January 15, 2018

TO: Members of the University Planning Committee

FROM: Tamara Bates
Governance Advisor and Assistant University Secretary

I am writing to inform you that the next meeting of the University Planning Committee will be held on **Wednesday, January 17, 2018 at 10:30 a.m. in the Council Chambers (Gilmour Hall, Room 111)**.

The purpose of this meeting is outlined on the attached agenda.

If you are unable to attend this meeting, please contact the University Secretariat at telephone 905-525-9140, ext. 24337 or e-mail univsec@mcmaster.ca.
UNIVERSITY PLANNING COMMITTEE

Wednesday, January 17, 2018 at 10:30 a.m.
Council Chambers, Gilmour Hall, Room 111

AGENDA

OPEN SESSION
I MINUTES of the Open Session meeting of November 15, 2017 (attached – for approval)

II BUSINESS ARISING

III CHAIR’S COMMENTS AND UPDATES

IV REPORT FROM GRADUATE COUNCIL (attached – for approval)
   i. Establishment of a Master of Science in Psychotherapy Program
   ii. Establishment of a Doctor of Philosophy in Statistics Program

V REPORT FROM UNDERGRADUATE COUNCIL (attached – for approval)
   i. Closure of the Honours Bachelor of Science Global Health Specialization
   ii. Closure of the Addiction Careworker Diploma and the Addiction Studies Certificate Programs

VI 2015-2016 AND 2016-2017 IQAP CYCLICAL PROGRAM REVIEWS (attached – for information)

VII OTHER BUSINESS

CLOSED SESSION

VIII MINUTES of the Closed Session meeting of November 15, 2017 (attached – for approval)

IX BUSINESS ARISING

X DRAFT STRATEGIC PLAN FOR RESEARCH 2018-2023 (for discussion)

XI OTHER BUSINESS
McMaster University

UNIVERSITY PLANNING COMMITTEE

Wednesday, November 15, 2017 at 10:30 a.m.
Council Room (Room 111), Gilmour Hall

PRESENT: Dr. D. Farrar (Chair), Dr. R. Baker, Mr. R. Couldrey, Dr. J. Daniel, Dr. G. Goward, Dr. S. Hanna, Dr. M. MacDonald, Dr. A. McQueen, Ms S. Nadarajah, Dr. J. Richardson, Ms L. Serviss, Dr. D. Welch, Ms T. Bates (Governance Advisor and Assistant University Secretary)

OBSERVERS: Dr. S. Searls Giroux, Mr. S. Van Koughnett

CONSULTANTS: Ms L. Coslovi, Dr. J. Lee

INVITED: Dr. D. Wilkinson, Ms A. Thyret-Kidd

REGRETS RECEIVED: Ms C. Garneau, Dr. P. Deane, Dr. S. Denburg, Ms M. Williams

I MINUTES

The minutes of the meeting held on September 20, 2017 and October 18, 2017 were approved as circulated.

II BUSINESS ARISING

There was no business arising from the minutes of the previous meeting.

III CHAIR’S COMMENTS AND UPDATES

Dr. Farrar reported that the University is now in corridor funding. The first Strategic Mandate Agreement (SMA) was written very well and could not have been better for McMaster. The second Strategic Mandate Agreement is all about the metrics that have been chosen. Now that corridor funding is in place, McMaster’s domestic enrolment is now pinned to the second SMA and so care must be taken not to over- or under-shoot those figures. The University must now be mindful of how many students are admitted and must watch them as they progress through their programs. McMaster must also be careful about how many international students are admitted and how they are supported during their studies. In preparation for the third SMA, the government is now asking McMaster for enrolment numbers for international students and will be taxing the University at a rate of $750 per international student.

The Committee heard that the funding is allotted across three categories: enrolment; differentiation funding, on which the Ministry could be flexible; and special purpose funding, which is a very small amount that can be allotted to fund special programs.
In response to questions, members heard that corridor funding is for undergraduate students, but includes a maximum cap for graduate students as well. Currently, McMaster has recently reached its cap for Ph.D. students, but has some room still at the Master’s level. It was noted that McMaster is continuing conversations with the Ministry on this and that there is still some room for research students at the Ph.D. level. The cap was based on a total number of Weighted Grant Units (WGUs), set at 57,000, and with a certain number of those marked for Ph.D. and for Master’s students. There was some negotiation and the Ministry allotted McMaster some extra WGUs. The first SMA was about the approval of new programs, which allowed for some growth. However, if enrolment grows beyond the cap, no additional WGUs will be allotted and funding will be from tuition alone. Further discussion on this began this morning at Provost’s Council.

Undergraduate international student growth is targeted at 20% and there will be discussions across campus to determine how best to accomplish this. The head tax for international students will be for all students except those studying at the Ph.D. level.

IV BUDGET MODEL REVIEW

Dr. Wilkinson joined the meeting.

The Chair thanked David Wilkinson and the Budget Committee, who have reviewed the Budget Model Review Report, for their work in getting the new budget model in place. It was a difficult process and the Report reflects that strain, to the detriment of the work of the Budget Committee. Dr. Wilkinson is available to respond to questions about the review report.

