 units of credit.

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

- combine ENGPHYS 701 with ENGPHYS 700 to form a single course ENGPHYS 702;
- change the whole year running course to two half-year running courses (i.e. running the same course for two times annually in the Fall and Winter semester, respectively);
- a Masters or doctoral candidate must take ENGPHYS 702 once during the course of their degree. Part-time students in the MASc and PhD programs, as well as any student enrolled in the M.Eng are exempt from this course;
- The seminars will be scheduled every other week, and 2 graduate students will present their research at each seminar (depending on the enrollment).
- Each student will be required to attend and participate in at least 75% of the course seminars within the course.
- Students are assumed to do rehearsal and practice within their research groups (with the help of their supervisors) before the formal presentation.

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?):

It is considered that the graduate students at Engineering Physics need a seminar type course at 700-level, so that the students can learn presentation and communication skills. It is expected that the proposed EP702 course will fix the problems of the currently running EP700 and EP701 courses.

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

Effect on Sept.1, 2019 after the approval of GCPC committee.

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: Chang-qing Xu Email: cqxu@mcmaster.ca Extension: 24314 Date submitted: Jan.10, 2019

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

SGS/2013

Engineering Physics, M.A.Sc.

Master's Degree

The degree may be earned either with a thesis option (M.A.Sc.) or an industrial internship (M.Eng.) to be decided jointly by the candidate, the supervisor, and the chair. A strong baccalaureate degree with an average of at least B (equivalent to a McMaster GPA of 8.0) in engineering, mathematics, or the physical sciences is generally required for admission to the M.A.Sc. program. For the M.Eng. program, an average of at least B is required.

M.A.Sc. Degree

Course Requirements

A candidate for the M.A.Sc. degree is required to complete a minimum of three half courses, at least two of which must be at the 700 level, with an overall average of at least B and a thesis. The M.A.Sc. students are allowed to take one non-technical course at the 600- or 700-level among the three required half-courses. The thesis topic is chosen in consultation with the supervisor. In addition to the minimum of three half courses, M.A.Sc. candidates are required to complete the mandatory seminar half course ~~ENG PHYS 700~~ ENG PHYS 702.

Students currently enrolled in their final year of an Engineering Physics undergraduate program at McMaster University may apply for an Advanced Credit Option. The Advanced Credit Option is open to undergraduates who have an overall average (CGPA) of at least B at the time they are applying for the option. The Advanced Credit Option allows undergraduate students to take one 600-level course during their final undergraduate year for graduate credit. The Advanced Credit Option may not be used in conjunction with the Accelerated Option which similarly allows an undergraduate student to count one 600-level course taken during their final year towards their degree requirements of the M.A.Sc program. In exceptional circumstances, students from other Engineering departments in McMaster applying for entry into the M.A.Sc.

program in Engineering Physics may apply for the Advanced Credit Option with the permission of the Department's Associate Chair (Graduate). Entry into the M.A.Sc. program under the Advanced Credit Option must occur less than one year upon completing one's undergraduate degree and must meet the same requirements for admission as other candidates.

An Accelerated Option is also available to students currently enrolled at McMaster as undergraduate students in the Engineering Physics Department whereby the M.A.Sc. degree may
be completed in 12-16 months of full-time study. Application for entry into the Accelerated Option occurs in the final year of undergraduate studies. Applicants must have an overall average (CGPA) of at least B at the time they are applying for the option. The Accelerated Option requires students to complete at least one term of their thesis-related project with a supervisor from the department prior to completion of their undergraduate degree. A 600-level course offered by the department is required under the Accelerated Option in the final undergraduate year for graduate credit. For students enrolled in the Accelerated Option, research conducted in ENGPHYS 4H04 may count towards the Accelerated
Option and therefore towards partial fulfillment of the graduate M.A.Sc. thesis work.

In exceptional circumstances, students from other Engineering departments in McMaster may apply for entry into the Accelerated Option by contacting the department's Associate Chair (Graduate). Entry into the M.A.Sc. program under the Accelerated Option must occur less than one year upon completing one's undergraduate degree and must meet the same requirements for admission as other candidates.

Transfer to the Ph.D.

After a minimum of 1 year in the M.A.Sc. or M.Eng. program, a student may transfer to the Ph.D. program without completion of the Master's, upon successful completion of a transfer examination. The transfer examination will be completed with the intended Ph.D. Supervisory Committee. The transfer exam will count towards the requirement of the PhD thesis proposal.

The transfer exam is oral with a written report and presentation.

Engineering Physics, Ph.D

Ph.D. Degree

Course Requirements

The general Regulations for the Degree Doctor of Philosophy appear earlier in the Calendar. Students with a Master's degree are required to take two half courses, at least two of which must be at the 700- level. Students entering into the Ph.D. program directly from a Baccalaureate degree, or transferring into the Ph.D. program without being required to complete the Master's degree are required to take a total of two half courses at the 700-level. Among these two half courses, one can be a non-technical course with approval of the Associate Chair (Graduate). For those students transferring to the Ph.D. without completion of the Master's degree, courses completed during the Master's at McMaster's Engineering Physics M.A.Sc. or M.Eng. program may be transferred to McMaster's Engineering Physics Ph.D. program. In addition to the minimum of two half courses, Ph.D. candidates are required to complete the mandatory seminar half course ~~ENG PHYS 701~~ ENG PHYS 702 .

Comprehensive Examination

During their course of study, doctoral candidates will be required to pass a Departmental Comprehensive Examination. The purpose of this examination is to ensure that the candidate possesses sufficient knowledge and maturity of approach. The examination format is oral and will test the student's knowledge and understanding of mathematics, physics, and the engineering sciences. The candidate will normally take the examination within 8 months and no later than 20 months following admission to the doctoral program. The examination may, at the discretion of the Department, be repeated once. Reporting of examination results will be done in accordance with the Regulations of the School of Graduate Studies.

Thesis Proposal

Ph.D. students must present a thesis proposal to their Supervisory Committee, normally at the first Supervisory meeting after completion of one term in their program.

Industrial Ph.D. Option

The general Regulations for the degree Doctor of Philosophy appear earlier in the Calendar. This program option offers the candidate the potential to conduct all or a portion of their research at their company or research institute of employment. To be enrolled under the option, the candidate must be a full-time student in the degree program, have previously completed a Masters of Applied Science or its equivalence, and be employed by a company or research institute outside of McMaster continuously till degree completion. A candidate is required to complete the normal course requirements of their enrolled department as well as any milestones, but is exempt from seminar requirements. As a doctoral candidate they must take the Ph.D. Comprehensive Examination that is designed to test the breadth of knowledge and the ability to synthesize and integrate ideas from within and peripheral to the candidate's research area. The Comprehensive Examination will normally take place between 6 and 18 months after the candidate initially registers in the Ph.D. program. A supervisory committee monitors the progress of a Ph.D. candidate and determines when he/she is ready to write the thesis. The student is required to defend the thesis at a Final Oral Examination.

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 January 15th, 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 Information of Graduate Council:

- **Clinical Epidemiology**
  1. **Change to Course Description**
     - 771 Fundamentals of Health Research and Evaluation Methods (Online)

- **Rehabilitation Science**
  1. **New Course**
     - 775 Technological Innovation and Rehabilitation

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To : Graduate Council

From : Christina Bryce
Assistant Graduate Secretary

At its meeting on December 11th 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 January 30th, 2019.

For Approval of Graduate Council:

a. English and Cultural Studies
i. Changes in Calendar Copy

For Information of Graduate Council:

b. Communication and New Media
i. New Courses
- 719 Media and Mimesis: Installation and Performance Media
- 720 Data Cultures

c. English and Cultural Studies
i. New Courses
- 704 Writing, Land, and Place
- 706 Fugitive Lives: Documentary Form, Archival Work and the Demands of the Past

ii. Course or Cross-listed Course Cancellations
- **English/Cultural Studies**
  a. 704/709 Contemporary Women's Collaborative Writing
  b. 715 Modern and Post Modern Slavery
  c. 717 Global Sex
  d. 719 Public Intellectuals and Their Work: Intellectual Practices in Culture Studies and Politics
  e. 724 Reproduction, Citizenship and the nation State
  f. 726 Narrative Theory
  g. 727 The New Constellation of Race: Sovereignty, Citizenship, Social Death
  h. 738 Forms of Thought: (New) Critical Thinking and Writing
  i. 739 The Archive and Everyday Life
  j. 740 Medieval Discourses of the Self, 1000-1200
  k. 744 Gender, Violence and Visual Culture
  l. 751 Between Indigeneity and Diaspora

m. 753 Rethinking the Renaissance: The Faerie Queene
n. 766 Feminist, Queer, and Trans Theory
o. 771 Canadian Literary Celebrity
p. 774 Derrida's Wake: On The Futures of Deconstruction
q. 783 Novels of the Margin
r. 787 Post-colonial Ecologies
s. 788 Writing Diaspora: Literature, Community, and Displacement
t. 790 MJ Postmortem: New Critical Reflections
u. 795 Living with HIV/AIDS: On the Discourses of the Pandemic
v. 797 Politics of Our Times

- **Cultural Studies**
  a. 702 Film Theorizes Social and Cultural Differences
  b. 703 Cultural Production and Cultural Studies
  c. 707 Acts of Global Citizenship
  d. 723 Surveillance and Digital Society
  e. 777 Topics in Philosophy and Jewish Thought
  f. 778 Topics in Modern Jewish Thought

d. French

i. New Course

- 6MM3 Sex, violence, and elegance: the eighteenth-century French novel

e. History

i. New Courses

- 778 Decolonizing Indigenous History
- 779 Indigenous Manifestos

ii. Course Cancellations

- 701 – Astronomy in Society
- 708 – Research in European International Relations
- 716 – Social & Cultural History of Victorian Canada
- 718 – Interpretations of Early Modern Britain
- 722 – Research in Modern British History
- 724 – Modern Caribbean History
- 727 – Culture, Politics, and Society in Canada 1939-89
- 730 – Research in War and Society
- 732 – Twentieth Century China
- 733 – Self & Society in the Early Middle Ages
- 737 – Research in Medieval History
- 740 – Medieval Discourses of the Self 1000-1200
- 742 – Early Modern England, France and Germany
- 744 – Research in Soviet History
- 747 – Comparative Settlement Frontiers
- 748 – Research in Canadian History
- 749 – Research in United States' History
- 750 – Research in European History

- 753 – Revolution China, 1949-76
- 758 – Research on the British Empire
- 759 – Public Health and Medicine in Nineteenth c. Canada
- 761 – Themes in the History of the Post-Slavery African Diaspora
- 763 – Research in the History of Modern Africa
- 768 – Canadian Gender History
- 771 – State and Civil Society in Canada 1848-1948

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	English & Cultural Studies
NAME OF PROGRAM and PLAN	Cultural Studies and Critical Theory
DEGREE	**Master's 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	Yes	**EXPLAIN:**
OTHER CHANGES		**EXPLAIN:**

DESCRIBE THE EXISTING REQUIREMENT/PROCEDURE:

Admission and Program Requirements
Candidates for the M.A. in Cultural Studies and Critical Theory will complete two half-year courses (CSCT 732 and 733) and 4 elective half courses (or their equivalent) over the fall and winter terms, with grades of at least B- in each, write a satisfactory major research project of 10,000 to 12,500 words (40 to 50 pages) over the course of the summer, and successfully present the project at a symposium.

The M.A. degree normally requires one full year to complete. The minimum admission requirement is a four-year undergraduate degree in a relevant discipline (or disciplines), and with an average of B+ in at least six full or twelve half courses beyond the introductory level. In recent years, successful candidates typically have had averages of at least 80% in their upper-level courses in their area(s) of specialization.

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

Admission and Program Requirements

Candidates for the M.A. in Cultural Studies and Critical Theory will complete two half-year courses (CSCT 732 and 733) and 4 elective half courses (or their equivalent) over the fall and winter terms, with grades of at least B- in each, write a satisfactory major research project of 10,000 to 12,500 words (40 to 50 pages) over the course of the summer, and successfully present the project at a symposium.

The M.A. degree normally requires one full year to complete. The minimum admission requirement is a four-year undergraduate degree in a relevant discipline (or disciplines), and with an average of B+ in the last six full or twelve half courses beyond the introductory level.

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?):

Clearer representation of the program requirements.

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):

Please see the changes to wording under "recommended change"

CONTACT INFORMATION FOR THE RECOMMENDED CHANGE:

Name: Dr. Peter Walmsley Email: walsmley@mcmaster.ca Extension: 23728 Date submitted: Oct. 25, 2018

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	English & Cultural Studies
NAME OF PROGRAM and PLAN	English
DEGREE	**Master's 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	Yes	**EXPLAIN:**
OTHER CHANGES		**EXPLAIN:**

DESCRIBE THE EXISTING REQUIREMENT/PROCEDURE:

Program Options
A candidate for the M.A. in English has two program options: (1) course work only, or (2) course work and a thesis. Candidates choosing the first option will complete four full graduate courses or their equivalent, three courses in the fall and winter terms and one course in the summer term, with grades of at least B- in each. Candidates choosing the second option will take two full graduate courses or their equivalent over the fall and winter terms, with grades of at least B- in each, write a satisfactory thesis of 25,000 words (100 pages), and successfully defend the thesis in an oral examination, which will normally take place in August or early September.

Admission
The M.A. degree normally requires one full year to complete. The minimum admission requirement is a four-year undergraduate degree with a major concentration in English, Cultural Studies or a related discipline, and with an average of B+ in at least 6 full (or their equivalent courses beyond the introductory level in English), Cultural Studies or the related discipline. In recent years, successful candidates have typically had averages in the A range in their upper-year English courses.

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

Program Options

A candidate for the M.A. in English has two program options: (1) course work only, or (2) course work and a thesis. Candidates choosing the first option will complete four full graduate courses or their equivalent, three courses in the fall and winter terms and one course in the summer term, with grades of at least B- in each. Candidates choosing the second option will take two full graduate courses or their equivalent over the fall and winter terms, with grades of at least B- in each, write a satisfactory thesis of 18,750-25,000 words (75-100 pages), and successfully defend the thesis in an oral examination, which will normally take place in August or early September.

Admission

The M.A. degree normally requires one full year to complete. The minimum admission requirement is a four-year undergraduate degree with a major concentration in English, Cultural Studies or a related discipline, and with an average of B+ in the last 6 full (or their equivalent courses beyond the introductory level in English), Cultural Studies or the related discipline.

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?):

Change to the size of the MA thesis requirements (75-100 pages) and a clearer representation of the program requirements.

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):

Please see the changes to wording under "description of recommended change"

CONTACT INFORMATION FOR THE RECOMMENDED CHANGE:

Name: Dr. Peter Walmsley Email: walsmley@mcmaster.ca Extension: 23728 Date submitted: Oct. 25, 2018

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

SGS/2013

NAME OF FUND: Dr. Cameron Crowe Scholarship in Chemical Engineering
TERMS OF REFERENCE FOR FUND: Established in 2018 by Dr. Cameron Crowe, Professor Emeritus of Chemical Engineering at McMaster University. To be awarded by the School of Graduate Studies to doctoral students in the Department of Chemical Engineering who demonstrate excellent academic performance and are Canadian citizens or permanent residents.

NAME OF FUND: The Gregory Bahun Award for Excellence in Chemistry
TERMS OF REFERENCE FOR FUND: Established in 2018 by Paul and Veronica Bahun in honour of their son Gregory, B.Sc., PhD (Class of 2017). To be awarded by the School of Graduate Studies to full time master's or doctoral students based upon the recommendation of the Department of Chemistry. Students must be enrolled in the department of Chemistry and demonstrates excellent academic performance.

NAME OF FUND: Margaret Black Bursary
TERMS OF REFERENCE FOR FUND: Established in 2018 from the Estate of Margaret Ellen Ann Black, former professor in the School of Nursing. To be granted to graduate students enrolled in the School of Nursing who demonstrate financial need.

McMaster University
HEALTH SCIENCES

INSTRUCTOR GUIDE

For FHS Graduate Course Instructors | Health Sciences Graduate Studies | 2019-2020

1. Introduction

1.1 Welcome

This Instructor Guide is intended for all instructors of graduate-level courses in the Faculty of Health Sciences. It outlines general responsibilities and contains important information and tips for managing your course and creating a positive learning environment for courses that are delivered face-to-face, online or with a blended-learning model.

We suggest that you use this guide as a reference throughout the time of your course, alongside your program's handbook which will contain valuable information pertinent to your program. As well, we encourage to talk to your program head about program-specific policies, and in particular about the following:

- Use of Avenue to Learn (A2L), the primary online learning management system at McMaster
- Policy regarding student absences, particularly missed exams
- Course evaluations and whether the program arranges them, using the MedSIS online evaluation system or by another means
- Responsibilities regarding Teaching Assistants (if you have a TA for your course) and the provisions of the collective agreement
- Document retention, especially email communications, records and assignments
- Requests for letters of reference from students and the program's expectations of instructors regarding these

Finally, if you have suggestions for further information to include in this guide, we ask you to let the Health Sciences Graduate Studies Office know so we can update it.

1.2 Guidelines for Graduate Course Instructors

The School of Graduate Studies (SGS) Graduate Calendar contains guidelines for instructors of graduate courses that should be reviewed as the materials are relevant to all instructors teaching at the graduate level - https://academiccalendars.romcmaster.ca/content.php?catoid=37&navoid=7552#1.2.6_Guidelines_for_Graduate_Course_Instructors.

1.3 Instructor Resources

The MacPherson Institute for Teaching and Learning (https://mi.mcmaster.ca/) offers resources and support for instructors to support innovation, leadership and excellence in teaching and learning. They have resources to aid the professional development of teachers, and offer seminars and workshops to improve your teaching, guidebooks, consultations, teaching and learning networks, and other services. For more information, please visit their website.

2. Preparing Your Course

2.1 First Steps

1. Speak to your program contact regarding the following (Please note that not all items apply to all instructors):
   - Whether you have a Teaching Assistant and associated regulations (e.g. hours of work, type of work, etc.)
   - Date by which a course outline is required (see section on Course Outlines below)
   - Obtaining a valid MacID and password to ensure access to a McMaster email address, Mosaic (portal to McMaster enterprise resource system), and Avenue 2 Learn (McMaster's online learning management system)
   - Classroom assignment
   - Course capacities and permissions (student requests to take your course)
   - Office assignment and keys
   - Regulatory training (Health & Safety, AODA, Privacy)
   - Mail
   - Photocopying
   - Additional room bookings (if necessary)

2. Contact the Campus Store (https://campusstore.mcmaster.ca/faculty-staff/) to order textbooks or arrange for the production of custom courseware. When compiling course readings, please adhere to McMaster's Fair Dealing Policy with regard to copyright - http://copyright.mcmaster.ca./fair-dealing.html . The Campus Store has additional information at https://campusstore.mcmaster.ca/faculty-staff/copyright.html.

3. Contact the Library (https://library.mcmaster.ca/) to place materials on reserve, check holdings relevant to your course material, or to find out about their instructional and research supports.

4. Visit your classroom (if applicable) or view it online in the Classroom Directory (https://library.mcmaster.ca/cct/classroom-directory) to determine if the equipment that you need is there or if you need to arrange for equipment with Campus Classroom Technologies (https://library.mcmaster.ca/spaces/cct).

5. If your interactive sessions with students are online, make sure you are familiar with the web-conferencing software, that students can easily connect, and you and the students know how to get technical support.

6. Avenue to Learn is available to support courses delivered face-to-face, online or with a blended-learning model. To use it, you need to access Avenue to Learn, and request a course shell specific to your course. More information on Avenue to Learn is contained in section 2.3.

7. Access Mosaic (https://mosaic.mcmaster.ca) to view your class roster. Click the following path: "Support and Documentation-Interactive Guides-Faculty Center and Online Grades" for instructions on how to use the various functions. Please note that students don't have to complete their

registration until after classes have begun so your class rosters may not be finalized on the first day of classes. See the Grad Calendar for current sessional dates (https://academiccalendars.romcmaster.ca/content.php?catoid=37&navoid=7560). Report any discrepancies on your class rosters to your program contact. It is good to follow up on these discrepancies to avoid a need for students to petition to register late.

2.2 Course Outline

The course outline is a document that sets the expectations for graduate students in terms of course objectives and content, format, assignments, and evaluation. It is essentially a "contract" between the instructor and the students and cannot be changed significantly (e.g. the weighting of certain items) once the course has begun without the consent of every student in the class.

Prior to the beginning of the term, instructors should review and modify their courses as appropriate to ensure that content reflects the current state of knowledge in the field, instructor research and interest, and academic integrity.

Note: all graduate level courses at McMaster require approval before they are launched and major changes to course content and grading may require submission of a course change document to the Graduate Policy and Curriculum Council (GPCC).

McMaster University Policy on Graduate Course Outlines (https://www.mcmaster.ca/policy/faculty/Teaching/GraduateCourseOutlines.pdf) requires that the following information be included in your outline:

- Administrative details, such as the semester and year (e.g. Winter 2019) of the course, instructor contact information , instructor availability for student consultation, and any prerequisites
- Course objectives
- Required readings and any other required course material
- Overview of the course content and its format
- Description of all assignments (including participation), methods of evaluation, weight given to each course component, due dates and penalties for late submissions
- The Academic Integrity Policy (see below for a link to this policy)
- Any additional relevant statements, such as policies or statements referring to the possible modifications of the course, or research ethics

A course outline should also include these items:

- Course number and name
- Course start and end dates
- Course schedule (day/time), if applicable
- Student and instructor expectations
- Discussion/Posting expectations (if there is an online component to the course, e.g. how often to post)
- Grading rubric(s). Rubrics are encouraged as they provide helpful information to students on how their academic work will be graded.

Please see Appendixes A, B and C for examples of approved course outlines used in FHS graduate programs. A fillable syllabus is available for use in Appendix D.

Appendixes E and F contain samples of participation grading rubrics.

IMPORTANT REQUIREMENTS: Your course outline must be made available to your program contact at least one week before the start of the course, and to students either before or at the first course meeting.

2.3 Avenue to Learn (A2L)

Avenue to Learn (often referred to as A2L or Avenue) is the primary online learning management system used at McMaster. If you are teaching an online or blended course, you will use A2L significantly. If you are teaching a course offered in the traditional face-to-face style, you may use A2L to distribute information to your students (news, course material, emails) or to collect assignments and disseminate grades. Check with your program contact for information on how A2L is used by your colleagues.