A member disagreed with the Report’s suggestion that the supplements that are in place now should be in place in the future. The deans had to do a lot of hard work in good faith to meet the targets and it would be disappointing if supplements were to be continued.

Members discussed the allocation of research funds. Members heard that it is often the opinion that funding for research, which can cost a lot but may not generate a lot of money, should come from the Vice-President (Research). It was agreed that funding for research should first come from allocations to the Faculty rather than from the Vice-President (Research). In the case of interdisciplinary projects, researchers should approach the deans first and not just in their own Faculty. It was noted that there is also a misunderstanding that the new budget model hurts research, which is not the case. The same amount of money is available, but under the new model it is simply put into different hands. It was also suggested that there needs to be a collective plan put in place to address, for example, payment for use of equipment by industry users. There are lots of stories related to duplication of implementation and of equipment being unused; the nuclear reactor is a perfect example. Members were cautioned, however, that this is more related to discretionary funding than to research funding.

V REPORT FROM UNDERGRADUATE COUNCIL (Appendix A)

i. Report from the Committee on Programming in the Arts and Science Faculties (PASF)

ii. Report from the Undergraduate Council Ad Hoc Committee on Academic Structures for Student Success (CASS)

Ms Thyret-Kidd joined the meeting.
These two items were discussed together. Dr. Searls Giroux referred members to the covering report, which thoroughly outlines the various recommendations of the two Committees. She noted, however, that the Joint Arts and Science Council (JASC) met earlier this month to discuss some concerns related to the workload of the Faculty Offices and of some of the individuals involved in some of the initiatives recommended by one or both Committees.

In response to a recommendation from JASC, Undergraduate Council has decided to pause the work of the Undergraduate Council Ad Hoc Committee on a Major and Two Minors Pathway, which was struck and began meeting in September. Some other resource issues must be addressed and build work in Mosaic need to be completed to address other initiatives, existing workarounds and so on. The decision to pause the work of the Ad Hoc Committee will be reviewed by the end of April 2018.

Dr. Wilkinson said that there had initially been some concern that two committees with deeply overlapping mandates had been struck, but the process worked well. Some recommendations from the Committee on Programming in the Arts and Science Faculties (PASF) were passed on to the Undergraduate Council Ad Hoc Committee on Academic Programming for Student Success (CASS) to look into further. In order to understand the full scope of the initiatives, it is important to see the two reports together. Some of the initiatives have implications for Mosaic that will be a lot of work. Other initiatives are quite large, such as the introduction of a major and two minors pathway, and will require significant work to put in place. Still others are simpler fixes that will have a big impact, such as the introduction of a credit/no credit course option.

In response to questions, members heard that CASS spent a lot of time talking about the early feedback regulation. The current policy requires that instructors must provide feedback on 10% of the work used to determine the final grade. For upper level courses, it may be difficult to provide more feedback as these may be seminar or other kinds of courses for which this kind of graded feedback might not be possible. However, students in Level I and II courses are likely still finding their way in undergraduate studies and will need to have a certain level of feedback. The decision to set the early feedback requirement at 20% was arbitrary, but members felt that this was an achievable goal and agreed that the actual percentage is not as important as instructors giving feedback that enables the students to really know how they are doing in the course.

A member asked why the recommendation to introduce concurrent certificates was not taken up and why there was also no discussion about revenue-generating certificate programs, given that there tend to be a lot of people who will pay for flexibility. The Committee heard that the recommendation was not taken up because the initiative was already in place by the time the report was released. Another ad hoc committee of Undergraduate Council had already been working with a mandate to revise the Policy on Certificates and Diplomas and the creation of concurrent certificates was part of that mandate. The new Senate Policy on Diplomas and Certificates was approved by Senate in May 2017. Categories for revenue-generating certificate and diploma programs already exist in the policy.

A member asked if opening seats in courses would be viewed as service teaching and if it will create friction in the Faculties. Dr. Searls Giroux said she has not heard anything to that effect. The Faculties have not yet done the work to open seats, but this concern may be part of the discussion as this plays out. To date the concern has been about resources and how it might work if the demand requires additional sections to be opened. While it is
likely that faculty members will want to be teaching students who will readily understand the material, but on the other hand, a diversity of experience within a class is a positive thing. A member expressed concern that students will not be prepared for courses if seats are opened up. However, it was pointed out that prerequisites are often used to control seats and to hold them only for those desired students in the ‘right’ program. There is currently no way to assess demand for courses, which is why there is a recommendation to turn on the ‘waitlist’ function in Mosaic. There are ways to open additional sections in some courses in high demand. It is important to look at all the ways in which flexibility for students can be achieved.

In response to questions about regulations for examinations (such as the regulation about a student having three scheduled exams in a 24-hour period), members heard that neither PASF nor CASS looked at regulations related to examinations as this, with the exception of deferred examinations, was outside both mandates. Undergraduate Council has agreed to strike an ad hoc committee to review deferred examinations, but other examination regulations will likely be beyond the scope of that ad hoc committee as well. Dr. Searls Giroux noted, however, that this is part of a longer ongoing conversation about the nature and purpose of final examinations. If instructors were to move away from final examinations, this would solve this type of problem.