Although there are many tools that you may use in A2L, the most popular ones include:

- **Classlist**: The classlist tool can be used for you to track your students' progress. The tool enables you to view user (e.g., student) profiles, personal homepages, learning portfolios, blogs, and course progress. It also permits you to print the classlist, send a page or email, and check enrollment statistics.
- **News**: You can use the news tool to post messages, course information, and other news updates. News items appear in the news widget, but students can also receive instant notifications about postings through email, SMS, and RSS feeds.
- **Content**: The content tool can be used to post course materials so that students can access them.
- **Discussions**: You can use the discussions tool as a collaboration area for students to post, read, and reply to threads on different topics, share thoughts about course materials, ask questions, share files, or work with their peers on assessments and homework.
- **Online Rooms**: With the online rooms tool, you can collaborate with students in an online environment.
- **Quizzes**: The quizzes tool can be used to have students to take a quiz, review their results, and see class statistics (if you choose to make such information visible).
- **Dropbox**: You can use the dropbox tool to enable students to submit assessments electronically by simply uploading their submission to the appropriate dropbox folder. Optionally, submissions to the dropbox can be checked for plagiarism by Turnitin.com (see section 4.6 for more details).
- **Grades**: The grades tool can be used to enable students to check their grades on assessments. They can see their individual grades and comments, as well as class averages and feedback. Students are not able to see the marks of their classmates.
- **Learning Portfolio**: The Learning Portfolio is a tool that you may ask students to use for storing, organizing, reflecting on, and sharing items that represent their learning. They can include items such as documents, graphics, audio files, videos, presentations, and course work to demonstrate their improvement or mastery in certain areas. They can control what items they include in their portfolio, how they are organized, and who they want to share them with. When they share items with their peers, mentors, or potential employers, they can give them permission to view

items, edit items, see or add comments, and see or add assessments to receive feedback. The Learning Portfolio website at McMaster can be found at http://mi.mcmaster.ca/learning-portfolio/

To learn about how to use these features, go to http://avenue.mcmaster.ca/support.html

To login to Avenue, go to http://avenue.mcmaster.ca/ and click the login button. You will need to have your MacID activated before you are able to login.

To request an Avenue shell for your course, go to the Avenue to Learn Course Request Form for Registrar Courses at http://avenue.mcmaster.ca/course/course_request_check.php. All courses are created in an inactive state – you, the instructor, will be able to see the course, but students are unable to see it until you make the course site active.

For questions or concerns, Avenue support is available from Monday to Friday, 8:30 AM to 4:30 PM at (905) 525-9140 ext. 22911, or via email at support.avenue@cll.mcmaster.ca. For technical issues, please use their Support Form, which allows the support team to serve you better.

3. Day One Forward

3.1 Class Roster

As noted above, you can access your class roster on Mosaic, and you should do so prior to the first day of class, and several times during the first weeks of classes. As students have several weeks beyond the first day of classes to register for their courses, your class roster may change during this period. As an instructor, you should verify that all students taking the course have registered on Mosaic and alert students of the drop dates and their need to submit their requests to drop a course that they are registered for in Mosaic in advance of the deadlines. Please notify your program contact if there are any discrepancies in your class roster.

3.2 Connecting with Students

Instructors of all graduate courses are expected to maintain timely communication with students, especially in posting course material and returning assignments and grades/test scores. Feedback on progress is important throughout the course to help students achieve optimum success. Instructors should use students' McMaster email addresses.

If you meet with a student one-on-one about concerns such as: 1) professional behaviours, 2) academic performance (i.e. change in performance), 3) informal mediation, etc., it is prudent to document the meeting through a meeting summary. This meeting summary should be written as an email (so that it is text- and date-stamped) rather than a word or PDF document.

The content of this summary should include a high-level overview of what was discussed at the meeting, and any agreements or next steps made between you and the student. The summary should be objective in nature and may include emotion or reactions observed during the meeting if appropriate (e.g., an outburst).

If the summary is written and sent on a different date than when the meeting was held, the note should indicate the date of the meeting and the date that the summary was prepared.

The student should also be asked to confirm receipt of the summary by a specific time and date and be given an opportunity to provide any suggestions for changes or revisions. Both the initial version of the email summary and the summary from the student should be kept for future reference (i.e. do not delete this email trail and ask your program head about the length of time you should retain these communications).

3.3 Expectations of Students

Each course will have a detailed course outline which should be distributed to students in the class or will be posted on A2L at the start of the term. Students are responsible for reading the course outline, making note of and complying with due dates for course assignments, presentations, exams, posting for online discussions, submitting assignments, writing exams (when required), and allocating their time accordingly. It is expected that students will be available for critical dates listed in the course outline, and that students will follow any online discussion guidelines as applicable. For online courses, the content of online discussions is confidential and therefore should not be shared with individuals outside of the class unless there is permission granted by the author. If you observe that a student is not meeting course expectations, please contact the program.

Students are expected to act according to the McMaster Code of Student Rights and Responsibilities (https://www.mcmaster.ca/policy/Students-AcademicStudies/Code_of_Student_Rights_and_Responsibilities.pdf) and the Professional Behaviour Code of Conduct for Graduate Learners – Faculty of Health Sciences (https://www.mcmaster.ca/policy/Students-AcademicStudies/Professional%20Code-Graduate.pdf). NOTE: A2L is considered an extension of the classroom environment.

The Graduate Calendar lists the responsibilities of graduate students to the university, including expectations for time commitments - https://academiccalendars.romcmaster.ca/content.php?catoid=37&navoid=7552#1.3_Responsibilities_of_Graduate_Students_to_the_University_

3.4 Student Participation

When participation is an evaluation criterion, it is suggested that you keep notes about the quality and quantity of students' participation. We encourage use of a participation grading rubric, and sharing the grading scheme of the rubric with the students so that they are aware of the expectations for participation. Alerting students early of concerns about their progress gives them a chance to improve during the course. Most graduate-level courses have a limit on the percentage of the total grade that is given for participation (no more than 20%). Please note: if students are expected to provide input on other students' contributions to a course (e.g., on their presentations), the instructor can consider their input but only faculty members (and teaching assistants) can assign actual grades for students in a course. Appendices D and E provide examples of participation grading rubrics.

3.5 Student Absence

The McMaster Student Absence Form and policy is accessible online at https://www.mcmaster.ca/msaf/ Students must advise the instructor in advance if they plan to be absent for any time during a course. Students are expected to make arrangements to keep up with course work despite planned vacation time or unavailability due to work-related responsibilities. Alternate arrangements are at the discretion of the Instructor. Absences declared after deadlines are not acceptable. Students who will miss scheduled examinations must inform the instructor beforehand or as soon as possible afterwards. Programs have different policies regarding making up missed exams; check with your program contact.

3.6 Absence of the Instructor

If you must be absent for a period of time during the course, prior to your absence, notify students and your program contact.

If you cannot fulfill your responsibilities for more than 5 days, you should discuss your situation with your program contact in order to arrange for a substitute instructor and to advise the students of the change. Programs have different policies concerning instructor absences that may include reassignment of duties and pay adjustments. Ask your program contact about this policy.

4. Course Administration

4.1 Academic and Research Integrity

The Academic Integrity Policy explains the expectations the University has of its scholars. Breaches of academic integrity generally fall into two categories: 1) disregard for the norms of scholarly integrity, without necessarily intending to deceive; and 2) academic dishonesty. The Academic Integrity Policy defines academic dishonesty and specifies the procedures to be followed in the event that a student is charged with a breach of academic integrity. There is a range of penalties up to and including expulsion from the University.

Copies of the Academic Integrity Policy and the Research Integrity Policy can be found on the website of the Office of Academic Integrity (https://www.mcmaster.ca/academicintegrity/). You may also contact the Academic Integrity Officer, Kimberly Mason, if you have questions or concerns: acinteg@mcmaster.ca; 905-525-9140 x24303.

Graduate students are required to take SGS 101 and SGS 201, which cover academic and research integrity. Therefore, they are well aware of the policy and you can hold them to a high bar with respect to this issue.

4.2 Privacy at McMaster (FIPPA) and Handling of Personal Information

McMaster University is committed to protecting the privacy, confidentiality and security of all personal information that has been entrusted to us. McMaster University provides this protection, in part, by complying with Ontario's Freedom of Information and Protection of Privacy Act (FIPPA), RSO 1990. This Act establishes rules concerning the collection, use and disclosure of personal information (PI). For more details on the Privacy Governance and Accountability Framework, please see http://www.mcmaster.ca/privacy/privacy/privacy-index.cfm# .

If you discover or suspect a breach of personal information has occurred, immediately inform the University's Hearings, Policy, and Privacy Manager, Michelle Bennett (michelle.bennett@mcmaster.ca or x23077), to determine how to proceed. Also inform your program contact. For more details and the steps on how to address a privacy breach, please review the University's Privacy Breach Protocol: http://www.mcmaster.ca/privacy/privacy/policy/privacy-breach-protocol.pdf .

4.3 Support for Students in Distress and Difficulty

The McMaster Student Affairs office coordinates services to support the overall health and welfare of students at McMaster. Their Student Support and Case Management Office provides a tool to help faculty, staff and student peers help students in distress or difficulty. You can review their tool, Responding to Students in Distress or Difficulty, here - https://wellness.mcmaster.ca/app/uploads/2018/09/Responding-to-Students-Tool.pdf. If you have questions or need assistance, contact the Director, Allison Drew-Hassling, at adrewh@mcmaster.ca or Ext 20750.

4.4 Academic Accommodation of Students with Disabilities

The McMaster University policy on academic accommodation of students with disabilities can be accessed online at https://www.mcmaster.ca/policy/Students-AcademicStudies/AcademicAccommodation-StudentsWithDisabilities.pdf. McMaster University is committed to ensuring that each student is afforded an academic environment that is dedicated to the advancement of learning and is based on the principles of equitable access and individual dignity. To this end, Student Accessibility Services (SAS) is a resource available to students who require accommodations to meet course expectations. To facilitate accommodations, the student is urged to meet with an SAS advisor to discuss their needs.

It is the responsibility of the student to declare their disability to SAS and, in collaboration with SAS, to create an accommodation plan. The student will provide the instructor with a letter outlining SAS-approved accommodation(s) for the instructor's review and signature, as appropriate. The student and instructor (and course coordinator, if applicable) will jointly discuss and agree on a plan as to how each accommodation will be provided. The policy also provides accommodation for Temporary Disability from a short-term injury or illness or an episodic condition (e.g. mental illness), as outlined in the document.

4.5 Religious, Indigenous or Spiritual Observances (RISO)

McMaster University strives to be welcoming and inclusive of all its members and respectful of their differences. The University recognizes that, on occasion, the timing of a student's religious, Indigenous, or spiritual observances and that of their academic obligations may conflict. In such cases, a student is to complete the RISO form and then the University will provide reasonable academic accommodation that is consistent with the Ontario Human Rights Code, through respectful, accessible, and fair processes. Instructors are encouraged to reach out to program administrative staff for assistance with RISO accommodations.

RISO Policy: http://www.mcmaster.ca/policy/Students-AcademicStudies/AcademicAccommodation-Observances.pdf

4.6 Using Turnitin.com

McMaster has purchased an institutional membership with Turnitin.com, a web-based service that detects internet plagiarism. Turnitin is a technological response to a plagiarism problem that is getting worse because of the technology of the web. McMaster University approves the use of Turnitin.com for the following reasons:

- Prevention – if students are aware that their academic work is checked for plagiarism, they are more likely to use proper citation methods
- Protection of honest students and their work
- Detection – with the type of technology in common use today, it is necessary to use a detection tool which checks academic work against the internet

Papers should be submitted to Turnitin.com only with the student's knowledge. Please indicate in the course outline and in the assignment details that Turnitin.com will be used. The use of Turnitin.com cannot be mandatory. If a student refuses to submit their work to Turnitin.com, they cannot be compelled to do so and should not be penalized. If a student does not wish Turnitin to be used for their assignments, the student will

- Notify the instructor of this in writing at the beginning of the term, and
- Ensure that the submission of the assignment meets the required timelines/due dates.

Consult your program contact to see if there are any program-specific policies regarding Turnitin.com. University guidelines and instructions on Turnitin.com can be found at https://www.mcmaster.ca/academicintegrity/turnitin/instructors/index.html

4.7 Late Submission of Work

Check with your program contact to see if there are any program-specific regulations regarding late submission penalties, or if you are allowed to set your own. These penalties must be clearly stated in your course outline.

4.8 Ownership of Student Work

For work done by a graduate student, McMaster University has policies related to the interpretation of copyright and other aspects of intellectual property rights. These policies distinguish in general between items done solely by the student and those undertaken as part of a joint research effort.

In the former case, the intellectual property is primarily the student's, but the University reserves certain rights (see the link below for more information). In the latter case, the intellectual property rights involve the student, the research supervisor, (and possibly other individuals as well), the University, and on occasion the financial sponsor of the research. If the work is anticipated to have commercial possibilities, it is recommended that the parties involved agree in writing beforehand on the sharing of any financial returns. The Associate Deans of Graduate Studies are available for confidential consultations on matters of ownership of student work involving faculty and/or other individuals.

Please see the Graduate Calendar (https://academiccalendars.romcmaster.ca/content.php?catoid=37&navoid=7550#6.4_Ownership_of_Student_Work) for policies regarding the following types of student work:

- Examinations, Reports and Papers Done as Part of Course Requirements
- Theses and Master's Project Reports
- Computer Programs
- Research Data
- Equipment

4.9 Student/Faculty Non-Disclosure Agreements

Cooperation of faculty with the private sector can sometimes involve graduate students. When this happens, it is not unusual for a company to protect its interests by asking the faculty member and the student to sign a confidential Non-disclosure Agreement. Such agreements are signed by the McMaster Industrial Liasion Office (MILO) and apply to all members of the university including students involved in the work. These agreements can restrict conditions for a number of matters important to students, such as their wish to publish research results, the thesis defence, and the deposit of the thesis with libraries. In all cases, the restrictions are reasonable and do not clash with academic principles that require the presentation of research findings for peer assessment.

For more information, see the Graduate Calendar (https://academiccalendars.romcmaster.ca/content.php?catoid=37&navoid=7550#6.6_Student_Faculty_Non-Disclosure_Agreements)

4.10 Conflict of Interest Guidelines

All faculty members responsible for the evaluation of graduate students have a general responsibility to the University to ensure that they are not in a position of conflict of interest (or the appearance of a conflict of interest) in their obligations to the University with regard to the nature of their relationships with graduate students. Specifically, a faculty member may not be involved in the evaluation of a graduate student if the faculty member has a close family relationship with the student (including spouse, parent, child, sibling, niece/nephew or spouses of the foregoing), if the faculty member is, or has been engaged to be married to the student, or if the faculty member has (or has had) an intimate personal relationship with the student. Evaluation includes grading course work or examinations (including the defence of a thesis) and supervision, whether as the principal supervisor or as a member of a supervisory committee. In the case of teaching assistants, conflicts of interest in grading graduate students in the course should be brought to the attention of the course instructor.

A faculty member should question the propriety of evaluating a graduate student if there exists a distant family relationship with the student, or if the faculty member and the student maintain or have had a business relationship or any other relationship which should reasonably give cause for concern.

Questionable cases should be referred to the Vice-Provost & Dean of Graduate Studies for a decision.

4.11 Workplace and Environmental Health and Safety

McMaster University is committed to provide and maintain healthy and safe working and learning environments for all employees, students, volunteers and visitors. This is achieved by observing best

practices which meet or exceed the standards to comply with legislative requirements as contained in the Ontario Occupational Health and Safety Act, Environmental Protection Act, Nuclear Safety and Control Act and other statutes, their regulations, and the policy and procedures established by the University. To support this commitment both McMaster University and its employees are responsible jointly to implement and maintain an Internal Responsibility System directed at promoting health and safety, preventing incidents involving occupational injuries and illnesses or adverse effects upon the natural environment.

Please speak with your program contact about any possible health and safety concerns that might arise in your course regarding yourself, your students and possible visitors.

For more information, see the FHS Safety Office website at https://fhs.mcmaster.ca/safetyoffice/ .

5. Grading/Assessment

5.1 The Grading System

It is anticipated that there will be a range of grades in each course reflecting the full grade scale of A+ to B- (the minimum passing grade for a graduate-level course), and in some rare circumstances, an F.

It is anticipated that the majority of student grades will typically cluster in the A- range, with a very small portion of grades in the B/B- and A+ range. The grade of A+ is reserved for a very exceptional level of achievement by a student who, by definition, typically does not represent more than a very small minority of the students registered in a course. Grades in the B/B- range are for those students who meet only the minimum requirements of the course.

Instructors may grade course work using either a percentage or letter grade. All components of the course grade will be translated into a final letter grade. Final grades are submitted via Mosaic to the School of Graduate Studies for transcription onto the student's academic record. Instructions can be found below, under "Submission of Grades."

Final grades should be reflective of the quality of the work submitted. Courses with exceptionally high final grades may trigger a review.

Conversion of percentage to letter grades for graduate-level courses are summarized in the table below:

Percentage	90 – 100	85 – 89	80 – 84	77 – 79	73 – 76	70 – 72	0 – 69
Letter Grade	A+	A	A-	B+	B	B-	F

5.2 Timing of Assignments and Student Evaluation

PLEASE NOTE: Students should be required to complete an assignment and receive evaluation from the instructor before the last date to drop a course without academic penalty (see Sessional Dates link in Section 7.2). This needs to be considered when developing the course exam/assignment/presentation schedule. With regard to other course requirements, instructors should strive to provide assessments to students in a timely manner. This allows students to have a better understanding of how they are doing in the course, and gives them time to address deficiencies or problems with their work.

5.3 Incomplete Grades

Under exceptional circumstances, an instructor may approve an extension (usually up to a few weeks) for a student for the completion of work in a course and, in the interim, assign an incomplete grade (INC). A student who receives this permission must complete the work as soon as possible, and in any case, early enough to allow the instructor to report the grade to the School of Graduate Studies by the date specified in the School of Graduate Studies Calendar. If the INC grade is not cleared by the deadline, a failing grade will automatically be recorded. Please speak with your program's administrator when this situation arises.

5.4 Failing Grade

At the graduate level, grades below B- or 70% are course failures. A student who fails to obtain at least a B- grade in any course will typically be required to withdraw from his/her program, particularly if this is second failure. If it is apparent that a student is at risk of failure during the course, please discuss performance with the student as soon as possible and advise the program's Assistant Dean or Program Director and administrator of the situation without delay. A formal appeal process is available to students. Instructors and programs have the discretion to offer informal remediation before such escalation is required.

5.5 Submission of Grades

Once final grades are calculated, and grade rosters are uploaded by SGS, you must submit your grades through Mosaic, even if you have been using A2L for the course. A user guide that outlines how to submit final grades, incomplete grades and grade changes can be found at the following link: http://mcmaster.ca/mosaic/faculty/online-grade-user-guide.pdf . Please send an email to the program's administrator once you submit your information so that the correct approver can be notified and they can complete the process. All submitted grades will be approved by a member of the program's executive team.

Under exceptional circumstances a course instructor may approve an extension for the student for the completion of work in a course and assign an Incomplete grade (INC). At the same time the instructor submits an incomplete grade, they have to also submit a lapse-to grade (the grade that will default on the date to clear incompletes). Normally this extension is in the range of a few weeks. A student who receives this permission must complete the work as soon as possible, and in any case early enough to allow the instructor to report the grade to the School of Graduate Studies by the date specified in the Sessional Dates. If the INC grade is not cleared by the deadline, a lapsed grade will automatically be recorded.

Students can access final course grades on Mosaic. **Instructors are not permitted to communicate final grades to the student** and should direct students to view their final grades on Mosaic.

5.6 Document Storage and Shredding

The instructor should consult with the program on their policy regarding written records for their course (e.g. shredding, storage of essays, assignments, written examinations, completed rubrics) for a specified period of time. It is considered good practice to maintain original records for one year after the course ends, as records must be available for least one term after the course ends in case there are any formal

appeal requests. Accordingly, there must be retention of a copy of all graded work worth 10% or more of the final grade *including any original marked assignments returned to students*.

6. Quality Monitoring and Evaluation of Graduate Courses

The Faculty of Health Sciences actively encourages quality monitoring and improvements to graduate program courses. Programs are able to share the course and instructor evaluations with the instructor once the minimum threshold number of evaluations is met or exceeded. Programs affiliated with Health Sciences have the opportunity to use an online graduate course and instructor evaluation system and Instructors are encouraged to consult with the program administrator about the process used for their course evaluation. The Health Sciences Graduate Studies Office prepares periodic, anonymized summaries of the evaluations for graduate course and graduate course instructors using the online evaluation system so that programs, and instructors, have relevant comparisons. As quality improvement is valued, instructors should consult with their program about potential course improvements and if they require submission of a course change form or merely an update to the course outline.

7. Resources

7.1 For Students

The following are some key services that are available for graduate students:

- Student Accessibility Services – a resource for students requiring accommodations- http://sas.mcmaster.ca/
- School of Graduate Studies – academic skills and writing support - https://gs.mcmaster.ca/graduate-student-life/graduate-student-life
- Student Wellness Centre – includes counselling, crisis management and medical care - http://wellness.mcmaster.ca/
- International Student Services - iss@mcmaster.ca

7.2 For Instructors

The following information sources might be useful to you:

- Campus Map - https://www.mcmaster.ca/welcome/campusmap.cfm
- Parking and Transit Services - http://parking.mcmaster.ca/
- Sessional Dates - https://academiccalendars.romcmaster.ca/content.php?catoid=37&navoid=7560
- University Technology Services (UTS) - https://www.mcmaster.ca/uts/
- Equity and Inclusion Office - http://www.hres.mcmaster.ca/
- FHS Human Resources Services - https://fhs.mcmaster.ca/hr/

- McMaster University Faculty Association - http://macfaculty.ca/
- CUPE Local 3906 - https://cupe3906.org/
- Appended materials on course outlines and grading rubrics

Appendix A- Sample Course Outline (online delivery)

CLPPC 705 Grief, Loss and Bereavement in Childhood and Adolescence

Instructors

Cathy Humphreys MSc, CCLS humphrc@mcmaster.ca
Please email either McMaster or Avenue email

Ceilidh Eaton Russell PhD(c), CCLS
eatoncj@mcmaster.ca
Please email either McMaster or Avenue email

Course Dates: Thursday Jan 2nd to Monday April 7th, 2019

Course Description:

This course will explore children's and adolescents' experiences of loss, grief and bereavement including complicating factors as well as sources of support and resilience. Topics to be addressed include loss through separation and divorce, illness, hospitalization and/or death of a caregiver or sibling, and communicating with the terminally ill child. Tools, techniques and coping strategies in supporting children and youth within the context of family-centered care will be explored. This course is offered online. One real- time interactive online session is also required.

This is a 14-week online course that includes recorded lectures by course instructors, followed by key questions, case studies and/or video clips for group discussion within Avenue to Learn discussion boards each week.

Required Text:
Eaton Russell, C. (2007). Living dying: a guide for adults supporting grieving children and teenagers. Toronto, ON: Max and Beatrice Wolfe Children's Centre. Available for purchase at https://drjaychildrensgriefcentre.ca/living-dying/

Bingley, D. (Ed). (2016). *A Handbook for Volunteers: Supporting Children Grieving the Dying and Death of a Loved One*. Brampton, ON: Children and Youth Grief Network. Available at no cost. By email request at https://www.childrenandyouthgriefnetwork.com/#handbook *Only electronic copies are currently available.*

Bingley, D. (Ed). (2018). *A Handbook for Supporters: Extending Compassion and Care to Grieving Youth*. Brampton, ON: Children and Youth Grief Network. Available at no cost, by email request at https://www.childrenandyouthgriefnetwork.com/#handbook
Only electronic copies are currently available.

Method

This online course will consist of learning modules, small group discussions and case studies. Learners will use course content (on the Avenue to Learn course website), readings and texts as resources for learning. Students are expected to participate in discussions regularly by posting thoughts, and synthesizing and communicating information. Students will also critically evaluate evidence, discuss its application to clinical practice, and engaging in scholarly debate with students and faculty.

Students and instructors will interact and communicate online through use of asynchronous and/or synchronous discussions. Regular communication through email will also be maintained. Please allow 2 business days for instructors to respond. The opportunity for real time chats and/or phone meetings will be available for students when needed upon request.

Learners will also be responsible for the completion of assignments. Assignments require learners to demonstrate Master's level analysis skills, consolidation of information, structured arguments on topics in professional practice and integration of professional/clinical application. A passing grade for courses at the graduate level is a B-.

Evaluation Criteria:

Assignment	Grade Value	Due Date
Critical Reflection Assignment	10	January 13, 2019
Quiz 1	15	During week of Jan. 28 to Feb. 3, 2019
Quiz 2	15	During week of Feb. 18 to Feb. 24, 2019

Paper	25	March 10, 2019
Demonstration of intervention	15	March 24, 2019
Discussions	20	Ongoing
Total	**100**	

Assignment Submissions

You should adhere to the following criteria for assignment preparation:

1. All assignments must;
    - be submitted in Microsoft word (.doc/.docx) only
    - include a title page with all relevant course information
    - adhere to the page limits specified
    - be formatted with 12 pt. font and standard margins

2. The citations and references in all assignments (if applicable) must use APA style

Late Policy for Assignments

Deadlines for assignments and quizzes are provided within this syllabus. We understand that there may be a time when something unexpected arises. Each student will therefore have the option of instituting a 3-day extension on 1 occasion without needing to seek instructor approval beforehand. Please advise the instructors up to the deadline if you intend to institute using this 1 free 3-day extension via email so they are aware. Any other extensions must be determined in consultation with the instructor well **before** the deadline.

Outside of these exceptions, grade deductions will be cumulative and deducted 10% for the first day, additional 10% for the second day, additional 20% for the third day, additional 20% for the fourth day and the fifth day will be deducted an additional 30%.
Assignments will not be accepted after five days of the submission deadline, and you will receive a grade of zero. Students must be aware that late submissions will result in delayed feedback/grades.

Deductions begin after 11:59pm EST of the due date until 11:59pm EST the next day.

Number of Days Late Submission of Assignment	Cumulative Penalty
1	10% deduction from final grade
2	20% deduction from final grade
3	40% deduction from final grade
4	60% deduction from final grade
5	90% deduction from final grade
6	Final grade of 0; submission not accepted

Academic Integrity

You are expected to exhibit honesty and use ethical behaviour in all aspects of the learning process. Academic credentials you earn are rooted in principles of honesty and academic integrity. Academic dishonesty is to knowingly act or fail to act in a way that results or could result in unearned academic credit or advantage. This behaviour can result in serious consequences, e.g. the grade of zero on an assignment, loss of credit with a notation on the transcript (notation reads: "Grade of F assigned for academic dishonesty"), and/or suspension or expulsion from the university. It is your responsibility to understand what constitutes academic dishonesty.
For information on the various types of academic dishonesty please refer to the Academic Integrity Policy, located at http://www.mcmaster.ca/academicintegrity.

The following illustrates only three forms of academic dishonesty: 1. Plagiarism, e.g. the submission of work that is not one's own or for which other credit has been obtained. 2. Improper collaboration in group work. 3. Copying or using unauthorized aids in tests and examinations.

All assignments in this course are put through Turnitin.

Academic Accommodation of Students with Disabilities

Students who require academic accommodation must contact Student Accessibility Services (SAS) to make arrangements with a Program Coordinator. Academic accommodations must be arranged for each term of study. Student Accessibility Services can be contacted by phone 905- 525-9140 ext. 28652 or e-mail sas@mcmaster.ca. For further information, consult McMaster University's Policy for Academic Accommodation of Students with Disabilities: https://www.mcmaster.ca/policy/Students- AcademicStudies/AcademicAccommodation-StudentsWithDisabilities.pdf

Use of Avenue to Learn

In this course we will be using Avenue to Learn. Students should be aware that, when they access the electronic components of this course, private information such as first and last names, user names for the McMaster e-mail accounts, and program affiliation may become apparent to all other students in the same course. The available information is dependent on the technology used.
Continuation in this course will be deemed consent to this disclosure. If you have any questions or concerns about such disclosure please discuss this with the course instructor.

As a student enrolled in this course you have been granted permission to access an online learning management system, Avenue to Learn. Avenue to Learn course pages are considered an extension of the classroom and usage is provided as a privilege subject to the same code of conduct expected in a lecture hall (see relevant section of the Code of Student Rights and Responsibilities below). This privilege allows participation in course discussion forums and access to supplementary course materials. Please be advised that all areas of Avenue to Learn, including discussion forums, are owned and operated by McMaster University. Any content or communications deemed inappropriate by the course instructor (or designated individual) may be removed at his/her discretion.
Per the University Technology Services Code of Conduct, all members of the McMaster community are obligated to use computing resources in ways that are responsible, ethical and professional. Avenue to Learn Terms of Use are available at http://avenue.mcmaster.ca.

Code of Student Rights and Responsibilities
http://studentconduct.mcmaster.ca/student_code_of_conduct.html

As per section 22 of the Code, all students have the following responsibilities:

22. All students are responsible for:
    a) acting in accordance with the law and this Code;
    b) being acquainted with the relevant related policies as they apply to all students as well as to their specific role(s) within the University;
    c) supporting an environment free from harassment, intimidation, discrimination, assault, and Sexual Violence;
    d) treating others in a way that does not harm them physically and/or threaten or intimidate them emotionally or mentally;
    e) appropriately respecting the personal privacy of other students;
    f) consuming legal substances in a safe and responsible manner; and

g) complying with any disciplinary measures assigned under this Code, and respecting the authority of University officials in the course of their duties.

Discussion Rubric

Assessment rubric for class participation (20% of final mark). Assessment rubric for class participation (20% of final mark). A minimum of 3 posts per discussion week with at least two original posts are expected.

3 marks	**2 marks**	**1 mark**	**0 marks**
Participates actively throughout the week. Demonstrates very good understanding of the topic and assigned readings. Demonstrates familiarity with the topic and/or ability to engage constructively with others' points of view and posts. Promotes new learning by contributing new information, demonstrates integration of content and/or providing content analysis. Takes risks, contributes to supportive environment and engaged conversations	Participates actively. Demonstrates familiarity with the topic and/or ability to engage constructively with others' points of view. Participates actively throughout the week. Promotes learning by contributing new information, demonstrates integration of content and/or providing content analysis.	Student contributes somewhat to the online discussion (usually only just prior to deadline), but demonstrates little familiarity with topic readings, restates previous posts; adds no new information or analysis. No evidence of integration of others posts.	Little or no evidence that student has completed class readings; no contribution to class discussion.

Topics and Schedule:

At certain points in the course it may make good sense to modify the schedule outlined below. The instructor reserves the right to modify elements of the course and will notify students accordingly through Avenue to Learn. ***This course will be closed on Avenue to Learn one month after the term concludes and all grades for the course are in.***

Please refer to the content section of the Avenue to Learn course shell for the most up to date required, supplementary/recommended readings and resources. Avenue to Learn is the final source of information*

Week and Topic	Readings
Jan. 2-6, 2019 Week 1 **Introduction to Grief and Loss** including overview of Ambiguous Loss	No required readings this week. Lecture and discussion only.
Jan. 7-13, 2019 Week 2 **Grief Theories** including Continuing Bonds theory, the Dual Process Model & Balancing Grief and Survival	**Required Reading** Stroebe, M., Schut, H., & Boerner, K. (2010). Continuing bonds in adaptation to bereavement: Toward theoretical integration. *Clinical psychology review*, 30(2), 259-268. Eaton Russell, C., Bouffet, E., Beaton, J., & Lollis, S. (2016). Balancing Grief and Survival: Experiences of Children with Brain Tumours and Their Parents. *Journal of Psychosocial Oncology*, 34(5), 376-399.
Jan. 14-20, 2019 Week 3 **Children and young people's understanding of death**	**Required Reading** Christ, G. H., & Christ, A. E. (2006). Current approaches to helping children cope with a parent's terminal illness. CA: *A Cancer Journal for Clinicians,* 56(4), 197-212. Eaton Russell, C. (2007). Living dying: a guide for adults supporting grieving children and teenagers. Toronto, ON: Max and Beatrice Wolfe Children's Centre. ***pg. 6-42.*
Jan. 21-Jan. 27, 2019 Week 4 **Children and young people's experience of grief**	**Required Reading** Eaton Russell, C, Widger, K., Beaune, L., Neville, A., Cadell, S., Steele, R., ... & Barrera, M. (2017). Siblings' Voices: A Prospective Investigation of Experiences with a Dying Child. *Death studies*, DOI: 10.1080/07481187.2017.1334009. Packman, W., Horsley, H., Davies, B., & Kramer, R. (2006). Sibling bereavement and continuing bonds. *Death studies*, 30(9), 817-841. Keeley, M. P., & Generous, M. A. (2014). Advice from children and adolescents on final conversations with dying loved ones. *Death Studies*, 38(5), 308-314.

	Suggested Reading Steele AC, Kaal J, Thompson AL, Barrera, M., Compas, B.E., Davies, B., Fairclough, D.L., Foster, T.L., Gilmer, M.J., Hogan, N., Vannatta, K., Gerhardt, C.A. (2013). Bereaved parents and siblings offer advice to health care providers and researchers. *Journal Pediatric Hematology Oncology*, 35(4):253-259.
Jan. 28-Feb. 3, 2019 Week 5 **When a child is dying**	**Required Reading** Webster, M. L., & Skeen, J. E. (2012). Communicating with Children: Their Understanding, Information Needs, and Processes. *Pediatric Psycho-Oncology: Psychosocial Aspects and Clinical Interventions*, Second Edition, 71-91. Hinds, P. S., Drew, D., Oakes, L. L., Fouladi, M., Spunt, S. L., Church, C., & Furman, W. L. (2005). End-of-life care preferences of pediatric patients with cancer. *Journal of Clinical Oncology*, 23(36), 9146-9154. Pearson, L. (2018). Child Life Interventions in Critical Care and at the End of Life. In R. Thompson (Ed.), *The Handbook of Child Life: A Guide for Pediatric Psychosocial Care, Second Edition* (pp. 392-419). Springfield, IL: Charles C Thomas. **Suggested Reading** American Academy of Pediatrics Section on Hospice and Palliative Medicine and Committee on Hospital Care. (2013). Pediatric Palliative Care and Hospice Care Commitments, Guidelines, and Recommendations. *Pediatrics*, 132 (5) 966-972; DOI: 10.1542/peds.2013-2731 Aschenbrenner, A.P., Winters, J.M., Belknap, R.A. (2012). Integrative Review: Parent Perspectives on Care of Their Child at the End of Life. *Journal of Pediatric Nursing*, 27(5), 514- 522. Cherlin, E., Schulman-Green, D., & McCorkle, R. (2004). Family perceptions of clinicians' outstanding practices in end-of-life care. *Journal of Palliative Care*, 20(2), 113–116.
Feb. 4-Feb. 10, 2019 Week 6	**Required Reading** Chowns, G. (2013). *'*Until it ends, you never know…': Attending to the voice of adolescents

"Losing" a caregiver and Swift Transformations	who are facing the likely death of a parent. *Bereavement Care*, 32(1), 23-30. http://dx.doi.org/10.1080/02682621.2013.779822 Lollis, S. (2009). "*We Lost Touch of Who Each Other Was": Swift Transformations in Close Relationships*. Pathways of human development: explorations of change, 35-52.
Feb. 11-17, 2019 Week 7 **Needs and strategies for supporting grieving children and families**	**<u>Required Reading</u>** Haine, R. A., Ayers, T. S., Sandler, I. N., & Wolchik, S. A. (2008). Evidence-based practices for parentally bereaved children and their families. *Professional Psychology: Research and Practice*, 39(2), 113. Brown, C. (2018). Working with Grieving Children and Families. In R. Thompson (Ed.), *The Handbook of Child Life: A Guide for Pediatric Psychosocial Care, Second Edition* (pp. 420-445). Springfield, IL: Charles C Thomas. Irish Childhood Bereavement Network (2014) *The Irish Childhood Bereavement Care Pyramid : a guide to support for bereaved children and young people* ICBN, Dublin ****pp. 4-13* http://www.childhoodbereavement.ie/pyramid/
Feb. 18-Feb. 24, 2019 Week 8 **Suicide and Cultural Considerations in working with the dying and bereaved**	**Live session to be held this week. Date TBA.** KidsGrief Website, Chapter 4. When Death is Sudden or Unexpected. https://kidsgrief.ca/mod/lesson/view.php?id=351 KidsGrief Website, Chapter 5. When Death is from Suicide. https://kidsgrief.ca/mod/lesson/view.php?id=361 Living my Culture. Canadian Virtual Hospice. http://livingmyculture.ca/culture/ **<u>Suggested Reading</u>** Jordan, J. R. (2001). Is suicide bereavement different? A reassessment of the literature. *Suicide and life-threatening behavior*, 31(1), 91-102. Wiener, L., Grady McConnell, D., Latella, L., Ludi, E. (2013). Cultural and religious considerations in pediatric palliative care. *Palliative and Supportive Care,* 11, 47-67.

Feb. 25-Mar.3, 2019 Week 9 **Rituals and Remembering**	**Required Reading** Softing, G.H., Dyregrov, A., Dyregrov, K. (2016). Because I'm also part of the family. Children's participation in rituals after the loss of a parent or sibling: A qualitative study from the children's perspective. *Journal of Death & Dying,* 73(2), 141–158. **Suggested Reading** Wolfelt, A.D. (2003). Creating Meaningful Funeral Experiences: A Guide for Caregivers. Revised Edition. Companion Press. Fort Collins, Colorado.
Mar. 4-Mar. 10, 2019 Week 10 **Support Groups**	**Required Reading** LaFreniere, L., Cain, A. (2015). Parentally bereaved children & adolescents: The question of peer support. *Journal of Death & Dying*, 71(3) 245–271. Griese, B., Burns, M., Farro, S.A. (2018). Pathfinders: Promoting healthy adjustment in bereaved children and families. *Death Studies*, 42(3), 134-142. Woods, K., Mayes, S., Bartley, E., Fedele, D., Ryan, J. (2013). An Evaluation of Psychosocial Outcomes for Children and Adolescents Attending a Summer Camp for Youth With Chronic Illness. *Children's Health Care,* 42(1), 85–98. doi: 10.1080/02739615.2013.753822
Mar. 11-Mar. 17, 2019 Week 11 **Therapeutic Activities**	**Required Reading** Foster, T.L., Dietrich, M.S., Friedman, D.L., Gordon, J.E., Gilmer, M.J. (2012). National survey of children's hospitals on legacy-making activities*. Journal of Palliative Medicine*, 15(5), 573-8. doi: 10.1089/jpm.2011.0447 Eaton Russell, C. (2007). Living dying: a guide for adults supporting grieving children and teenagers. Toronto, ON: Max and Beatrice Wolfe Children's Centre. ***pg. 43-56* Bingley, D. (Ed). (2016). *A Handbook for Volunteers: Supporting Children Grieving the Dying and Death of a Loved One*. Brampton, ON: Children and Youth Grief Network. Bingley, D. (Ed). (2018). *A Handbook for Supporters: Extending Compassion and Care to Grieving Youth*. Brampton, ON: Children and Youth Grief Network.

Mar. 18-Mar. 24, 2019 Week 12 **Self Care**	**<u>Required Reading</u>** Fisackerly, B.L., Sira, N., Desai, P.P., McCammon, S. (2016). An examination of compassion fatigue risk in certified child life specialists. *Children's Health Care*, 45(4), 359-375 doi:10.1080/02739615.2015.1038716 Granek, L., Bartels, U., Barrera, M., & Scheinemann, K. (2015). Challenges faced by pediatric oncology fellows when patients die during their training. *Journal of Oncology Practice*, 11(2), e182-e189. **<u>Suggested Reading</u>** Wolfelt, A.D., (2012). Companioning You!: A Soulful Guide to Caring for Yourself While You Care for the Dying and the Bereaved. Companion Press. Fort Collins, Colorado.
Mar. 25-Mar. 31, 2019 Week 13 **Student Therapeutic Intervention Presentations**	**Live session to be held this week. Date TBA.** The class will be divided into two smaller groups. Students will present their intervention presentations. These will be recorded via Zoom and uploaded to Avenue to Learn so you can also view the presentations from the other group this week to gain more ideas for your clinical toolbox.
Apr.1-Apr. 7, 2019 Week 14 **Final Review/Wrap- up**	**Live session to be held this week. Date TBA.** No readings this week. Final review/wrap-up of course material and therapeutic interventions.

Appendix B- Sample Course Outline (in-class delivery)

Course coordinator:
Cynthia Lokker, PhD
MSc eHealth, Faculty of Health Sciences Lead, Assistant Professor, Dept of HEI,
McMaster University, CRL 137
lokkerc@mcmaster.ca; Phone: 905-525-9140 x22208

Office hours:
I won't have set office hours, but you can arrange a meeting time with me via email. My office is in the Communications Research Lab, Room 137 (building 43 on the campus map).

TA: TBA

COURSE OVERVIEW

Course Description

HRM 724 – eHealth: Fundamentals of eHealth and the Canadian Health Care System

This tutorial-based course will cover a broad range of eHealth topics from the perspective of health care delivery. We start with an introduction to the Canadian healthcare system—how it's structured and funded. During the course we will look at some elements of healthcare in detail: primary care, medication management, homecare, and public health. We will also look at important functions of eHealth applications, such as computerized decision support, quality improvement, and patient safety. We will spend one of our sessions touring the Mohawk MEDIC lab showcasing some applications for healthcare.

Much of eHealth is implemented as a result of system and organizational change. We will spend some time talking about the importance of rigorous scientific evaluation of eHealth projects, covering research and the potential for big data projects to guide new knowledge and to ensure clinical efficacy. Other topics include use of standards and vocabularies; privacy and security; and the future of eHealth.

The course is designed to give an overview of eHealth from the health care perspective. It is also designed to provide students with opportunities to enhance skills important for their future work in eHealth. There is a focus on teamwork and written communication in a variety of formats.

The course is organized to enable learning to occur in a number of ways. Weekly readings and activities are completed before class to ensure that students are ready to actively participate in the sessions. Large group lectures are included to help you synthesize key areas and introduce you to experts in the field. In the small group tutorials, you will broaden your understanding of the content through discussions with your student colleagues and gain insights from an interdisciplinary group with diverse experiences and backgrounds.

Course Objectives

At the end of the course, you should be able to:

- Describe the Canadian health care system—how it is structured and funded
- Identify information flow and needs across healthcare levels;
- Define eHealth and appreciate the breadth of the field;

- Identify the main applications of eHealth in health care, understand their role and potential impact, challenges in the field, and critically appraise possible limitations of eHealth solutions;
- Recognize the effect of the culture of health care on planning, implementation, and use of information technologies;
- Identify areas in healthcare that could benefit from an eHealth-supported solution;
- Consider privacy, security, and confidentiality issues from the health care provider and patient perspective in relation to eHealth applications and research, and be aware of the role of policy and legislation in this area;
- Appreciate the complexity of healthcare and the role that eHealth can play in providing care for patients and the population.

Other learning outcomes:

- Write a good research question
- Select and summarize research from peer-reviewed journals
- Critically reflect on your own learning and how you're incorporating your new understanding of eHealth into your approach to learning and applying this knowledge going forward
- Synthesize knowledge in an area in a written report and communicate this knowledge
- Develop good writing and referencing
- Enhance your teamwork skills
- Communicate your ideas in a number of formats (written, spoken, multimedia)

Format

- The course uses large group lecture-style sessions followed by small group tutorials. Each tutorial session will focus on a learning package that includes the unit objectives, required and additional readings, and discussion points.
- ***Participants are expected to have read the readings and completed any weekly activities for the tutorial discussions before the session***.
- The anticipated number of hours that a student should allocate depends on a number of factors, including: the student's background, experience, the session, and the readings. Students typically spend 3 hours in class and another 6-10 hours reading the material, and completing the activities for each session.

Scheduling

Class Sessions will be held from:
September 11 to December 11, 2018
4 to 7 pm
Large group sessions typically run from 4-5:30 pm.
Tutorial Groups will be in smaller rooms; they will run from 5:30-7 pm.

Avenue to Learn

Course content, news updates, and assignment submission will be through Avenue to Learn (Avenue) https://avenue.cllmcmaster.ca/d2l/home. Please check it regularly for news. The Avenue calendar will contain class dates and room locations, as well as deadlines. We will not be in the same lecture hall all term, so be aware of any changes via the calendar.

Textbooks (mandatory readings described in each unit outline)

The topics discussed in the following books will be covered in lectures. Other sources will also be consulted and details will be provided in the guides provided for each session.

1. Shortliffe, Edward H and Cimino James J. Biomedical Informatics, Computer Applications in Health Care and Biomedicine, Springer-Verlag London 2014. (*selected chapters*). The book is available online via McMaster digital library. For off-campus access, you will need to login through proxy with macid.

2. Lavis, JN (ed). Ontario's Health System: Key Insights for Engaged Citizens, Professionals and Policymakers. 2016. PDFs of Chapters are available at https://www.mcmasterforum.org/find-evidence/ontarios-health-system
   A paperback version is available for purchase at Amazon.ca.

Suggested reading (optional)

Hoyt RE, Yoshihashi A, Bailey N. Health informatics: Practical guide for healthcare and information technology professionals. Lulu Press. 2014 Seventh edition. http://www.lulu.com/shop/william-r-hersh-and-robert-e-hoyt/health-informatics-practical-guide-seventh-edition/paperback/product-23655642.html. An electronic version of the book can be purchased or rented at RedShelf.com.

Gaddi A, Capello F, Manca M. eHealth, Care and Quality of Life. 2014 electronic library holding in the Health Science Library

Casson, Leslie, E. A Writer's Handbook – Third Edition Developing Writing Skills for University Students. Broadview Press 2011. Available digitally https://broadviewpress.com/product/a-writers-handbook-fourth-edition/?ph=052216213796b53102946d02 or through Amazon. This will help you with writing assignments.

Some health research journals relevant to eHealth

(you can get access through http://hsl.mcmaster.ca/)
http://medinform.jmir.org/
https://www.journals.elsevier.com/international-journal-of-medical-informatics
http://www.healthaffairs.org/
http://journals.lww.com/cinjournal/pages/default.aspx
http://www.biomedcentral.com/bmcmedinformdecismak/
https://implementationscience.biomedcentral.com/

Topics: the order of these may change based on availability of invited guest lecturers. Details will be on Avenue to Learn as the order is confirmed.

Introduction to the Canadian healthcare system
Course overview and introduction to eHealth and the flow of health information; Canadian eHealth landscape
Evidence-based medicine and why it matters to eHealth
Primary care: Health care data and Electronic Health Records (EHR) systems
Vocabularies, terminologies, and standards
Implementation, adoption, use, system maturation (primary care)
Consumers and patient information systems and needs, Mobile devices, Personal health records

Connected care
Pharmacy eHealth and medication management (hospital-based care)
Public health informatics
Big data
Ethics, security, privacy, and confidentiality
Future of eHealth
Video watching closing session

STUDENT EVALUATION AND ASSIGNMENTS

Overview of Assignments, Grading, and Due Dates

Written assignments are used to evaluate knowledge, critical appraisal skills, critical thinking, analysis, and synthesis skills. They test the understanding of principles or relationships, foster independent thinking and learning, and develop writing skills. Written assignments are assessed on content, organization, style, and mechanics.

A successful eHealth professional needs to work with many stakeholders, not all of whom have the same perspectives. Communication of complex ideas in simple, concise language is key, especially to stakeholders who may not understand the complexities of eHealth and implementation. Assignments for this course are designed to help you develop and hone these skills.

Assignment	Grade allocation	Due date
Formulating a question exercise	3%	Sep 28 (electronic submission by 11:59 pm on AVENUE on the due date).
Article summary	10%	Oct 12 (electronic submission by 11:59 pm on AVENUE on the due date).
Individual reflection paper	20%	Nov 2 (electronic submission by 11:59 pm on AVENUE on the due date)
Final project: (groups of 3 or 4)		
Proposal, 2-4 pages	5%	Nov 16(electronic submission by 11:59 pm on AVENUE on the due date).
Final report	35%	Dec 10 (electronic submission by 11:59 pm on AVENUE on the due date)
Final presentation video	10%	Dec 10 (electronic submission by 11:59 pm on AVENUE on the due date)
Video reviews	2%	Dec 11 (during video viewing session)
Tutorial participation	13%	1% per session (attendance/participation)
Team report	2%	Dec 10 (electronic submission by 11:59 pm on AVENUE on the due date)

Assignment details and rubrics used for grading will be posted on Avenue.

COURSE POLICIES follow University policies

Syllabus is subject to change. The instructor and university reserve the right to modify elements of the course during the term. The university may change the dates and deadlines for any or all courses in extreme circumstances. Updated versions will be posted on Avenue to Learn website for the course. Students are responsible for finding out about announced changes if they miss class. If either type of

modification becomes necessary, reasonable notice and communication with the students will be given with explanation and the opportunity to comment on changes. It is the responsibility of the student to check course websites weekly during the term and to note any changes.

Late assignments. Electronic copies of assignments are due as indicated above and in the Avenue calendar. They are to be submitted via Avenue to Learn. Late assignments received within 24 hours of the due date will be docked 5% of the assigned grade. Assignments received between 24 and 48 hours late will be docked 10%. Assignments will not be accepted after 48h. If you anticipate having problems meeting these deadlines, please contact me before the assignment is due to discuss your situation.

Special needs. Please see the University policy in the Graduate Student Handbook: http://goo.gl/6sdo54.

Academic Integrity. Academic dishonesty is to knowingly act or fail to act in a way that results or could result in unearned academic credit or advantage. It is your responsibility to understand what constitutes academic dishonesty. However, if you have questions regarding a particular assignment, it is always best to ask me prior to completing the assignment

See section 6.1 of the Graduate Student Handbook for University policies: http://goo.gl/6sdo54.

The McMaster University Office of Academic Integrity has resources for students and faculty. Violations (e.g., plagiarism, handing in work done by others, or cheating) will not be tolerated. Please familiarize yourself with requirements and resources for a violation-free time at McMaster.
http://mcmaster.ca/academicintegrity/index.html
The following illustrates only three forms of academic dishonesty:
1. Plagiarism, e.g. the submission of work that is not one's own or for which other credit has been obtained.
2. Improper collaboration in group work.
3. Copying or using unauthorized aids in tests and examinations.
https://www.mcmaster.ca/policy/Students-AcademicStudies/AcademicIntegrity.pdf

In this course we will be using a web-based service (Turnitin.com) to reveal plagiarism. Students will be expected to submit their work electronically to Avenue to Learn which is enabled with Turnitin.com so that it can be checked for academic dishonesty. Students who do not wish to submit their work to Turnitin.com must still submit a copy to the instructor. No penalty will be assigned to a student who does not submit work to Turnitin.com. All submitted work is subject to normal verification that standards of academic integrity have been upheld (e.g., on-line search, etc.). To see the Turnitin.com Policy, please go to www.mcmaster.ca/academicintegrity.

On-line element:
In this course we will be using Avenue to Learn. Students should be aware that, when they access the electronic components of this course, private information such as first and last names, user names for the McMaster e-mail accounts, and program affiliation may become apparent to all other students in the same course. The available information is dependent on the technology used. Continuation in this course will be deemed consent to this disclosure. If you have any questions or concerns about such disclosure please discuss this with the course instructor.

Attendance
You are expected to be present at all sessions—both the large group presentation at the start of each session and your tutorial group that happens during the final 90 minutes. Please let your tutorial group and

me (lokkerc@mcmaster.ca) know of any planned absences. Consistent late arrivals may be factored into your class participation marks.

Citation format
Correct and **consistent** citing is a mark of quality and attention to detail. For this course you are required to follow APA format. Please use these guides! I am looking for consistency and adherence to the rules.
https://library.mcmaster.ca/guides/apa-style-guide and
https://owl.english.purdue.edu/owl/resource/560/01/

McMaster Grad writing consultants
https://gs.mcmaster.ca/grad-writing-consultations-gwc

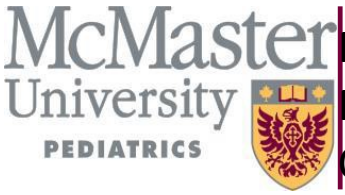
Tips for editing
Use Casson, Leslie, E. A Writer's Handbook – Third Edition Developing Writing Skills for University Students. Broadview Press 2011 for guidance on writing.

10 Perfect Pieces of Advice on How to Edit Your Writing https://www.grammarly.com/blog/advice-on-editing/

optional on-line courses
https://www.mygradskills.ca/courses/understanding-and-avoiding-plagiarism

Additional resources:
https://www.mygradskills.ca/
https://owl.english.purdue.edu/

Appendix C- Sample Course Outline (residency)



MSc Child Life & Pediatric Psychosocial Care Program

CLPPC 710 Child Life Residency 2

Course Instructors:

Cathy Humphreys, MSc, CCLS
humphrc@mcmaster.ca

Allison Sohanlal, MSc, CCLS
sohan@mcmaster.ca

Course Dates:

August 13, 2018 – August 16, 2018

Course Description:

This is a required course for Stream 1 learners, and is offered in an intensive on-campus format during a four-day residency period in the Summer term. This course provides students with experiential learning opportunities to build on knowledge obtained in first year course work, and apply skills in planning and implementing developmentally appropriate child life interventions prior to clinical internships. Simulation-based learning, case studies, and small group discussions will be used throughout. Required health and safety training for clinical placements will also be incorporated.

Methods:

This course consists of four required face-to-face days on campus for an intensive period of workshops, clinical skills stations, as well as interactive large group and small group discussions. Students will be introduced to various child life clinical skills, have the opportunity to practice these within small groups, and demonstrate integration of learning and clinical reasoning through case discussions, and clinical station scenario testing.

Evaluation Criteria:

The course will be evaluated as a pass/fail. The evaluation methods include;

- daily participant discussion and engagement
- the successful completion of all health and safety online modules (including mask fit testing)
- clinical skills station baseline testing
- journal reflection assignment

<u>Course Schedule</u>:

****Please refer to the content section of the Avenue to Learn course shell for the required, supplementary/recommended readings and resources.**** *Supplementary readings are also available to support further learning in the Content section (only required readings are listed here)*

This course will be closed on Avenue to Learn one month after the term concludes and all grades for the course have been submitted to the record's office.

Time & Location	Topic	Notes/Additional Information
Mon.Aug.13/18 Morning **Room MDCL 3022**	**9 am** Welcome **9:30-10:30 am** Medical terminology, anatomy, body processes **10:45 am - noon** Clinical Discussion/Videos and documentation	**Readings** *1.* Canfield-Willis, M. (1996). Medical Terminology: The language of health care. Baltimore, MD: Lippincott Williams & Wilkins *(selected chapters)* *This session will involve activities based on content reviewed (medical terminology, anatomy, body processes) prior to class. Students will also apply their knowledge by demonstrating how they would explain body processes to children and youth in various age groups.* *This session will include a review of documentation and opportunities to practice how to relay our child*
Mon.Aug.13/18 Afternoon **Room MDCL 3022**	**1 - 3 pm** Preparation Skills Practice **3pm - 4pm** Tour of McMaster Children's Hospital	**Readings** 1. Koller, D. (2007). Preparing children and adolescents for medical procedures. Child Life Council Evidence-Based Practice Statement. 2. Riggs, A. (2006). Child life medical play preparation guidelines: Inpatient and outpatient procedures. Windsor Regional Hospital Pediatrics. 3. Youtube link: IV Prep Steps/Review *Students rotate through 2 breakout groups to first observe facilitators do a demo prep, and then students will practice preps in pairs using role play and preparation materials.* Station 1 – IV/bloodwork Station 2 - Pre-op/surgery/diagnostic imaging station *Tour of Children's Hospital and introduction to child life department/roles*

Tues. Aug.14/18 Morning **Room MDCL 3024**	**9-10:45am** Clinical Skills practice	*Students rotate through 2 stations: Station 1 – Comfort holds* **Readings** 1. Children's Hospital of Eastern Ontario (CHEO) Positions for Comfort Reference Sheet (on Avenue course shell) 2. Children's Mercy Kansas City Comfort Positions 3. Comfort Positioning at Children's Mercy (Youtube video) 4. The Royal Children's Hospital Melbourne Comfort Kids 5. Dell Children's Medical Centre: Comfort Positioning for Medical Procedures 6. Bray, L., Ford, K., Dickinson, A., Water, T., Snodin, J. & Carter, B. (2018). A qualitative study of health professionals' views on the holding of children for clinical procedures: Constructing a balanced approach. *Journal of Child Health Care* 7. Bray, L., Carter, B., Ford, K., Dickinson, A., Water, T., Blake, L. (2018). Holding children for procedures: An international survey of health professionals. *Journal of Child Health Care*, 22(2), p. 205-215. *Station 2 – Medical compliance* **Readings** 1. Crohn's & Colitis Foundation Pill Swallowing Techniques for Kids and Teens 2. Kaplan, BJ., Steiger, RA., Pope, J., Marsh, A., Sharp, M. & Crawford, SG. (2010). Successful treatment of pill-swallowing difficulties with head posture practice. *Paediatric Child Health*, 15(5): e1-e5. 3. Alberta Children's Hospital Research Institute: Better than a spoonful of sugar – how to swallow pills *Discussion and role play opportunities surrounding difficult conversations with parents as well as how to respond to a variety of questions (considering scope of*
Tues. Aug.14/18 Afternoon	**1-3pm** Mask fit testing **Room HSC 3H36**	*For mask fit testing, please review information sheets and print/complete the form "MedicalForm.pdf" located in Content under "N95 Respirator Education". You have been pre-assigned to attend the mask fit testing in small groups – when not in mask fit testing, please work on your modules in room MDCL 3024*

	E-modules: A2L course: Learner Health & Safety **Room** **MDCL 3024** **3-4pm** Group discussion -Special topics	**Please bring a laptop or tablet to complete the e-modules in class.** * Health and safety orientation * Fire safety education * Emergency code education * WHMIS * AODA training * N95 respirator (they will have mask fitting completed and will know their size for their fall placement) * Slips, trips and falls education * Ergonomics education * Violence in the workplace education * PHO – Chain of transmission * PHO – Health Care Provider Controls training *Required information and e-modules are available in Avenue to Learn course shell titled "Learner Health & Safety – BHSc"* *-reflections from past 2 days* *-questions/clarification/feedback* *-review of clinical skills stations (taking place Wednesday afternoon)*

Wed. Aug. 15/18 Morning **Room MDCL 3017**	**9-10:30am** Pain Management Workshop	*Students rotate through 2 breakout groups: Session 1 – Acute pain workshop* *-readings to be completed ahead of time to inform discussion and activities discussing acute pain management techniques tied to developmental levels (birth – 18yrs) and what type of diagnoses/procedures in hospital may involve acute pain* **Readings** 1. It Doesn't Have to Hurt Campaign 2. Children's Minnesota Pain Program 3. Children's Minnesota Children's Comfort Promise 4. Koller, D. & Goldman, RD. (2012). Distraction techniques for children undergoing procedures: A critical review of pediatric research. *Journal of Pediatric Nursing*, 27, pp. 652-681. 5. McMurtry, CM., McGrath, PJ. & Chambers, C. (2006). Reassurance can hurt: Parental behavior and painful medical procedures. *Journal of Pediatrics,* 48, pp. 560-561. *Session 2 – Chronic pain workshop*

	10:45am - noon Mindfulness/Self Care Workshop	**Readings** 1. What is Chronic Pain? 2. Lucile Packard Children's Hospital/Stanford Children's Health – Learning how to manage pain during medical procedures 3. Noel, M., McMurtry, M., Chambers, CT. & McGrath, PJ. (2009). Children's memory for painful procedures: The relationship of pain, intensity, anxiety, and adult behaviors to subsequent recall. *Journal of Pediatric Psychology*, 35(6), pp. 626-636. *Students will discuss mindfulness strategies and rehearse several guided meditation scripts in pairs, providing feedback to their partner. Students will also take two self-care inventories during class followed by a discussion of self-care strategies and the importance of self-care during the clinical education year and in clinical practice.* **Readings** 1. Marlowe, S. (2017). Supporting young children visited by big emotions: Mindfulness, emotion regulation and neurobiology. In Beaudoin, MN. & Duvall, J. (Eds.) **(Chapter 4 pp. 50-61)**. Routledge: Taylor & Francis Group 2. Van Dernoot Lipsky, L. (2009). Trauma stewardship: An everyday guide to caring for
Wed. Aug. 15/18 Afternoon **Meet in room MDCL 3024**	1-3pm Clinical Skills stations 3:15-4pm Feedback discussion	*Students will rotate through 10 clinical skills stations. Stations will apply course material from this residency, challenging students to respond to scenarios in a simulated environment.*
Wed. Aug. 15/18 Evening	4:30-6:30pm Social event	Dinner for all Stream 1 and Stream 2 learners and faculty at the Skylight Room (on campus)
Thurs. Aug. 16/18 Morning **Arrive in room MDCL 3022**	9-noon Breakout groups - Stream 2 independent master's project facilitations	*MDCL 3022, 3023 and 3024 will be utilized for 3 small groups to engage in interactive panel style Q&A sessions with Stream 2 students* *Prior to this session, please review all of the 3 minute videos completed by Stream 2 students about their independent master's project. These are available for viewing in Avenue to Learn. Prepare your questions for each Stream 2 student.*

Thurs. Aug. 16/18 Afternoon **Room MDCL 3023**	12:30-1 pm Lunch provided. Q & A with past interns 1:30-4 pm Preparing for internship.	*Meet with 3 past interns. Be prepared with questions you may have about the year 2 clinical education component of the program.* *-Reflection on learning needs for professional & clinical growth in internship* *-Preparing for internship* *-Professionalism* *-Preceptor/Intern Relationship* *-Review of Clinical Education/Internship Handbook, policies & procedures*

Discussion/Engagement Rubric:

Assessment for daily participant discussion and engagement.

3 marks	**2 marks**	**1 mark**	**0 marks**
Participates actively throughout sessions. Demonstrates very good understanding of the topic and assigned readings. Demonstrates familiarity with the topic and/or ability to engage constructively with others' points of view and perspectives shared. Promotes new learning by contributing new information, demonstrates	Participates actively. Demonstrates familiarity with the topic and/or ability to engage constructively with others' points of view. Participates actively throughout sessions. Promotes learning by contributing new information, demonstrates integration of content and/or providing content analysis.	Student contributes somewhat to the discussion, but demonstrates little familiarity with topic readings, restates previous dialogue; adds no new information or analysis. No evidence of integration of others perspectives.	Little or no evidence that student has completed class readings; no contribution to class discussion.

Academic Integrity Policy

You are expected to exhibit honesty and use ethical behaviour in all aspects of the learning process. Academic credentials you earn are rooted in principles of honesty and academic integrity. Academic dishonesty is to knowingly act or fail to act in a way that results or could result in unearned academic credit or advantage. This behaviour can result in serious consequences, e.g. the grade of zero on an assignment, loss of credit with a notation on the transcript (notation reads: "Grade of F assigned for academic dishonesty"), and/or suspension or expulsion from the university. It is your responsibility to understand what constitutes academic dishonesty.

The following illustrates only three forms of academic dishonesty: 1. Plagiarism, e.g. the submission of work that is not one's own or for which other credit has been obtained. 2. Improper collaboration in group work. 3. Copying or using unauthorized aids in tests and examinations.

Academic Accommodation of Students with Disabilities

Students who require academic accommodation must contact Student Accessibility Services (SAS) to make arrangements with a Program Coordinator. Academic accommodations must be arranged for each term of study. Student Accessibility Services can be contacted by phone 905- 525-9140 ext. 28652 or e-mail sas@mcmaster.ca. For further information, consult McMaster University's Policy for Academic.

Use of Avenue to Learn

In this course we will be using Avenue to Learn. Students should be aware that, when they access the electronic components of this course, private information such as first and last names, user names for the McMaster e-mail accounts, and program affiliation may become apparent to all other students in the same course. The available information is dependent on the technology used. Continuation in this course will be deemed consent to this disclosure. If you have any questions or concerns about such disclosure please discuss this with the course instructor.

As a student enrolled in this course you have been granted permission to access an online learning management system, Avenue to Learn. Avenue to Learn course pages are considered an extension of the classroom and usage is provided as a privilege subject to the same code of conduct expected in a lecture hall (see relevant section of the Code of Student Rights and Responsibilities below). This privilege allows participation in course discussion forums and access to supplementary course materials. Please be advised that all areas of Avenue to Learn, including discussion forums, are owned and operated by McMaster University. Any content or communications deemed inappropriate by the course instructor (or designated individual) may be removed at his/her discretion. Per the University Technology Services Code of Conduct, all members of the McMaster community are obligated to use computing resources in ways that are responsible, ethical and professional. Avenue to Learn Terms of Use are available at http://avenue.mcmaster.ca.

Code of Student Rights and Responsibilities

As per section 22 of the Code, all students have the following responsibilities:

22. All students are responsible for:

a) acting in accordance with the law and this Code;

b) being acquainted with the relevant related policies as they apply to all students as well as to their specific role(s) within the University;

c) supporting an environment free from harassment, intimidation, discrimination, assault, and Sexual Violence;

d) treating others in a way that does not harm them physically and/or threaten or intimidate them emotionally or mentally;

e) appropriately respecting the personal privacy of other students;
f) consuming legal substances in a safe and responsible manner; and
g) complying with any disciplinary measures assigned under this Code, and respecting the authority of University officials in the course of their duties.

McMaster University

Appendix D- Course Outline Template

[COURSE CODE] : [COURSE NAME]
Course Outline – [Term] [Year]

Instructor(s):
Office Hours and Location (if applicable):
E-mail Address:
Office Hours/Online Availability:

Course Dates:
Class Location and Time (if applicable):
Course Website (if applicable): avenue.mcmaster.ca

Teaching Assistant (if applicable):
E-mail Address (if applicable):

Course Description & Prerequisites:

Course Objectives and Learning Outcomes:

Required Texts/Course Materials (if applicable):

Methods of Evaluation:

Assignment	Due Date	Weight

Overview of Assignments and Grading:

Course Format:

Procedures and Rules:

Late or Missed Assignments/Tests

Re-Grade Policy

Assignment Submissions

Citation Format (if applicable)

Group Work (if applicable)

Attendance Policy (if applicable)

E-mail Communication with Instructor and/or TA

Use of Avenue to Learn (if applicable)

In this course we will be using Avenue to Learn. Students should be aware that, when they access the electronic components of this course, private information such as first and last names, user names for the McMaster e-mail accounts, and program affiliation may become apparent to all other students in the same course. The available information is dependent on the technology used. Continuation in this course will be deemed consent to this disclosure. If you have any questions or concerns about such disclosure, please discuss this with the course instructor. As a student enrolled in this course you have been granted permission to access an online learning management system, Avenue to Learn. Avenue to Learn course pages are considered an extension of the classroom and usage is provided as a privilege subject to the same code of conduct expected in a lecture hall. This privilege allows participation in course discussion forums and access to supplementary course materials. Please be advised that all areas of Avenue to Learn, including discussion forums, are owned and operated by McMaster University. Any content or communications deemed inappropriate by the course instructor (or designated individual) may be removed at his/her discretion. Per the University Technology Services Code of Conduct, all members of the McMaster community are obligated to use computing resources in ways that are responsible, ethical and professional. Avenue to Learn Terms of Use are available at http://avenue.mcmaster.ca.

Use of Turnitin.com (if applicable)

Students will be expected to submit their work electronically to Turnitin.com so that it can be checked for academic dishonesty. Students who do not wish to submit their work to Turnitin.com must still submit a copy to the instructor. No penalty will be assigned to a student who does not submit work to Turnitin.com. All submitted work is subject to normal verification that standards of academic integrity have been upheld (e.g., on-line search, etc.). To see the Turnitin.com Policy, please go to www.mcmaster.ca/academicintegrity.

Academic Integrity

You are expected to exhibit honesty and use ethical behaviour in all aspects of the learning process. Academic credentials you earn are rooted in principles of honesty and academic integrity. Academic dishonesty is to knowingly act or fail to act in a way that results or could result in unearned academic credit or advantage. This behaviour can result in serious consequences, e.g. the grade of zero on an assignment, loss of credit with a notation on the transcript (notation reads: "Grade of F assigned for academic dishonesty"), and/or suspension or expulsion from the university. It is your responsibility to understand what constitutes academic dishonesty. For information on the various types of academic dishonesty please refer to the Academic Integrity Policy, located at http://www.mcmaster.ca/academicintegrity. The following illustrates only three forms of academic dishonesty: 1. Plagiarism, e.g. the submission of work that is not one's own or for which other credit has been obtained; 2. Improper collaboration in group work; 3. Copying or using unauthorized aids in tests and examinations.

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Code of Student Rights and Responsibilities

As per section 22 of the Code, all students have the following responsibilities:

a) acting in accordance with the law and this Code;

b) being acquainted with the relevant related policies as they apply to all students as well as to their specific role(s) within the University;

c) supporting an environment free from harassment, intimidation, discrimination, assault, and Sexual Violence;

d) treating others in a way that does not harm them physically and/or threaten or intimidate them emotionally or mentally;

e) appropriately respecting the personal privacy of other students;

f) consuming legal substances in a safe and responsible manner; and

g) complying with any disciplinary measures assigned under this Code, and respecting the authority of University officials in the course of their duties.

For further information, please consult McMaster University's Code of Student Rights and Responsibilities: http://studentconduct.mcmaster.ca/student_code_of_conduct.html.

Course Schedule:

Date	Topic/Readings

Note that the instructor and university reserve the right to modify elements of the course (with the exception of the grading and grading breakdown) during the term. The university may change the dates and deadlines for any or all courses in extreme circumstances. Students are responsible for finding out about announced changes if they miss class. If either type of modification becomes necessary, reasonable notice and communication with the students will be given with explanation and the opportunity to comment on changes. It is the responsibility of the student to remain informed of any changes.

Appendix E- Sample Participation Rubric (in-class delivery)

Outstanding	Contributions in class reflect exceptional preparation. Ideas offered are always substantive, provide one or more major insights as well as direction for the class. Challenges are well substantiated and persuasively presented. If this person were not a member of the class, the quality of discussion would be diminished markedly.	10
Excellent	Contributions in class reflect thorough preparation. Ideas offered are usually substantive, provide good insights and sometimes direction for the class. Challenges are well substantiated and often persuasive. If this person were not a member of the class, the quality of discussion would be diminished.	8-9
Minimal participation	Contributions in class reflect satisfactory preparation. Ideas offered are sometimes substantive, provide generally useful insights but seldom offer a new direction for the discussion. Challenges are sometimes presented, fairly well substantiated, and are sometimes persuasive. If this person were not a member of the class, the quality of discussion would be diminished somewhat.	6-7
Non-Participant or unsatisfactory	This person says little or nothing in class. Hence, there is not an adequate basis for evaluation. If this person were not a member of the class, the quality of discussion would not be changed. **OR** Contributions in class reflect inadequate preparation. Ideas offered are seldom substantive, provide few if any insights and never a constructive direction for the class. Integrative comments and effective challenges are absent. If this person were not a member of the class, valuable air-time would be saved.	below 5

Credit: eHealth Graduate Program

Appendix F- Sample Participation Rubric (online delivery)

3 marks	2 marks	1 mark	0 marks
Participates actively throughout the week. Demonstrates very good understanding of the topic and assigned readings. Demonstrates familiarity with the topic and/or ability to engage constructively with others' points of view and posts. Promotes new learning by contributing new information, demonstrates integration of content and/or providing content analysis. Takes risks, contributes to supportive environment and engaged conversations.	Participates actively throughout the week. Demonstrates familiarity with the topic and/or ability to engage constructively with others' points of view. Promotes learning by contributing new information, demonstrates integration of content and/or providing content analysis.	Student contributes somewhat to the online discussion (usually only just prior to deadline), but demonstrates little familiarity with topic readings, restates previous posts; adds no new information or analysis. No evidence of integration of others posts.	Little or no evidence that student has completed class readings; no contribution to class discussion.

Credit: Child Life and Pediatric Psychosocial Care Graduate Program

February 2019

TO: Graduate Council

FROM: Doug Welch
Vice-Provost and Dean of Graduate Studies
Co-Chair, Quality Assurance Committee

RE: 2017-18 IQAP Cyclical Program Reviews

INTRODUCTION

The purpose of Institutional Quality Assurance Process (IQAP) program reviews is to assist academic units in clarifying their objectives and to assess curriculum and pedagogical policies, including desirable changes for future academic development. Although the primary objective for these reviews is the improvement of our academic programs, the processes that we adopt are also designed to meet our responsibility to the government on quality assurance. The process by which institutions meet this accountability to the government is outlined in the Quality Assurance Framework (QAF), developed by the Ontario Councils of Academic Vice-Presidents (OCAV). Institutions' compliance with the QAF is monitored by the Ontario Universities Council on Quality Assurance, also known as the Quality Council, which reports to OCAV and the Council of Ontario Universities.

The goal of McMaster's IQAP is to facilitate the development and continued improvement of our undergraduate and graduate academic programs, and to ensure that McMaster continues to lead internationally in its reputation for innovation in teaching and learning and for the quality of its programs. McMaster's IQAP is intended to complement existing mechanisms for critical assessment and enhancement, including departmental reviews and accreditation reviews. The uniqueness of each program emerges through the self-study.

All program review reports (including self studies, review team recommendations, departmental responses, and dean's implementation plans) are submitted to McMaster's Quality Assurance Committee, a joint committee of Undergraduate and Graduate Councils. The Quality Assurance Committee assesses all submitted reports and prepares a Final Assessment Report (FAR) for each program review conducted during the previous academic session. Each FAR:

- Identifies significant strengths of the program;
- Addresses the appropriateness of resources for the success of the program;
- Identifies opportunities for program improvement and enhancement;
- Identifies and prioritizes the recommendations;

Undergraduate Council and/or Graduate Council will review this report to determine if it will make additional recommendations.

2017-2018 IQAP CYCLICAL PROGRAM REVIEWS

The following programs were reviewed during 2017-18:

Graduate Programs
Biology M.Sc. and Ph.D.
Chemical Engineering M.A.Sc. and Ph.D
Globalization M.A.
Master of Health Management
Mathematics M.Sc. and Ph.D.
Statistics M.Sc.
Psychology M.Sc. and Ph.D.

FINAL ASSESSMENT REPORT

Institutional Quality Assurance Program (IQAP) Review

Biology Graduate Programs

Date of Review: March 1 and 2, 2018

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

The report includes an Implementation Plan that identifies who will be responsible for approving the recommendations set out in the Final Assessment Report; who will be responsible for providing any resources entailed by those recommendations; any changes in organization, policy or governance that will be necessary to meet the recommendations and who will be responsible for acting on those recommendations; and timelines for acting on and monitoring the implementation of those recommendations.

Executive Summary of the Review

In accordance with the Institutional Quality Assurance Process (IQAP), the Biology program submitted a self-study in January 2018 to the Vice-Provost and Dean of Graduate Studies to initiate the cyclical program review of its graduate programs. The approved self-study presented program descriptions, learning outcomes, and analyses of data provided by the Office of Institutional Research and Analysis. Appendices to the self-study contained all course outlines associated with the program and the CVs for each full-time member in the department.

Two arm's length external reviewers and one internal reviewer were endorsed by the Dean, Faculty of Science, and selected by the Vice-Provost and Dean of Graduate Studies. The review team reviewed the self-study documentation and then conducted a site visit to McMaster University on March 1st and 2nd, 2018. The visit included interviews with the Provost and Vice-President (Academic); Vice-Provost and Dean of Graduate Studies, Associate Dean, Grad Studies and Research, Chair of the department and meetings with groups of current students, faculty and support staff.

The Chair of the department and the Dean of the Faculty of Science submitted responses to the Reviewers' Report (April 2018 and June 2018 respectively). Specific recommendations were discussed and clarifications and corrections were presented. Follow-up actions and timelines were included.

Strengths

- Quality of faculty: Faculty are productive, research-active, dedicated and supportive of graduate student research.
- Quality of students: Graduate students are energetic, demonstrating remarkable initiative regarding community engagement and opportunities for internships. Students are productive with impressive publication and time-to-completion rates.
- Commitment to community engagement: We understand that student and faculty engagement with the community outside the university is very strong. Notably, there is a high level of positive and creative interaction of Biology faculty and graduate students with local schools.
- Dedicated staff: Administrative and academic staff are dedicated to the success of the Department and appear to go over and above their responsibilities to ensure the health of the graduate program.

Areas for Enhancement or Improvement

- Resources (infrastructure, faculty and staff): The need for upgrades and renovation to the physical infrastructure supporting this program was a dominant concern for our review. The current building deleteriously affects research productivity and animal care. Infrastructure renewal should incorporate effective communal space to improve community and cohesiveness. Strategic Faculty and Staff renewal should also be a major goal of the Department.
- Strategic plan: Graduate Program enhancement would be greatly facilitated with a strategic plan setting out clear vision and goals. Such a plan could invigorate and integrate the program and improve the structure of graduate curriculum.
- Communication: In our meetings with all stakeholders, we became aware that the flow of information from Deans to Chair to faculty to students was problematic. There appears to be structural communication gaps both within the Department and between the Department and the Administration. These gaps likely negatively affect faculty engagement at a Departmental level impacting cohesiveness in the Program. Students indicated communication issues regarding graduate course offerings and Teaching Assistant Assignments. It will be important to bridge these different communication gaps to pull the Department together and to move forward with strategic and forward-thinking goals.
- Cohesiveness: A consistent theme during our site visit was a perceived lack of cohesiveness in the Graduate Program and among research groups. We observed that faculty engagement in graduate program initiatives was inconsistent and graduate students commented on a general lack of integration and cross-talk amongst research groups. We are confident that with thoughtful strategic planning, improved communication and resource renewal, the program will be invigorated with a better sense of community.

Summary of the Reviewers' Recommendations with the Department's and Dean's Responses

Recommendation	Proposed Follow-Up	Responsibility for Leading Follow-Up	Timeline for Addressing Recommendation

1. Consider whether direct entry from BSc should be more readily used for exceptional students, including those with outstanding GPAs and undergraduate research experience	a) We will modify our 'Guide to Graduate Studies' and highlight the direct entry option to prospective students. a) This will be communicated directly to <u>outstanding</u> applicants and their proposed supervisors. We note that have taken this route in the past to recruit and retain excellent students. For example, we have just provided this option to an exceptional applicant for the September 2018 entry.	a) The revision of the Guide is the responsibility of the Biology Graduate Studies Committee (BGSC) and the Administrative Assistant b) The Chair of the BGSC will consult with the proposed supervisor(s) and will inform and advise the applicants on this option.	a) Revision of the Guide will be discussed at the next BGSC meeting. Changes to practices and policies in the graduate program will be submitted for discussion with the faculty in the near future. b) This will be implemented by the BGSC Chair as soon as the new practice has been presented and discussed with the BGSC and Biology faculty.
2. The Department may wish to reconsider its approach to international applicants who already hold Masters-level degrees and critically evaluate whether they first need to enroll in the MSc program.	We note that we have directly admitted international MSc graduates into our PhD program before on a case-by-case basis. The BGSC will further examine various options and identify applicants holding a MSc degree who may fulfill the criteria for enrollment to the PhD program. Prior training in a research-intensive MSc program will be considered as a pre-requisite.	Since the BGSC act as the Admission Committee in Biology, it will lead the discussion, determine the guidelines/criteria and oversee the admission to the PhD program of candidates already holding an international MSc degree.	This will be discussed in the near future by the BGSC.
3. The Department engage in curricular planning and mapping for graduate courses.	Curricular planning of graduate courses is already a feature of our "*Core Graduate*	Members of the BGSC will lead the review for their respective area of specialization and	The review process will be initiated in May/early June and

This will include establishing clear and forward-thinking goals and learning outcomes. Courses should be decided upon and advertised on a 2-year cycle, allowing students and faculty instructors to properly plan.	*Courses*". In particular, it involves meetings of faculty belonging to the same area of specialization, determination of the content of the core courses for each area and approval of an adequate schedule. As new courses have also been introduced, we will return to a more rigorous planning of our graduate courses and re-visit the content of our core graduate courses, the faculty designated to teach these courses and their schedule.	provide the list of core courses, instructors and schedule for the next two (or more) years.	discussed at the June departmental meeting.
We recommend that a Scientific Communication course (e.g. Biology 712) be offered every year and be mandatory for all incoming graduate students (MSc and PhD). Our suggestion is that this course be in addition to the 2 courses already required for the MSc and would be an additional requirement for the Ph.D.	Some colleagues are concerned by the impact of increasing the course load on completion time. We recognize the value of this course and the interest expressed by a large fraction of our graduate student population. The BGSC will discuss the recommendation and look at alternative models to implement it and perhaps integrate attendance at departmental seminars (see recommendation 5) in the content of this course. This will be done in consultation with the course instructor, Dr. Jacobs.	This discussion and implementation of changes proposed in this recommendation will be done by BGSC in consultation with the course instructor, Dr. Jacobs.	The discussion will begin in May/June but may extend to the summer months as this is a significant modification of our graduate course curriculum and the membership of the BGSC will be updated in July 2018.

5. As either a component of a capstone graduate course or on their own, weekly Departmental seminars be attended by all graduate students. *We suggest that research group focused seminars be held on rotation and held no more than 1x/week (e.g. PHYSIOL, EEB, MCB)*	As discussed above (recommendation 4), the BGSC will discuss recommendation 5 and look at alternative models to implement it. In particular, we'll look at integrating the attendance at departmental seminars in the content of Biology 712. Better scheduling and the coordination of research group focused seminars in the Department is a good idea that will be discussed in the near future.	The proposal to integrate the departmental seminar series in a course such as Biology 712 will be discussed by members of the BGSC and Dr. Jacobs. The schedule and coordination of departmental and research group focused seminars will be discussed by the Seminar Committee in Biology, in consultation with the different groups.	As the composition of the BGSC will be updated in July 2018 and several faculty members are about to go in the field, the discussion will be initiated in May or June but will likely continue in the summer and fall 2018.
6. Ensure MOSAIC, as an administrative tool, is meeting needs and expectations of Graduate student applicants as well as resulting in timely conversions.	The implementation of MOSAIC has caused many headaches and is taken seriously by all administrative branches at McMaster University. We will continue to work with the School of Graduate Studies (SGS) to address any problems related to MOSAIC	This is an ongoing process.	Problems arising will be addressed by the Chair of the Biology Graduate Students Committee, the Administrative Assistant for Graduate Studies in Biology and SGS.
7. The supervisory committee must be composed of the Supervisor and two other members, one of whom could be from another Graduate Unit.	The supervisory committee of PhD students is already composed of three members. We can certainly follow the same practice for MSc students. If possible, we will promote the inclusion of faculty members belonging to different units; this is consistent	Changes in the rules and practices of the graduate program are the responsibility of the BGSC.	The recommendation can be discussed at the next meeting of the BGSC and the change submitted for approval to the Biology faculty at the June departmental meeting.

	with the current practices in Biology. Our approach in this regard is to name faculty members who can contribute significantly to the guidance and evaluation of the graduate student's progress and research program. We will continue to use this guiding principle and therefore decide on a case-by-case basis.		
8. The Department should carefully evaluate the recommended timelines for both the PhD and MSc programs, with a view to having meetings and provided feedback earlier and more often in the programs. Students should be provided clear pathways and guidelines to proceed through their programs.	We agree with the comments of the Reviewers. There are several aspects to consider in this recommendation. First, we will put in place a mechanism to review the research program of new students within six months of their entry in the graduate program. This may require a presentation to the supervisory committee or, at the very least, the submission for approval of a short two page document describing the research program/directions to members of the supervisory committee. Second, we will form a working group within the BGSC to review the timelines of MSc and PhD programs and make	Changes in the rules and practices of the graduate program are the responsibility of the BGSC.	The discussion on the composition of the supervisory committee will take place at the next meeting of the BGSC and changes ill be communicated to the Biology faculty at the June departmental meeting. The working group will be assembled in September, once the new composition of the 2018-2019 BGSC committee is determined in July 2018.

	recommendations to the BGSC and Biology faculty. In particular, the working group will be charged with reviewing the procedures of Transfer from MSc to the PhD and PhD comprehensive examination.		
9. The Department should ensure its program requirements and assessments are consistent with School of Graduate Studies policies. The Department should carefully evaluate the mechanisms it uses for assessments with respect to Section 4.2 of the Graduate Calendar, which gives wide latitude to graduate programs to develop tools that meets their needs.	We will comply with these rules/policies of the SGS and update our "Guide to Graduate Studies in Biology" accordingly. In particular, we will review and modify the potential outcomes in assessment to be consistent with the practices of SGS.	Changes in the rules and practices of the graduate programs are the responsibility of the BGSC.	The recommendation can be discussed at the next meeting of the BGSC and modifications to the "Guide to Graduate Studies" will be made in collaboration with the Administrative Assistant in the near future.
10. We recommend transparent and timely communication between the Graduate Studies Committee and graduate students regarding TA allocation and assignment.	Most in-program graduate students are generally assigned to courses where they have previously worked at teaching assistants. Therefore, the problem generally concerns new graduate students entering the program. As the number of teaching assistants is determined by undergraduate enrolments, we are dependent on the data provided by the	The BGSC Chair will discuss this with the current TA assigner on how best to communicate the TA allocation.	This will happen in June 2018.

	Registrar's office, typically in July/August. TA assignment is the responsibility of the Departmental Administrator with the help of the undergraduate secretary and faculty members. With the approval of the membership of the BGSC (see recommendation 17), the inclusion of a BGSC member in the TA allocation process will make it more transparent.		
11. The Department should work with the Faculty to ensure current plans to improve the building space and infrastructure move forward in a timely manner.	We will continue to improve building space and infrastructure by working with the Faculty of Science and the University. The Life Sciences Building is being prioritized for a deep retrofit, but funding sources for this have not yet been identified. Dean M. MacDonald visited the Department in December 2017 and discussed her strategy to obtain funds for long-term improvements to the Life Sciences Building and infrastructure requirements in Biology. In particular, the addition of a new green house is now the	Chair of Biology and Dean of Science	Dr. Jacobs' term as Biology Chair is ending on June 30, 2018. The selection committee for the new Biology Chair is currently working to identify suitable candidates for this position. One of the key challenges of the next Chair will be to define the hiring priorities for faculty renewal.

	number one priority of the Faculty of Science. We will continue to discuss this important issue with Dean MacDonald.		
13. Staff workload must be examined carefully to get a true sense of the work that needs to be done and how best to efficiently maximize staff capacity without causing detriment to both the undergraduate and graduate student experience. With the inefficiencies noted with the University's ERP system, the committee feels that one staff person to administer the graduate program is probably now sufficient.	The staffing plan across the Science Department is being harmonized through a central initiative, which recommends that one person is sufficient to administer the graduate program for each department. However, the "one-fits-all" model does not take into account the size of a graduate program (i.e. number of graduate students). The Chair of Biology will seek to revisit this model after providing an hour-by-hour map of the current administrator's activity. The Department of biology recently went through a major restructuring of our staff complement that is still in the implementation stage. Work overload of our Administrative Assistant to Graduate Studies has been noted by graduate students and faculty members. It will be one of the priorities of the new	Biology Chair and Dean of the Faculty of Science.	The discussion of this recommendation will depend on the nomination of the new Biology Chair (expected July 2018).

	Biology Chair to review the recommendation of the Reviewers. The addition of a half-time assistant may alleviate many problems identified by the Reviewers.		
14. Student stipends should be examined regularly to ensure they remain competitive with peer institutions and programs which may be competing for graduate students.	We will examine the stipend situation for students on a yearly basis by comparing ours with peer institutions. We will try to maintain a competitive guaranteed minimum funding level, taking into account our main competitors in the GTA and Southern Ontario.	The Associate Chair and graduate secretary will gather the required information and will work with the departmental administrator to review the department's funding position and provide suggestions for the BGSC and department.	We will address this issue in the early fall of 2018. i.e. in time for the review of applications for the 2018-19 academic year.
15. Increase opportunities for scientific connections to be made between students in the program.	Biology offers several discipline-based seminar series that provide opportunities for students to hone their presentation skills and seek input for their projects. Better coordination of the departmental and research group-specific seminar series (see Recommendations 4 & 5 above), will allow us to more effectively allocate additional resources for beverages and food as an incentive to enhance and promote the attendance to these seminars and provide the opportunities for students to interact	The Associate Chair will initiate a discussion with BGSS, members of BGSC, the Chair of Biology on how best to increase scientific connections among students in our program.	The BGSC will organize a meeting to specifically discuss this and other curricula matters in the second half of May 2018. Executive members and representatives of BGSS will be invited to discuss this and other related issues.

	and learn interdisciplinary skills.		
16. Work to boost faculty participation in activities that support the graduate student experience, such as volunteering to organize Graduate Research Day and other such activities.	We will put a greater emphasis on encouraging both students and faculty to attend departmental seminars and contribute to the several discipline-specific seminar series. The first four editions of the Biology Graduate Research Day (BGRD) were organized by faculty members. In 2018 the event was organized by the BGSS for the first time. Several faculty and staff members (including both the Associate Chair and the graduate secretary) contributed to the organization of this year's GRD. We will continue to encourage the BGSS to take a lead role in GRD and provide necessary financial and logistic support. We will look at mechanisms to increase faculty and student engagement. Establishing the GRD as a standing departmental duty/committee will be discussed.	GRD for at least the next year. The Graduate Chair, BGSC, and the graduate secretary will continue to work with BGSS to identify their needs with regard to GRD and other activities. The Associate Chair, members of BGSC, BGSS, and the Departmental Chair will discuss whether and how to make participating in GRD mandatory for all graduate students.	The BGSC will organize a meeting to specifically discuss this and other curricula matters in the second half of May 2018.
17. We recommend that the composition of the Biology Graduate Studies Committee be determined	The current BGSC membership is proposed by the Chair in consultation with the Associate Chair and	The Associate Chair for graduate studies will work with the T and P Committee as well as the Chair of the	This will likely happen when the new Chair is confirmed in July 2018 or soon after. The current Associate

democratically with fair and transparent voting procedures and that Terms of Reference be established for the Committee and for the position of Associate Chair, Graduate Studies.	after discussion with individual faculty members. A guiding principle in the nomination of BGSC members is a fair representation of all areas of specialization of the Department. This is necessary to ensure that appropriate expertise exists in the committee during the review of prospective student applications and in-program students performances for award nominations (again in BGSC serves as the Admission committee in Biology). Therefore we propose to continue with the current selection process but to submit the admission of new faculty members to the BGSC to vote by the Biology faculty. An email ballot may be used for this purpose. A majority of votes in favour of the candidates would confirm the nomination. The terms of references for both the Associate Chair and BGSC members will be drafted, discussed and published.	department and other relevant stakeholders to develop a clear set of procedures and the terms of references for the Associate Chair and members of the BGSC. They must be voted on by the department before adoption. The Faculty of Science is asking departments to put their regulations in writing and this approach could be incorporated at that time.	Chair's term finishes at the end of June 2018. Significantly, all areas of specialization of the Department are represented in the current membership of BGSC.
18. We suggest that the Department work to increase the visibility	The Associate Chair will increase his/her visibility to the	The Associate Chair will discuss with BGSS on how to increase the	The Associate Chair has already talked to the president of BGSS

of the Associate Chair, Graduate Education towards the student body, and especially to new incoming students. The Associate Chair should be well known to all students in the program, and every effort should be make to build a strong rapport between this individual and all students in the program.	students. In Biology, at the beginning of each academic year in September, the Associate Chair welcomes all new students and informs the new students of key issues of their graduate program. The Associate Chair also organizes Scholarship application seminars for both new and returning graduate students. In addition, all letters of offer to new students, MSc to PhD transfer notices, PhD comprehensive exams, as well as thesis defences all need to be approved by the Associate Chair. On a weekly basis, the Associate Chair also shares relevant opportunities from other sources to the entire graduate student distribution email list. One potential avenue of further exposure is to participate in social events organized by BGSS. Regular, pre-scheduled meetings with the BGSS will be discussed with the graduate students.	visibility of BGSC and the Associate Chair.	about various issues brought up during the IQAP review. A meeting will be scheduled between the Associate Chair and members of BGSS to discuss the strategy to improve his/her visibility.
19. We recommend that the Biology Graduate Studies Committee publish minutes of their meetings and present	Minutes from the BGSC will be shared with the BGSS and the Biology faculty.	The Associate Chair will ensure that updates of meetings from the BGSC and departmental meetings are passed on to the	The March 2018 updates from BGSC were sent to BGSS. Minutes from the next BGSC meetings will be

these to the Department.	The timely publication of the minutes will likely require the addition of a part-time/half-time staff member as discussed in Recommendation 13. Currently, the Associate Chair has been has been sharing information regarding graduate studies with members of the department at departmental meetings or via email. The BGSS is represented at the Departmental level.	BGSS representatives on those committees as soon as they become available or/and at pre-scheduled meetings, if necessary.	sent to BGSS as soon as they become available.
20. The Biology Department, through the Associate Chair or the Graduate Studies Committee work closely with allied academic and non-academic units to construct a clearly articulated package of services available to graduate students.	The current Associate Chair has been interacting with other associate chairs of graduate studies in the Faculty of Science through our monthly meetings. In these activities, we share our experiences and concerns to propose faculty-wide initiatives enhancing the student experiences. Tim Nolan, the Director of Student Accessibility Services (SAS), was invited to present the SAS at the April 16, 2018 departmental meetings. The Guide to Graduate Studies in Biology is also updated on a regular basis. Special attention to student	The Associate Chair and the Administrative Assistant to Graduate Studies will be responsible for follow-up, including updating and posting the information, with inputs from members of BGSC when necessary. We will continue to work with the SAS to improve student services.	From now on, all information provided by the SGS, Faculty of Science and other administrative units will be forwarded immediately to students and copied to all supervisors. Our newly revised Guide to Graduate Studies has just been submitted. SGS is proofreading the Guide for consistency. There will be periodic updates to reflect the most up-to-date information from the Biology Department, the Faculty of Science, the SAS, McMaster University and other stakeholders, including the community.

	services will be devoted in the next edition. Since January 2017, the current Associate Chair has relayed all relevant information (scholarships, writing and presentation trainings, health consultations, community events, awards opportunities etc) provided by the SGS, Faculty of Science, MacPherson, and MITACS etc to members of BGSS by email. To improve this process, we will copy the same information to all supervisors and ask them to encourage their students to consider taking advantages of these services. Once the new Chair is confirmed, we will also discuss additional secretarial help for graduate studies so as to enhance such services (Recommendation 13).		

Dean's Response

This Faculty level (Dean's response) has been prepared by the Dean of Science (Dr. Maureen MacDonald), with input from the Associate Dean of Science (Graduate) Dr. Bhagwati Gupta. On behalf of the Faculty of Science, the Dean thanked the reviewers for their careful and thorough assessment of the Graduate Programs in Biology. They were pleased with the recognition of the strengths of the programs, particularly the determination that the program learning outcomes are clear and that research environment is of high-quality. There were however several areas of concern cited and appropriate

recommendations made. It is clear that many of these concerns and recommendations can be addressed with improvements in both the policies and practices related to communication at all levels. The Faculty of Science will work to support the Department of Biology in attending to the concerns expressed and in following the implementation plan outlined in the accompanying Program response. Additional comments from the level of the Faculty of Science on significant points related to governance and resources are provided below.

The Dean agreed with the reviewers that a concerted effort must be made to improve the flow of communication within the Department of Biology and between the Department and other units on campus, including the School of Graduate Studies and the Offices of the Dean and Associate Dean (Graduate) of Science. The Program level response has highlighted some of the crucial points of contact for the flow of information, and the Faculty of Science will support the implementation and formalization of the processes identified. Several other graduate programs in the Faculty of Science have implemented systems of coordinated research seminars linked to incentives for increased attendance, strategic and balanced graduate curriculum planning, and implementation and enhanced scientific communication opportunities. The Faculty of Science will ensure that these "best practices" are shared with the Department of Biology including terms of reference for Associate Chair (Graduate) and Graduate Curriculum and Policy Committees.

It is worth noting that since the time of the site visit and submission of the reviewer's reports, activities have begun to address some of the concerns and recommendations.

The committee expressed concerns with respect to the administrative processes dependent on the existing ERP (MOSAIC). The graduate MOSAIC module has undergone extensive review led by both the School of Graduate Studies and University Technology Systems. A task force is currently working to address the shortcomings of the current systems with a deadline of Sept 2018 for improvements. Representatives from the Faculty of Science are on the review and implementation teams and considerable improvements are forecasted.

With respect to the resources available to the Graduate Programs in Biology, the Dean agreed that the state of both the Life Sciences Building and the Greenhouse are unacceptable. As indicated in the reviewers' report, the Faculty of Science has made these resource issues their number one priority in the last year. They have now secured funding for a new greenhouse addition to the Life Sciences Building, and the process of design is underway. Concerning the requested deep retrofit to address the deferred maintenance in the Life Sciences Building, they have not yet received notification on our submission for provincial funding for this project but will continue to advocate for these improvements in the upcoming year. The Office of the Dean of Science has been working on a very frequent basis with the Chair of the Biology Department over the last year to address the staffing, resource and TA concerns in the unit; however, concerns remain on both sides of the discussion. They look forward to working with the incoming leadership in the hopes that a cohesive and detailed strategic plan for the Department will be developed and presented to allow the Dean of Science to support the unit in achieving its goals moving

forward. Regarding Faculty renewal, the report of a hiring freeze in the Department for ten years is inaccurate as there have been three hires in Biology in the last seven years. Despite the Faculty of Science enduring a hiring freeze for four years, the Department of Biology was one of a small number of units that received a new appointment. The Dean will provide the incoming Department Chair and Acting Chair support and guidance on their future faculty appointments requests. However, new faculty appointments will likely be constrained in units that do not have companion retirements and a clear, well-articulated and integrated plan for renewal.

The Faculty of Science is committed to supporting the Department of Biology as it moves forward with the implementation plan associated with this IQAP review. We appreciate the opportunity for self-reflection and will work to retain the many strengths of the program while enhancing communication and implementing new processes that will lead to program enhancement.

Quality Assurance Committee Recommendation

McMaster's Quality Assurance Committee (QAC) reviewed the above documentation and the committee recommends that the program should follow a modified course of action with a progress report and a modified internal cyclical review to be conducted no later than 4 years after the start of the last review. At the time of the internal review, the committee will be looking at progress that has been made in response to the recommendations and specifically, how the recommendations have been implemented with the appointment of the new Chair.

FINAL ASSESSMENT REPORT

Institutional Quality Assurance Program (IQAP) Review

Chemical Engineering Graduate Programs

Date of Review: April 9 and 10, 2018

In accordance with the University Institutional Quality Assurance Process (IQAP), this final assessment report provides a synthesis of the external evaluation and the internal response and assessments of the graduate programs delivered by Chemical Engineering. This report identifies the significant strengths of the program, together with opportunities for program improvement and enhancement, and it sets out and prioritizes the recommendations that have been selected for implementation.

The report includes an Implementation Plan that identifies who will be responsible for approving the recommendations set out in the Final Assessment Report; who will be responsible for providing any resources entailed by those recommendations; any changes in organization, policy or governance that will be necessary to meet the recommendations and who will be responsible for acting on those recommendations; and timelines for acting on and monitoring the implementation of those recommendations.

Executive Summary of the Review

In accordance with the Institutional Quality Assurance Process (IQAP), the Chemical Engineering program submitted a self-study in March 2018 to the Vice-Provost and Dean of Graduate Studies to initiate the cyclical program review of its graduate programs. The approved self-study presented program descriptions, learning outcomes, and analyses of data provided by the Office of Institutional Research and Analysis. Appendices to the self-study contained all course outlines associated with the program and the CVs for each full-time member in the department.

Two arm's length external reviewers and one internal reviewer were endorsed by the Dean, Faculty of Engineering, and selected by the Vice-Provost and Dean of Graduate Studies. The review team reviewed the self-study documentation and then conducted a site visit to McMaster University on April 9th and 10th, 2018. The visit included interviews with the Provost and Vice-President (Academic); Vice-Provost and Dean of Graduate Studies, Associate Dean, Grad Studies and Research, Chair of the program and meetings with groups of current students, faculty and support staff.

The Chair of the program and the Dean of the Faculty of Engineering submitted responses to the Reviewers' Report (June 2018). Specific recommendations were discussed and clarifications and corrections were presented. Follow-up actions and timelines were included.

Strengths

- Very high-quality faculty and high-quality students in the graduate programs.
- Research intensive department with both basic and applied research through industry collaborations, interdisciplinary and collaborative initiatives.
- Very collaborative environment both for the faculty members and students. Collaboration is considered part of the "DNA" of the department and critical to its culture.
- Accelerated Master's program.
- Internship/Co-op programs in research intensive graduate degrees (Ph.D. and Master's).

Areas for Enhancement or Improvement

- The professional development of graduate students is an area of significant potential for the department. The department has a clear commitment to the graduate student experience and this would help the department to compete for graduate students with other universities.
- The committee has commented extensively on the language requirements and sees the resolution of this issue as a top priority.

Summary of the Reviewers' Recommendations with the Department's and Dean's Responses

Recommendation	Proposed Follow-Up	Responsibility for Leading Follow-Up	Timeline for Addressing Recommendation
That the department continue its practices of intermingling graduate student office spaces between research clusters.	We will continue our current practice, as we agree with the recommendation that this is a strength area of the Department.	Chair and Departmental Administrator	Already implemented and to be maintained
The University and Faculty need to ensure that the space commitments to the department are honoured.	We believe that no follow-up is needed, since the Faculty of Engineering has always honoured the commitments made to our Department and trust is a cornerstone of how the Faculty has always interacted with our Department	Chair and Dean	Immediate and on-going
Continue to develop, in collaboration with the Faculty of Engineering, its graduate student teaching assistant workshops and career development initiatives. There was very positive support for these initiatives at the Faculty level.	We thank the reviewers for pointing out how valuable these programs are. The Dean and his office have been exceptional in establishing and supporting these programs, and we will continue to mandate and/or strongly encourage participation in these initiatives among our graduate students as well as participate in the delivery of such workshops/initiatives as needed.	Chair, Dean and Associate Deans	Already implemented and to be maintained
The department should begin using the TA teaching evaluations currently available at the University level.	This is a very valuable comment and we fully appreciated the need for TAs to receive feedback on their work. The current teaching evaluation questionnaires include a section regarding the TAs. The information on these sections is already typically passed on to the TAs by the course instructor, as long as confidentiality is maintained and after the comments are screened by the instructors for inappropriate content. The	Chair and Associate Chair (Graduate)	Already in place and reminder from Chair to be given to all faculty members every term.

	quantity and quality of the feedback is usually limited, but we have to ensure that in case specific feedback is given, that instructors do send it to the appropriate TAs. Every term the Chair will remind all faculty members that TA feedback should be sent to the TAs, if available in the questionnaires - if appropriate and maintaining confidentiality. The Chair will also encourage all faculty to provide specific feedback to their TAs independently of the student evaluations, as we agree this is valuable feedback for improving TA best practices as well as providing content for future teaching portfolios among the graduate students.		
Ensure that all students who wish to challenge themselves through various TA positions and teaching fellowships are provided an opportunity as appropriate.	We agree with the reviewers and would love to be able to provide as many opportunities as possible, but these opportunities are limited by budgets. Our Department is already over-extended in terms of the allocated budget for TAs. As a minimum, all graduate students get at least one term of TAing per year. If the budget allocated by the faculty is increased, we will happily give more TA opportunities to the students. We already provide a TA preferences questionnaire to graduate students to gauge their interest in various types of TA positions and will continue to use this questionnaire to best match student interests to available positions, while at the same time taking into account the appropriateness of the student's background for	Chair, Dean, Departmental Administrator, Associate Dean (Graduate) and Director of Finance/Administration	Budgets are given on an early basis

	the course and the needs specified by the instructor for the successful delivery of the course to ensure high quality undergraduate instruction. For any available sessional instructor positions, we will continue our practice of posting these positions openly to all Ph.D. candidates in the Department and interviewing interested candidates prior to any assignment being distributed		
Ensure that TAship in the department is viewed as one of the key professional development opportunities by providing various opportunities for positions, adequate training, and constructive feedback to the students.	We agree and we will continue to offer our annual TA training session to all graduate students. We will extend these sessions to emphasize the importance of communication as key factor for professional success. We will encourage our graduate students to take advantage of the many opportunities offered by the MacPherson Institute. In the academic year of 2017-18, our Department voted and unanimously supported changing our graduate course requirements to allow one of our required graduate courses to be in a non-engineering/science field, such as courses in teaching and learning. These changes have been approved at the Senate level, after approval by the Graduate Council. As such, it will now be easier for our students to gain additional training in this area while still fulfilling program requirements.	Chair, Associate Chair (Graduate), Associate Dean (Graduate) and MacPherson Institute	Already implemented new policy to provide flexibility for students to take at least one course that is outside of engineering/science to provide additional opportunities for professional development. We need to increase student awareness of graduate coops and industrial Ph.D. We will work with the Associate Dean to better advertise this to our students – this will be done in the next year.

	The Associate Dean has been very active and is developing capacity in the Faculty to increase the opportunities for professional development, such as coop for graduate students and industrial Ph.D. options. We will continue to support these options for our students.		
Review the requirement for Master's students to give oral presentations and/or other opportunities to communicate their knowledge to a wide audience.	We agree with the reviewers on this point. During our May retreat, we already voted to require all graduate students to present (either orally or through a poster) their research work in our annual research conference called MUCEC, attended by all graduate students and professors. While this formal change requires approval by Graduate Council and thus cannot be a formal program requirement until the 2019-2020 academic year, we have already updated the graduate student handbook strongly encouraging Master's students to deliver one poster presentation at MUCEC and will remind faculty members of our decision on this point prior to the next MUCEC conference to encourage high participation rates.	Chair, Associate Chair (Graduate) and Assistant Administrator (Graduate)	Already added to graduate student handbook. The paperwork to make this a formal program requirement for the Master's degree will be submitted in September. The Assistant Administrator has been tasked with monitoring that this requirement is met.
It is recommended that the department review the course offerings, especially in light of the accelerated Master's students only having one year to take graduate courses, and some courses are only offered on alternative years.	We agree with the reviewers, and for the academic year of 2017-18 we already got Graduate Council approval to modify our graduate course requirements to allow all our graduate students to take one non-technical course selected by the student (and approved by the supervisor) to provide an additional opportunity to professional development – this	Chair, Associate Chair (Graduate)	Already got Graduate Council and Senate approval to provide more flexibility in course selection and cross-listed many graduate courses. We will identify any essential graduate courses

	will open up a large number of potential courses that can be taken by the students. In addition, we cross-listed a large number of graduate courses to increase the available courses to all students. Finally, between 2015 till 2019, we hired 6 new professors, each bringing new graduate courses to the Department to significantly expand our range of course offerings. Most of these new courses will be coming on to the books in the next 2-3 years as these new professors become established, starting this year with a new course in Bacteriophage Biotechnology. In terms of allowing Accelerated Master's students more access to courses offered only in alternate years, we will review the course calendar and ensure that any graduate course that would be considered essential to success in a given project is offered with a frequency suitable for the Accelerated Master's program timing. We have already done this with our advanced statistics course (CHEM ENG 765), which was offered twice last year alone.		for Accelerated Master's students within the next year and will offer those courses on an annual instead of alternate year basis.
The department may wish to discuss how it will support the new internship and industrially based programs.	We did not yet have any students opting for this path, and this is a Faculty-wide initiative. The Chairs of all the Departments meet formally and informally at least once per month and best-practices will be shared. The Department was polled when this initiative was first presented by the Dean and Associate Dean and there was unanimous support. There is a long history of department-industry	Chair/Associate Chair (Graduate)/ Associate Dean (Graduate)/	Already started and current parameters will be revisited and adjusted as students make it through the program.

	collaboration which makes internships a natural process.		
The committee would suggest that the department specifically update the program learning objectives to reflect the new graduate programming specifically the work experience.	We agree with this recommendation.	Chair/Associate Chair (Graduate) in consultation with the Associate Dean (Graduate)/	This exercise will be started in 2018 and to be completed by 2020.
The Faculty of Engineering should encourage all graduate programs in the Faculty to address the matter of language proficiency requirements.	The Faculty of Engineering is aware of differences in language requirements. The Department of Chemical Engineering has already the highest language requirements in the Faculty and, at our May retreat, we voted to further increase the program requirements to a 91 minimum TOEFL score (minimum 20/category) and a 7.0 minimum IELTS score (minimum 6.5/category). 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. This change needs to be approved by Graduate Council and will be submitted for approval for the 2019-2020 admission cycle.	Dean, Associate Deans and Chairs	The Dean has been very clear, for a couple of years, in insisting that all departments raise language requirements. Some Departments have responded positively (such as Chemical Engineering), while others have been more conservative because increasing requirements would decrease their graduate student counts. This issue is discussed at Dean's Council several times every year and there has been a gradual overall increase of the requirements thanks to the Dean and Associate Dean (Graduate)

That the Department, in consultation with the School of Graduate Studies, make information regarding the new language proficiency requirements accessible and transparent to prospective graduate students on all relevant websites.	We agree that the varying language requirement statements are confusing. We will ensure that there is consistency in all relevant webpages between the Faculty of Engineering, the School of Graduate Studies, and our department, after the new minimums are approved by Graduate Council.	Chair, Associate Chair (Graduate) and Assistant Administrator (Graduate)	Implemented and to be monitored on a yearly basis.
That the Department of Chemical Engineering admit all graduate students at a single IELTS or equivalent measure.	Our Department does not accept any students below the specified minimum and will not approve any requests for exceptions to these minima. In fact, after our Departmental Retreat in May, we voted to TOEFL/ILETS requirement to 91 (minimum 20 per category) or 7.0 (minimum 6.5 per category), making it the second highest in Canada for Chemical Engineering. We believe that the reviewers got the impression of a multi-tiered system, because different departments have different requirements and the Faculty does not have a common minimum.	Chair, Associate Chair (Graduate) and Assistant Administrator (Graduate) to ensure that these minimum requirements are met	Continuous monitoring and ensuring that applications not meeting the minimum requirements are not further considered, consistent with our current practice.
That Chemical Engineering develop new opportunities for graduate students, particularly Ph.D. candidates, to work in laboratories not only outside of McMaster, but also outside of Canada.	We currently have 2-7 graduate students participating in lab exchanges. We believe that this is best achieved at the supervisor/student level. Doing it at the Department level does not seem to be feasible since the Department does not have funds to support these exchanges and the supervisor/student are much better equipped to make the connections with different labs.	Graduate Students and Supervisors. Associate Chair (Graduate) to provide support to remove barriers	Already being done for many years. We will continue to accommodate these requests in terms of waiving seminar requirements, scheduling TA assignments etc. as appropriate to facilitate these opportunities.
That Chemical Engineering, in collaboration with the Faculty of Engineering	Please see response for previous item – the main issue is the same. We will certainly join with the Faculty on ongoing efforts to establish linkages	Graduate Students and Supervisors. Associate	Already being done for many years

develop key "partner" universities, particularly in institutions (e.g., in the U.S.) where strong relationships – through research collaborations already underway with faculty members – already exist.	with partner universities (most recently with Northwestern Polytechnical Institute in China and Penn State) and promote these exchange opportunities to our students.	Chair (Graduate) to provide support to remove barriers	

Dean's Response

The Faculty had read the reply of the program to the reviewers' recommendations and consider their approach prudent. They have identified urgent task versus long-term continuing areas for improvement. The reviewers in their assessment of Chemical Engineering found a department that has kept its attention on staffing, research output and teaching, concluding it to be a very strong and collegial department with significant research leaders at all rank levels.

The reviewers identified language proficiency standards as a minor issue to be addressed, which the program has responded that they will immediately handle through GCPC. They seem very concerned that the department and Faculty could have different minimums though it is not the philosophy in the Faculty to operating in a top-down manner; they encourage departments to aspire to the highest possible standards yet recognize that each discipline is in a much better position to set those standards provided undergraduate students encounter only high-quality TAs. The Faculty will continue to ask all of the departments to raise their minimums over time. The reviewers make a mistake though in stating an enrolled student who did not receive a TA due to their low proficiency score while applying may re-take the test to receive a TA later – that is not consistent with the Faculty internal policies.

Most of the big recommendations provided by the reviewers related to internationalization and external collaboration, giving the department some aspirational goals, though the Faculty doesn't see any links being made in the report to curriculum content or programming quality that would be relevant to this review exercise and so they don't consider these as urgent tasks.

The Faculty was gratified that the reviewers were excited by the faculty initiatives to include more workplace experiential learning in curricula and will continue to help Chemical Engineering and all other Engineering departments integrate these experiences in their programs. They greatly appreciate the hard work and effort undertaken by the reviewers and thank them for providing valuable suggestions that will help bring more visibility to the department as an international leader in research excellence.

Quality Assurance Committee Recommendation

McMaster's Quality Assurance Committee (QAC) reviewed the above documentation and the committee recommends that the program should follow the regular course of action with a progress report and subsequent full external cyclical review to be conducted no later than 8 years after the start of the last review.

FINAL ASSESSMENT REPORT

Institutional Quality Assurance Program (IQAP) Review

Globalization M.A.

Date of Review: March 28 and 29, 2018

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

The report includes an Implementation Plan that identifies who will be responsible for approving the recommendations set out in the Final Assessment Report; who will be responsible for providing any resources entailed by those recommendations; any changes in organization, policy or governance that will be necessary to meet the recommendations and who will be responsible for acting on those recommendations; and timelines for acting on and monitoring the implementation of those recommendations.

Executive Summary of the Review

In accordance with the Institutional Quality Assurance Process (IQAP), the Globalization program submitted a self-study in February 2018 to the Vice-Provost and Dean to initiate the cyclical program review of its M.A. program. The approved self-study presented program descriptions, learning outcomes, and analyses of data provided by the Office of Institutional Research and Analysis. Appendices to the self-study contained all course outlines associated with the program and the CVs for each full-time member in the department.

Two arm's length external reviewers and one internal reviewer were endorsed by the Dean, Faculty of Social Sciences, and selected by the Vice-Provost and Dean of Graduate Studies. The review team reviewed the self-study documentation and then conducted a site visit to McMaster University on March 28th and 29th, 2018. The visit included interviews with the Provost and Vice-President (Academic); Vice-Provost and Dean of Graduate Studies, Associate Dean, Grad Studies and Research, Director of the program and meetings with groups of current students, faculty and support staff.

The Director of the program and the Dean of the Faculty of Social Sciences submitted responses to the Reviewers' Report (May 2018). Specific recommendations were discussed and clarifications and corrections were presented. Follow-up actions and timelines were included.

Strengths

The reviewers noted many strengths with the MA in Globalization program. The overall student experience with the program was judged to be exceptional. This is due primarily because of the high quality of the academic training, with students benefitting from a wide range of theoretical and methodological approaches to understanding globalization. The program's commitment to interdisciplinarity, its enthusiastic faculty, the flexible program structure, as well as the diverse academic and personal backgrounds of the student body were further identified as elements that enhanced the student experience. The reviewers also emphasized that the graduate program is consistent with, and indeed makes a unique contribution, to McMaster's Mission and Academic Plan.

Areas for Enhancement or Improvement

- Recruit additional tenured/tenure-track faculty to do core teaching in the graduate program
- Increase the profile and expand the network of the graduate program both externally and internally
- Enhance the opportunities for research training, experiential education, and community engaged research for graduate students
- Expand the opportunities for graduate funding (especially for international students) and improve the transparency of funding decisions
- Revitalize the governance structure and expand the staffing of the IGHC

Summary of the Reviewers' Recommendations with the Department's and Dean's Responses

Recommendation	Proposed Follow-Up	Responsibility for Leading Follow-Up	Timeline for Addressing Recommendation
Improve the branding and marketing of the MA in Globalization in order to make its public and social media more coherent with its outlook and values	The IGHC will review its online and print materials that promote the MA in Globalization. The Marketing & Promotions Coordinator at the Faculty of Social Sciences will be consulted when developing a strategic plan about the marketing and branding of the graduate program.	Director	Fall 2018
Secure committed teaching units from tenure track faculty members	The IGHC will enter into negotiations with the relevant	Director	Fall 2018

from Social Sciences and Humanities at McMaster University for extended periods, ideally for 3-5 years stints, which would consolidate the program while building stable personal links with departments	Deans to secure additional teaching commitments from existing permanent faculty at McMaster.		
Build partnerships and explore possible collaborative opportunities with other programs	The IGHC will consult with the Directors of the MA in Gender Studies, the MA in Cultural Studies & Critical Theory, and other relevant graduate programs to identify potential areas of collaboration, cooperation, and partnership in order to enhance the student experience.	Director/Advisory Committee	Ongoing over next 3 years
Hire a part-time administrator to assist the Coordinator and increase opportunities to involving students in faculty research and training.	The IGHC will enter into negotiations with the Dean of Social Sciences to secure an additional staff position.	Director	Fall 2018
Explore opportunities with the Office for Community Engagement and look to commensurate programs for guidance and potential collaboration to develop experiential learning opportunities. However, be mindful of existing resources constraints and the material frailty of the program. In order to have a successful community engagement program, the MA would require additional personnel to manage the opportunities. In the absence of increased teaching units and	The IGHC will continue building its relationship with the Office of Community Engagement by connecting graduate students with research opportunities in the Hamilton area. Research opportunities that complement students' MRP papers will be prioritized. The level of engagement with this Office will be mindful of the administrative resources available at the IGHC.	Director	Ongoing

administrative support, we do not recommend pursuing community engagement.			
Internationalization: where possible, more funding should be directed to offsetting international fees in the form of tuition waivers or scholarships. This will attract more international students to the program whilst maintaining its commitments to inclusion and accessibility for disadvantaged and marginalized people.	The IGHC will continue working with the Faculty of Social Sciences, in particular the Associate Dean of Graduate Studies and Research, to secure additional scholarships and other financial resources for international students.	Director	Ongoing
Increase research training opportunities for students.	The Advisory Committee will consider this recommendation and look to design research training workshops for all graduate students as well as increase the number of opportunities for students to work as Research Assistants. Further efforts will be made to integrate graduate students into the research life of the IGHC.	Advisory Committee	Ongoing over next 3 years
Improve marketing and profile with sister undergraduate programs beyond McMaster	The IGHC will promote the MA in Globalization to undergraduate students in relevant global studies programs across Canada and abroad. It will consult its 2015 report on the possibility of creating an undergraduate program in Globalization Studies at McMaster. This report conducted a detailed	Director	Fall 2018

	analysis of undergraduate programs in global studies. The IGHC will aim to marketing the MA in Globalization to students in these programs.		
Standardize the TA allocation process and make clear that these positions are allocated on a competitive basis.	The Advisory Committee will create new protocols for the distribution of TA positions and develop a transparent process for communicating how these positions are allocated to students.	Director/Advisory Committee	Fall 2018
Refine the research methods course such that it offers training opportunities beginning in first term and formalizes the workshop program.	The Advisory Committee will consider this recommendation as part of its overall consideration of how its core graduate courses (Globalization 709 and 710) are taught.	Advisory Committee	Fall 2018
Develop program streams to improve the coherence of the program and assist students in the design of their MA degree	The Advisory Committee will review the program structure of the MA in Globalization and make changes that will enhance the student experience while maintaining the academic integrity of the program.	Advisory Committee	Ongoing over the next 3 years
Consider improving experiential learning and community engagement opportunities by increasing the faculty resources involved and interchanging the MRP with field work opportunities.	The IGHC will consider this recommendation contingent on securing staff resources to support internships and field research opportunities.	Advisory Committee	Ongoing over next 3 years
Offer research assistantships in projects led to faculty members'	The Director will consult with the Dean of Social Sciences as	Director/Advisory Committee	Fall 2018

research programs, in place of scholarships	well as the Associate Dean of Graduate Studies and Research in order to determine the feasibility of this recommendation. The Advisory Committee will also reach out to IGHC faculty and encourage them to use their research funding to hire Globalization MA students as RAs.		
Re-introduce distinct positions for the direction of the MA program and of the Institute.	The Advisory Committee will consider this recommendation about the governance of the IGHC and graduate program once the new Director begins her five-year term in July 2018.	Advisory Committee	Fall 2018
Ensure that membership of the advisory group be broadly representative of the McMaster community and especially of those engaged with globalization issues, and that it be truly involved in the life of the program and of the Institute.	The Advisory Committee will review its membership on an ongoing basis in order to ensure that it is a diverse and representative body.	Advisory Committee	Ongoing
Develop a PhD Diploma/Certificate in Globalization that could be tacked on to a standard disciplinary PhD.	The Advisory Committee will consider this recommendation and consult with relevant PhD granting departments at McMaster about their interest in such an initiative. The viability of providing a Diploma for MA/MSc students in other programs will also be explored.	Advisory Committee	Ongoing over the next 3 years

Dean's Response

Overall, the reviewers provided a resounding endorsement of the program, while noting some areas for improvement and recommending some specific actions to undertake to address them. The reviewers emphasized the distinctiveness of the Globalization MA within the Canadian landscape of global programs (e.g., Munk, Balsillie, etc.), the exceptional student experience in the program, the intellectual rigour underlying its approach to the critical analysis of globalization and its effects, and the program's fit with McMaster's strategic focus on globalization and internationalization. As is often the case for interdisciplinary programs that cross departments and faculties, it relies heavily on the goodwill and commitment of participating faculty, and the reviewers lauded the commitment of participating faculty.

While the Faculty will support the IGHC as it implements the larger set of recommendations, the Dean focused his comments on those recommendations for which the Faculty may play a particularly important role.

1. *Build partnerships and explore possible collaborative opportunities with other programs.*

This recommendation is consistent with a greater emphasis within IGHC more generally on increased collaboration (research and educational) both with other units at McMaster and externally. While the report highlighted opportunities with Humanities, which should be explored, opportunities likely exist with other faculties as well. There may be scope, for instance, to expand the current collaboration within the inter-faculty Global Health graduate programs. A broader range of research collaborations with other academic partners external to McMaster may also lead to opportunities for exchange and other types of educational collaborations. The Dean's offices is happy to work with IGHC as appropriate to pursue such opportunities.

2. *Secure committed teaching units from tenure track faculty members from Social Sciences and Humanities at McMaster University for extended periods, ideally for 3-5 years stints, which would consolidate the program while building stable personal links with departments*

This, to be frank, is a challenging recommendation at a time when the faculty complements in both Humanities and the Social Sciences have fallen, overall course enrolments have grown, and, although the financial status of each has improved in recent years, both faculties continue to face fiscal challenges. Nonetheless, the Dean's office will work with the Director of IGHC, relevant Department Chairs and interested faculty, and the Dean of Humanities to explore opportunities to make such time-limited commitments to the Globalization MA. Working together, they may be able to identify creative ways to take advantage of shared interests that can provide greater stability to the MA program.

3. *Hire a part-time administrator to assist the Coordinator*

The administrator role is a shared position across the Globalization MA and general IGHC programming and activities. Changes to staffing therefore have to be considered within the larger context of demands across these two components of the position, and support provided by IGHC for its activities

distinct from the MA program. They also have to be considered in light of the new responsibilities providing support for a limited set of administrative activities to the Water Without Borders program, an arrangement that began this past year (and is more limited than depicted in the review report).

4. *Internationalization: where possible, more funding should be directed to offsetting international fees in the form of tuition waivers or scholarships. This will attract more international students to the program whilst maintaining its commitments to inclusion and accessibility for disadvantaged and marginalized people.*

Admitting international students has been, and will continue to be, a challenge for the program. The Dean viewed this issue as linked to the discussion and recommendations about integrating students into faculty research. The reviewers too readily dismissed the contribution research funding associated with IGHC and its faculty can play in providing funding to support the admission of strong international (and Canadian) students. While tuition waivers can help and deserve to be examined, alone they will be of limited effectiveness. Working with IGHC, the Faculty needs to develop ways to expand the pool of resources available.

5. *Experiential Learning and Community Engagement*
    a. *Consider improving experiential learning and community engagement opportunities by increasing the faculty resources involved and interchanging the MRP with field work opportunities.*
    b. *Explore opportunities with the Office for Community Engagement and look to commensurate programs for guidance and potential collaboration to develop experiential learning opportunities. However, be mindful of existing resources constraints and the material frailty of the program. In order to have a successful community engagement program, the MA would require additional personnel to manage the opportunities. In the absence of increased teaching units and administrative support, we do not recommend pursuing community engagement.*

These two are linked. The reviewers correctly identify these as a challenge in a 12-month MA program. However, a number of aspects of the current environment suggest that there may be more opportunities than in the past. The greater emphasis on experiential learning in graduate training suggests that both more and more variety of opportunities will be available, even in the context of programs structures as the Globalization MA. Given that many of the faculty associated with IGHC conduct community-engaged research, better integration of Globalization students in the research of faculty should create opportunities for community engagement related to that research. This is also consistent with potential opportunities for students to get involved with the Office for Community Engagement through the research shop that it now oversees. So while resources and the nature of the 12-month program place real constraints on the nature and amount of experiential learning and community engagement that is possible within the MA, it is possible to improve upon the current situation.

6. *Re-introduce distinct positions for the direction of the MA program and of the Institute.*

This is an internal matter relating to the governance of IGHC and its programs. IGHC receives the same support for the Institute and the MA program (6 units of teaching release) as comparable units within the Faculty. The MA program is notably smaller than the graduate programs of departments

and schools in the Faculty, which counterbalances the increased administrative complexity of an interdisciplinary MA.

Quality Assurance Committee Recommendation

McMaster's Quality Assurance Committee (QAC) reviewed the above documentation and the committee recommends that the program should follow a modified course of action with a progress report and a modified internal cyclical review to be conducted no later than 4 years after the start of the last review. At the time of the internal review, the committee will be looking at progress that has been made in response to the recommendations and specifically, how the recommendations have been implemented with the resources available at the time.

FINAL ASSESSMENT REPORT

Institutional Quality Assurance Program (IQAP) Review

Master of Health Management

Date of Review: January 22 and 23, 2018

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

The report includes an Implementation Plan that identifies who will be responsible for approving the recommendations set out in the Final Assessment Report; who will be responsible for providing any resources entailed by those recommendations; any changes in organization, policy or governance that will be necessary to meet the recommendations and who will be responsible for acting on those recommendations; and timelines for acting on and monitoring the implementation of those recommendations.

Executive Summary of the Review

In accordance with the Institutional Quality Assurance Process (IQAP), the Master of Health Management program submitted a self-study November 2017 to the Vice-Provost and Dean of Graduate Studies to initiate the cyclical program review of the program. The approved self-study presented program descriptions, learning outcomes, and analyses of data provided by the Office of Institutional Research and Analysis. Appendices to the self-study contained all course outlines associated with the program and the CVs for each full-time member in the department.

Two arm's length external reviewers and one internal reviewer were endorsed by the Deans, Faculty of Business and Health Sciences, and selected by the Vice-Provost and Dean of Graduate Studies. The review team reviewed the self-study documentation and then conducted a site visit to McMaster University on January 22nd and 23rd, 2018. The visit included interviews with the Provost and Vice-President (Academic); Vice-PRovost and Dean of Graduate Studies, Associate Dean, Grad Studies and Research, Co-Directors of the program and meetings with groups of current students, full-time faculty and support staff.

The Co-Directors of the Program and the Deans of the Faculties of Business and Health Sciences submitted responses to the Reviewers' Report (March 2018). Specific recommendations were discussed and clarifications and corrections were presented. Follow-up actions and timelines were included.

- **Strengths**

Master in Health Management (MHM) is an innovative program, exceptionally well run and is meeting the advanced education needs of health professionals. Overall, stakeholders (staff, full-time and part-time faculty, upper management, students and alumni) view this program positively. Two indicators reported in the self-study, student retention and time to completion, reflect a rigorous, yet appropriately paced, program that selects the right candidates. Revenues are reinvested in support of faculty (research and conferences) and students (awards). Current innovations in the program to integrate a full-time stream and course development to support experiential learning options are key indicators of the ongoing responsiveness of the program to student demand and feedback.

- **Areas for Enhancement or Improvement**

The program noted that the following items were worthy of their attention but not included by the reviewers in the section called areas for enhancement/improvement:

1. Reviewers note that the admissions process of non-regulated healthcare professionals should be more transparent. Admission requirements for non-regulated healthcare professionals are listed on the program website. Applicants are required to submit a one-page letter outlining their educational and work experience and provide a clear rationale as to how these have prepared them for meeting the following core competencies of the Master of Health Management Program:

    a. Awareness of the political and healthcare environments

    b. Organizational behaviour and human resources management

    c. Financial management

    d. Research awareness

    e. Leadership

The statement regarding the letter and the core competencies is linked to the admissions page; based on the feedback of the review team they will ensure that this is included on the main page and added to the MHM Program description of the 2019-2020 Graduate Calendar. They will discuss at a future executive meeting the inclusion of non-regulated healthcare professionals, review data on the achievements of the non-regulated health professions who have completed the program and determine whether additional admissions criteria are warranted.

2. The reviewers suggest that the feasibility of offering travel bursaries for students to attend the residency be investigated and considered by the MHM executive. The program will review the need and financial implications of providing travel bursaries for students. As current students are working full-time, we do not anticipate that there is a significant need. However, they are mindful that the costs associated with attending the residencies could be significant in the full-time cohort. If demonstrated

need is apparent, then a process will be developed and shared with students in time for 2019 Spring Residency.

3. On an ongoing basis, pre-course skills will be identified by instructors and appropriate modules will be added to the MHM Virtual Office for students to gain various proficiencies that could attribute to course success.

4. The reviewers note that there was little information about academic services accessed by students and their level of satisfaction with these services. The program will implement a survey of current students and recent graduates of their use of available student services to assess utilization and need.

Summary of the Reviewers' Recommendations with the Department's and Dean's Responses

Recommendation	Proposed Follow-Up	Responsibility for Leading Follow-Up	Timeline for Addressing Recommendation
Curriculum (EDI, Canadian content and examples)	-Although not always explicit, the topic of EDI is included in some courses (HM700-Health Policy, HM708–Leadership). We recognize that aspects of EDI could be included in all courses. We will poll current instructors about the inclusion of EDI in their courses to understand our baseline. We plan on having this as a discussion topic at the Fall 2018 Instructors Meeting. Instructors will discuss personal strategies to include EDI in their curriculum. Instructors will add a statement about EDI to their course description of the 2019-2020 Graduate Calendar. -Some courses do include content dealing with other provinces/countries. In HM700–Health Policy and HM731-Economic Evaluation students have the freedom to complete an assignment using any province/state/country. Instructors will discuss personal strategies to include more Canadian/ world content, and interprofessional examples that are more relatable to all students in their curriculum at the Fall Instructors Meeting.	-Instructors -Executive	Initiate at Fall 2018 Instructors Meeting. Adopt new and better examples each year.

Curriculum (human resources, digital health, quantitative analysis techniques)	The core content of the program and courses is reviewed annually. -Aspects of human resources (HR) are included in HM706–Health Foundations I, HM708–Leadership, and Spring Residency (Conflict Mode workshop). We will discuss key HR learning outcomes at a future executive meeting and where best to include these materials: in an existing course(s) or an online module. -Digital health is not significantly core to MHM curriculum. Students interested in this topic have the choice to focus on this area by completing an elective, HM730-Scholarly Paper, or HM798-Experiential Study. -Including quantitative analysis techniques is beyond the scope of the MHM Program. Students interested in this topic have the choice to focus on this area by completing an elective, HM730-Scholarly Paper or HM798-Experiential Study.	-Instructors -Executive	At future executive meeting discuss key HR learning outcomes and determine where to include these aspects in the curriculum by Fall 2019.
Enhance mental health supports for distance students	Through the Student Handbook and during the Fall Residency, we will increase student awareness of available mental health supports (in-person or by phone). Staff have completed QPR training. We will send annual reminders to Instructors and MHM staff of available mental health supports for students. Instructors have mental health resources available in the Instructor Guide and the Instructors Virtual Hub. These resources are used to support and redirect students when appropriate.	-Instructors -MHM staff	Reaffirm supports to instructors, staff and students at the beginning of each academic year.
Provide informal, confidential mentoring opportunities	Group work and residency periods offer students the opportunity to develop community within their cohort and outside of their cohort. During the residency and within the Student Handbook, we will provide a	-Program Manager -Co-Directors	Include in Student Handbook and Orientation for each Fall Residency.

	list of ways students have and can create mentoring opportunities. It is our impression that some students have organically developed these relationships through Facebook, etc. The nature and means of these opportunities can differ based on the needs of the students.		
Marketing (program name, interprofessional)	We have not heard this feedback previously. Thank you for bringing it to our attention. We will amply promote the interprofessional nature of the program and highlight its value to the student experience. All marketing materials including the website and brochures will be reviewed and updated to include additional strengths of the program such as flexible, leading, doable, and interprofessional. We acknowledge that there has been some unfamiliarity with the degree designation of MHM. To counter this, we will ensure that students develop awareness of the differences between a MBA, MHM, and MHA degree with the intent to educate and advocate about the nature, content, and value of the MHM degree. We are confident that there will be more clarity in the community as we produce more graduates who can advocate on behalf of the program.	-Program Manager -Co-Directors	To be completed by Fall 2018. Ongoing with each new group of students.
Program planning (PhD and career pathways)	Advise students during Fall Residency and Spring Residency about the connection between course selection and academic/career pathways. Examples of careers such as management in health system, consulting, policy, etc. could be included.	-Program Manager -Co-Directors	Include in each Spring and Fall Residency.
Student input through focus groups	The MHM Program gathers student input after each residency, each course, and one year after graduation. Informally students provide program input during the	-Program Manager	Include in each Spring Residency.

	Spring Residency. A formal focus group could be led by the McPherson Institute during the Spring Residency. Any other time may be challenging given the fact that our students and alumni are located across Canada and abroad.		

Dean's Response

The Deans' appreciated that the reviewers recognized the innovative nature of this program that combines both business and healthcare administration. They agreed with their perception that the joint government and management is working very effectively and that the program does not have any major weaknesses. They appreciated the enhancements that were recommended for greater transparency in the admission of non-regulated healthcare professionals and to improve mentoring and mental health supports given that the primary mode of program delivery is through online courses. They also appreciated the suggestion to further develop the curriculum in some specific content, including issues related to equity, diversity and inclusion, human resource management and the coordination and delivery of healthcare to diverse populations and beyond the Ontario environment. The positive feedback on how the program is being run by the co-Directors and on the program's quality indicators and enhancements was appreciated.

They reviewed the program response to the reviewers' reports and fully agreed with their plans to address the suggested improvements, including the supports to attaining pre-course skills for those in need, enhancement to the program curriculum, and the enhancements to admissions for non-regulated healthcare professionals. They will be following the progress of these changes. Related to exploring needs for travel bursaries, they agreed with the program's view that the needs may not be significant given that current students are working full time. They support the plans to improve marketing, survey current students and recent graduates about academic services, and to increase student awareness of the interprofessional strengths of the program, mental health supports and mentoring opportunities. They also agreed with the plan to use the residency periods to discuss the possibility of PhD and other post-MHM completion career pathways.

Quality Assurance Committee Recommendation

McMaster's Quality Assurance Committee (QAC) reviewed the above documentation and the committee recommends that the program should follow the regular course of action with a progress report and subsequent full external cyclical review to be conducted no later than 8 years after the start of the last review.

FINAL ASSESSMENT REPORT

Institutional Quality Assurance Program (IQAP) Review

Psychology – M.Sc. and Ph.D.

Date of Review: April 19 – 20, 2018

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

The report includes an Implementation Plan that identifies who will be responsible for approving the recommendations set out in the Final Assessment Report; who will be responsible for providing any resources entailed by those recommendations; any changes in organization, policy or governance that will be necessary to meet the recommendations and who will be responsible for acting on those recommendations; and timelines for acting on and monitoring the implementation of those recommendations.

Executive Summary of the Review

In accordance with the Institutional Quality Assurance Process (IQAP), the Psychology program submitted a self-study in March 2018 to the Vice-Provost and Dean of Graduate Studies to initiate the cyclical program review of its graduate programs. The approved self-study presented program descriptions, learning outcomes, and analyses of data provided by the Office of Institutional Research and Analysis. Appendices to the self-study contained all course outlines associated with the program and the CVs for each full-time member in the department.

Two arm's length external reviewers and one internal reviewer were endorsed by the Dean, Faculty of Science and selected by the Vice-Provost and Dean of Graduate Studies. The review team reviewed the self-study documentation and then conducted a site visit to McMaster University on April 19 and 20, 2018. The visit included interviews with the Provost and Vice-President (Academic); Vice-Provost and Dean of Graduate Studies, Associate Dean, Grad Studies and Research, the Chair of the program, meetings with groups of current students, full-time faculty and support staff.

The Chair and the Dean of the Faculty of Science submitted responses to the Reviewers' Report (June 2018 and August 2018). Specific recommendations were discussed and clarifications and corrections were presented. Follow-up actions and timelines were included.

Strengths

- PNB is a high functioning, collaborative, and integrated department, and this reflected throughout the graduate program. The strengths of this program include a flexible and individualized program, a high degree of collaboration that allows each student to work with multiple faculty members, and extensive opportunities for graduate students to engage in mentorship of research assistants. PNB is unusual among psychology graduate programs in maintaining a well-integrated research-intensive program that has not split into multiple streams or fields of study.
- The IQAP review team stated in their review (page 5) that the "PNB graduate program is high quality and well-functioning". They further stated that the program provides a rich and collaborative program for our students, and that PNB has an uncommonly high level of collaboration and cohesion across the department. They noted that we "successfully combine rigorous academic graduate training with a strong sense of collegiality".
- The review team noted that research in PNB is very strong, based on publication and citation rates, as well as international reputation.
- The reviewers were very positive about the recent introduction of the Research and Clinical Training (RCT) stream. They stated that the objectives of this new stream, which is to provide a small number of students each year with opportunities for strong clinical research training, and to do so in a manner that maintains integrity with the PNB program more broadly, have been largely met. There is a high level of satisfaction with its current delivery and a strong sentiment that the success of the stream to this point is in large part owing to the strong partnership between PNB and Psychiatry that oversees its administration.
- The review committee expressed a positive opinion about the curriculum, in which the department achieves the program's learning outcomes in a manner that reflects disciplinary tends in the field using a strong "teaching at the bench" apprenticeship model, and by interdisciplinary work, collaboration, and acquisition of strong statistical and computational skills.
- The review team emphasized the cohesion of PNB very positively, as follows: "The extent to which opportunities for collaboration and interdisciplinary research are built into all components of the curriculum was viewed by the reviewing committee as an especially innovative feature and unique strength of the PNB graduate program. We were struck by how purposeful this aspect of the curriculum design was, and to what degree it was reflected in the department culture as a whole, which exudes a spirit of cooperation and cohesion. It is more common for Psychology departments to be functionally split into separate research areas. The PNB department at McMaster has done exactly the opposite and maintains a remarkable level of cohesion across the subdisciplines of psychology, to the benefit of the graduate program."
- In addition to the formal program requirements and expectations, students gain the opportunity during their graduate studies to develop strong mentorship skills by actively participating in the supervision of undergraduate project students and volunteers. It is common practice for undergraduate students in years 2, 3, and 4 to assist graduate students in their laboratory research, and to collaborate with graduate students on data analysis and

writing papers. The committee was extremely impressed by the level of engagement of graduate students in this apprenticeship model that would clearly facilitate students in achieving many if not all of the Graduate Degree Level Expectations and corresponding program learning outcomes.
- Even within the areas of improvement identified, the reviewers stated that the members of PNB seemed well-attuned to the challenges, and well-prepared to respond.

Areas for Enhancement or Improvement

- The executive summary offered by the review team: In general we conclude that the PNB graduate program is of very high quality. All of our recommendations should be considered as minor recommendations and are not meant to detract from our general conclusion that this is a very strong program.
- The reviewers confirmed that the program functions very well but could be further enhanced through formalizing some processes in procedures. This would particularly benefit the program moving forward as new faculty members are recruited as supervisors. Providing clarity about topics such as composition and term length of the graduate studies committee, graduate course offerings, expectations around reading group courses would enhance the transparency of the program for newcomers without sacrificing the very strong sense of collegiality and community.
- During the review the topic of long-term funding for core facilities, such as the LiveLab, came up. This is a common challenge in Canada where there is a challenge in funding ongoing operation of infrastructure built with CFI funding. The review team stated that the PNB department and university will need to work together in the long-term for the operation of such facilities.
- PNB is top heavy due to challenges related to hiring. They have not been able to add to the faculty complement in recent years. Moreover, there is an imbalance in the male:female ratio in the research stream that has widened considerably over the last several years.
- The program would like to improve their skills at developing and offering workshops on professional development for both academic and industry related careers. This might be done effectively in collaboration with other departments, and to that end we will coordinate through School of Graduate Studies.

Summary of the Reviewers' Recommendations with the Department's and Dean's Responses

Recommendation	Proposed Follow-Up	Responsibility for Leading Follow-Up	Timeline for Addressing Recommendation
Recommendation 1 PNB should continue to work with the Faculty of Science to identify how to use funds to attract international students and enhance internationalization. **Context:** The review team wrote: "The department has a very strong international reputation. Based on our meetings with faculty and graduate students, it appears there is a lack of clarity regarding the financial support recently made available for international graduate students. We see an opportunity here to build on existing strength. The PNB program should continue to work with SGS to identify how to use recent funds made available for international Ph.D. students in a manner to facilitate internationalization."	The site visit (April 19-20, 2018) was held at the same time as changes to international graduate tuition and support were being discussed and implemented at McMaster, so the sense of lack of clarity when talking to faculty and students was likely a function of these new opportunities being in transition. The School of Graduate Studies (SGS) has been working closely with faculties and departments to optimize our international PhD student fee structure in light of the Ontario government's modified structure of funding to Ontario universities.	PNB chair, PNB associate chair (graduate), PNB Graduate Studies Committee (GSC), School of Graduate Studies (SGS).	Ongoing now, in consultation with Faculty of Science and SGS.
Recommendation 2 PNB should continue best practices in graduate student recruitment and work to ensure implicit biases are minimized throughout the recruitment process. **Context:** The review team wrote: "Based on discussions with faculty members it appears the program is already doing a good job of ensuring that admission is based on merit and not	As a department they recognize the power of implicit biases and the challenges involved in identifying situations where implicit biases play a role. They have	PNB chair, PNB associate chair (graduate), PNB Graduate Studies Committee (GSC).	Over the 2018-2019 academic year (and beyond) we will continue to improve our process for reviewing graduate

how sociable or "like us" the applicants are. We encourage the program to continue to face this challenge and to codify practices to continue to reduce any implicit biases (which we are all subject to) in the admission process."	organized workshops around these issues and will continue to address this important issue going forward. With respect to graduate recruitment, they agree with the review committee that it is important to codify the assessment criteria used in the recruitment and admission process so that we can better evaluate our responses and work on minimizing effects of implicit biases. We would like to underline the importance of identifying and reducing implicit biases in other areas as well, such as hiring practices.		applications, as well as improve our evaluation process over the recruitment weekend activities. They are mindful of the need to apply these same improvements to our hiring processes.
Recommendation 3 (Curriculum): The program should formalize existing criteria for student performance and progress to ensure that assessment of student progression is transparent and accountable. **Context:** The review team wrote: "While the committee was impressed by the element of flexibility that is built into the curriculum, allowing students to tailor their program in manner that best befits their interests and career development, we would encourage the department to continue to develop practices to ensure clear and accountable processes on student performance and progress. For example, it was not entirely clear to us what the process is (or whether there is a formal process in place) for following up with students who are identified as progressing with difficulty during the course	The program stated that their procedure for monitoring individual student progress is quite good at present but could well benefit from additional measures as recommended by the IQAP review team. Currently, their process for monitoring progress is designed to create a paper trail of progress each year, including supervisory committee meeting reports, progress report evaluations, and review of each individual student at the annual June faculty meeting. Students who are not progressing as well as desired are identified at the June	PNB chair, PNB associate chair (graduate), PNB Graduate Studies Committee (GSC).	This will be resolved over the 2018-2019 academic year.

of the annual evaluation meeting, and also for ensuring that students complete course requirements in a timely manner. Although we understand that the supervisory committee is expected to follow up with the student and create a plan when performance is unsatisfactory, we would recommend that consideration also be given to the Graduate Chair providing a letter with feedback from the department."	meeting and both the supervisory committee and the graduate chair follow up on these students. There is a process already in place such that a letter from the graduate chair and SGS is prepared when a student is substantially off-track in their progress. This is a very rare occurrence and they believe it is rare because our system of monitoring and guiding students is very successful. However, they agree with the IQAP review team that in some cases, a letter from the graduate chair with feedback from the department could be a valuable addition to our process. The GSC will develop a proposal for criteria for such a letter.		
Recommendation 4 (Curriculum): PNB should continue to ensure that adequate numbers of graduate courses are offered each year, with as much advance notice as possible in order to facilitate student planning. **Context:** The review team wrote: "We encourage the department to continue to be mindful of offering an adequate selection of courses each year, and to provide as much advanced notice of upcoming course offerings, such that students are able to optimize the feature of flexibility built into the program in a manner that is not constrained by course availability. This is an issue that came up in both our meetings with students and faculty. We recognize the challenges associated with timetabling	Improvements in course offerings, especially providing advance notice of what will be offered in the coming year, is already underway. In the past, scheduling of undergraduate and graduate courses has been organized separately, with undergraduate commitments obtained in December and January, and graduate commitments obtained much later in the year. The program sees an opportunity to improve scheduling of graduate courses by yoking	PNB chair, PNB associate chair (graduate), PNB Graduate Studies Committee (GSC).	The program had already started earlier this year to confirm course availability for 2018-2019. They expect to have the new system in place for 2019-2020. The GSC will prepare course substitution guidelines for

of courses, and also that the department is making efforts to address the matter." **Further context:** The review team also pointed out that PNB could set in place more explicit guidelines regarding course credit for reading groups and online courses: "While the committee applauds the flexibility and opportunity for program customization that this mode of delivery affords students, it was not clear to us what safeguards are in place to ensure quality control. We would encourage the department to develop a clearly articulated set of expectations and reporting process for the administration of these courses. Likewise, in the Self Study it is mentioned that students are sometimes given permission to complete online courses in fulfillment of course requirements. The process for approving these courses, or what assessment criteria they are expected to meet in order to ensure that they are achieving the intended learning outcomes is not clear. In addition, it is not mentioned whether there are a maximum number of credits that can be obtained via this option. We encourage the department to clearly articulate the approval process, including quality assurance. "	the undergraduate and graduate scheduling. This way they can post graduate courses months earlier. With respect to offering course credit for reading groups and online courses, the program thinks these options provide valuable flexibility for the students whose needs are diverse. In the case of course credit in a reading group setting, their approach has been to carefully structure content and assessment so that the requirements meet the expectations for a graduate level quarter-course or half-course. To this end, a course outline is constructed by the faculty member overseeing the reading group and is approved by the Graduate Studies Committee. In the case of an online course, the study module is negotiated between the student, the faculty member who oversees the student's work, and the Graduate Studies Committee. They have added information to our Graduate Handbook with specific guidelines regarding expectations and evaluation.		implementation in 2018-2019.
Recommendation 5 (Curriculum): We commend the PNB department's attention to	As the program outlined in their self-study, there are substantial efforts by SGS and the McMaster Graduate	PNB chair, PNB associate chair	To start, the program will

professional and transferable skills development in students, and recommend they continue these efforts at both the program level and in conjunction with SGS. **Context:** The review team wrote: It was the impression of the committee that more focused attention may be given to ensuring that students receive adequate opportunities for professional skills development, including encouraging students to take advantage of offerings by SGS. We understand that professional development is a component of the Contemporary Problems course that all students take in their first year, and is a component that is currently in development. We also recognize that the department has, since the last review, made efforts to prepare students for careers outside academia, including expanding course offerings in computational and skills-based methods, and organizing events that allow current in-program students to establish a network with former students who have successfully navigated the path to industry. We commend the department for these efforts, and encourage them to continue to develop this component of their curriculum."	Student Association to offer workshops and other events that provide professional skills development. They already offer professional development classes as part of first year Contemporary Problems. They are working on improving these offerings for all of their students. Moreover, they are committed to learning more about the transition from academia to industry, so that the program can either provide workshops or point students to existing workshops that develop skills for both academia and industry.	(graduate), PNB Graduate Studies Committee (GSC).	expand their professional development series in CP for 2018-2019, and continue to identify (on campus and in the community) or develop a wider selection of lectures and workshops across the next two years.
Recommendation 6 (Teaching and Assessment): We recommend that the PNB graduate studies committee continue to monitor the functioning of the Contemporary Problems course in light of recent and potential increased enrolment. **Context:** The review team wrote: "There is a sense among some students that the 'program has outgrown the course'. We understand that discussions between faculty and students have begun on how some aspects of the course design may be modified to support	The Contemporary Problems (CP) course is team taught by a rotating set of faculty members each year and is meant to provide breadth of knowledge about current research areas in the department, as well as offer tutoring on issues related to professional	PNB chair, PNB associate chair (graduate), PNB Graduate Studies Committee (GSC).	They expect to transition over the next two years towards a model that can better satisfy the larger class sizes.

growing enrollment numbers, but in a manner that does not compromise those features of the course that seem to be working well. We commend the department for already initiating conversation on this issue in response to student feedback received in the course of preparing the Self Study, and encourage them to continue to refine the delivery and assessment of the course in a manner that reflects changing enrollments in the department."	development. Moreover, it serves an important cohort building function for the incoming class. As the incoming graduate class grows larger, they must reorganize the way they offer CP so that important features are not compromised (e.g. student involvement in discussions). The program is exploring options, in consultation with faculty and students, to revise some components of CP and will be implementing a set of changes in 2018-2019 to enhance this valuable course.		
Recommendation 7 (Teaching and Assessment): PNB should continue its existing culture of sharing equipment and resources for graduate students across labs. **Context:** The review team suggested: "The department does not appear to have any current plans for renovations of facilities, but if and when such renovations are considered the program may benefit from moving from having graduate students and equipment housed in individual labs to a more open concept core facilities model. This would allow the physical layout of the department to more fully support the cohesive and collaborative nature of the program."	The collaborative nature of the graduate program helps to maintain their success with sharing equipment and resources. There is enough space in the human research labs for their students to have their own desks in the lab itself. However, this does not work for the animal research labs and in that case the students share space in an open concept space. There are advantages and disadvantages to both these models. If the program is fortunate enough to be able to renovate department facilities in the future,	PNB chair, PNB associate chair (graduate), PNB Graduate Studies Committee (GSC).	They do not expect to renovate facilities for all graduate students in the near future, but they do evaluate student working space each year. For example, this year (2018-2019) they are redesigning the space for the graduate students working

	they will consider these pros and cons and decide whether to move to a more general open concept work space for all students.		in animal research labs.
Recommendation 8 (Academic Services): PNB should work with central administration to ensure adequate access to site-licensed software required by graduate students. **Context:** In our review the only academic service that appeared to need improvement was central site licensing of necessary software packages. It was not clear if this would be a Faculty or University responsibility at McMaster. Provisioning site licenses for necessary core software (e.g. Qualtrics, MatLab) is typically most efficiently done at an administrative level higher than the department. We encourage an exploration of how to most effectively to provide licenses for core, and necessary, software packages that support the graduate program in PNB and others on campus.	The program was in strong agreement that adequate access to site-licensed software is a critical element for productive research, and that this element could be improved at McMaster for some software packages such as Matlab. They will talk with administration at the faculty and university level to improve this critical support.	PNB chair, PNB associate chair (graduate), PNB Graduate Studies Committee (GSC).	The program will initiate these discussions immediately, over the 2018-2019 academic year.
Recommendation 9 (System of Governance): The department may wish to be more explicit in regard to detailing the policies by which the GSC makes decisions and implements changes, perhaps as part of the Faculty-wide process of updating Department by-laws and program handbooks.	Over the 2017-2018 year the program has made substantial improvements by developing a PNB Graduate Handbook, as well as a handbook specific to the Research and Clinical Training stream. A graduate student committee was formed during the winter term (2017-2018) to work with the graduate chair to construct the PNB Graduate Handbook. We	PNB chair, PNB associate chair (graduate), PNB Graduate Studies Committee (GSC).	These improvements are ongoing now; the program expects that updates will be needed each year. In fact, they are also revamping the department website

	designed the Graduate Handbook as a WIKI so that changes can be made at anytime in collaboration with faculty and students. Thus, the PNB Graduate Handbook is a "living" document such that it is edited and improved each time a question is raised or a clarification is needed. They are also working on updating PNB department by-laws.		on which department by-laws will be shared.
Recommendation 10 (System of Governance): Consideration may also be given to implementing a system whereby membership of the GSC is determined by election with renewable fixed terms.	Traditionally, the chair of the department is elected for a fixed term, and the associate chairs are selected by the chair for that same fixed term. The typical process for determining committee membership on GSC (as well as other department committees) involves a careful evaluation by the chair of the department of service and duties carried by faculty members. Assignment to committees is done in collaboration with associate chairs and the relevant faculty member so that the workload is shared fairly, and so that membership rotates across committees. Thus, each committee will usually have a rolling membership, with the chair	PNB chair, PNB associate chair (graduate), PNB Graduate Studies Committee (GSC).	During the 2018-2019 academic year they will propose to the department the idea of changing our system such that the department would elect members of the GSC to serve over a fixed term.

	of the committee first serving as a member of the committee for 2 or 3 years, and members of the committee cycling out to different committees after serving for 3 or 4 years on a staggered basis so that the committee always consists of new and experienced members. This system has worked very well for the department.		

Deans Response:

This Dean's response was prepared by the Dean of Science with input from the Associate Dean of Science (Graduate). The Dean thanked the review team for their efforts during the site visit and preparation of the report. The review highlights the strengths of the PNB graduate program and indicate that it provides a high-quality, collaborative training atmosphere, and where impactful research is carried out by graduate students. It is worth noting that graduate enrolment in PNB has increased by about 25% since the last review took place in 2009, in part due to the new RCT stream. In spite of the substantial growth, the program has done extremely well with regards to maintaining the quality of the experience, the careful and consistent methods of assessments, and the overall academic progress of students.

The Program has provided a detailed response to the review recommendations and we agree with both the recommendations and those Program responses. In some specific areas we have provided additional information and context to supplement the program responses and action plans. The reviewers were positive about Program graduate curriculum map of learning outcomes and the fact that these meet degree level expectations. The Dean noted that the recommendations with regards to course offerings have been adequately addressed by the department and agreed with the timelines for implementation and action.

The recommendation to enhance reputation by recruiting international Ph.D. students is timely since starting 2018-19 McMaster has equalized the tuition of this category of students. This step should make PNB more attractive to recruit the best students from other countries. Also, Dr. Bhagwati Gupta (Associate Dean of Science, Graduate) is working closely with PNB, as well as other graduate programs, in the Faculty of Science to develop graduate program specific international student strategic plans and to understand the associated resource needs to support these internationalization efforts.

The Dean agreed with the recommendation of developing best practices and accountable processes in order to follow up on performance and progress of students effectively. The program recognizes that it is an important issue and will be taking steps to strengthen the processes currently in place. The Faculty of Science will work to support these efforts.

The Faculty of Science supports efforts towards professional skill development of graduate students. In fact, McMaster is currently participating in one of the OCAV Taskforce pilot projects on Graduate Experiential Learning that is led by Bhagwati Gupta, Associate Dean of Science (Graduate). As part of the project, a subset of graduate programs from Science, as well as other Faculties, are being reviewed for curricular experiential learning activities. The outcome of this exercise is expected to help us engage with graduate programs and the School of Graduate Studies to further enhance the professional skills of the graduate students.

With respect to the recommendation to explore the possibility of centralized access to site-licensed software and packages, this is a topic of discussion at many levels of the McMaster University. McMaster recently purchased centralized access to Microsoft Office for all students, faculty and staff and similar solutions for high use software and IT resources are being explored. The new

Information Technology (IT) governance process at McMaster will provide several opportunities for consideration of this, and similar recommendations in the future.

The cohesive and collaborative nature of the Department of PNB and the successes of its associated academic programs are outstanding examples of excellence within the Faculty of Science and McMaster University. The IQAP review process has provided an important opportunity for self-reflection, external review and subsequent refinement that will certainly enhance these already outstanding programs.

Quality Assurance Committee Recommendation

McMaster's Quality Assurance Committee (QAC) reviewed the above documentation and the committee recommends that the program should follow the regular course of action with a progress report and subsequent full external cyclical review to be conducted no later than 8 years after the start of the last review.