Dr. Wilkinson and Ms Thyret-Kidd left the meeting.

VI OTHER BUSINESS

There was no other business in the open session of the meeting.
To: University Planning Committee

From: Christina Bryce
Assistant Graduate Secretary

At its meeting on December 5th, 2017, Graduate Council approved the proposed M.Sc. in Psychotherapy Program.

The attached document, pertaining to the proposed program, is now forwarded for approval to the University Planning Committee for its meeting on January 17th, 2018.
NEW PROGRAM PROPOSAL FOR
MASTER OF SCIENCE IN
PSYCHOTHERAPY

DATE: November 2017
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1 PROGRAM

1.1 PROGRAM DESCRIPTION

This is a proposal for a Master of Science (MSc) in Psychotherapy to be offered by Clinical Behavioural Studies (CBS) in the Department of Psychiatry and Behavioural Neurosciences, Faculty of Health Sciences, McMaster University.

The MSc in Psychotherapy will be a professional, course-based degree that will include several experiential training opportunities to prepare students for a career as psychotherapy practitioner. The focus of the MSc will be to provide students with a solid understanding of and competency in the delivery of evidence-based psychotherapies for a range of mental health disorders and related problems. During the completion of coursework and clinical practicum placements, students will also be exposed to opportunities to acquire and demonstrate effective communication, critical thinking and problem-solving skills. Overall, the aim of the MSc in Psychotherapy Program is to offer students an academic and clinical learning experience that includes theoretical knowledge of mental health disorders and evidence-based psychotherapies and applied clinical skill development with direct supervision, in order to prepare them for a career as an independent psychotherapy practitioner.

The MSc in Psychotherapy will be 20-months in duration and it is anticipated that most students will complete the program full-time. All students in the MSc in Psychotherapy will complete 11 courses, including 7 core required courses, 2 elective courses and 2 clinical practicum courses. Courses in the first year of the MSc will offer students an introduction to theoretical models for understanding mental illness and to various evidence-based psychotherapies. In advanced courses and while on clinical practica, students will be exposed to higher-level concepts and applied training opportunities to develop greater clinical competency in specific psychotherapies. It is expected that the majority of graduates from the program will register with the College of Registered Psychotherapists of Ontario (CRPO), as it is required that all practitioners performing the controlled act of psychotherapy be regulated through the CRPO (if not already a member of another regulated health profession).

The required core courses will cover introductory concepts as well as advanced training in psychotherapy theory, research, and applied clinical skills. The elective courses will offer students with depth and breadth of training opportunities. Finally, the practicum courses will provide students with the opportunity to apply and demonstrate their skills in a clinical setting and receive ongoing support from a clinical practicum supervisor who: is a member of a regulated health profession; has extensive clinical experience in the practice of psychotherapy; and is competent to provide clinical supervision (as per the clinical supervision requirements set by the CRPO). Students will also be enrolled in a small-group, tutorial-based, Applied Psychotherapy Skills course that will focus on experiential clinical skills training. Throughout the program, students will be encouraged to identify self-directed learning opportunities (through leading class discussions, reflection papers, written assignments, practicum placements) that will offer them greater depth in an area of interest. In addition, a component of the practicum courses will be the completion of an integrative paper, which will require students to complete a theoretical paper on a topic related to their current clinical practicum experience. Thus, the goal is for students to develop a solid theoretical foundation that will form the base of their evidence-based clinical practice.
It is the ideal time for the development of the MSc in Psychotherapy. First, there is a significant need for well-trained practitioners who are competent to provide evidence-based psychotherapies. Over 2 million Ontarians are affected by mental illness each year, and over a third of these individuals report receiving insufficient support (Canadian Community Health Survey, Ministry of Health and Long-Term Care, Statistics Canada, 2012). In the 2017 budget, the Ontario Government included funding of $73 million over three years to provide greater access to publicly-funded structured psychotherapy for individual suffering with mental illness (Section A: Strengthening Health Care, Ontario Budget, 2017). Students completing the MSc in Psychotherapy will have the specialized training required to provide structured, evidence-based psychotherapy, which is in high demand.

Secondly, legislative changes have increased the education and regulatory requirements for practitioners performing psychotherapy. The Psychotherapy Act, 2007 requires that all individuals practicing psychotherapy within the province of Ontario, and who are not members of a regulated profession (e.g., nurse, psychologist, social worker, occupational therapist, physician), register with the newly formed CRPO and use the designation of Psychotherapist. The CRPO has specific education requirements, including the completion of Master’s-degree level training. In addition, under the Regulated Health Professions Act, 1991, Psychotherapy was identified as a “controlled act,” which may only be performed by regulated health professionals who are members of a health college whose members are permitted to perform psychotherapy. This section of the Regulated Health Professions Act (RHPA) is anticipated to be proclaimed in December 2017. Once proclaimed, it is proposed that only five regulated health-related professions, including psychotherapists, will be able to provide the controlled act of psychotherapy. Thus, the MSc in Psychotherapy has been designed to provide students with the necessary training to meet the education requirements set by the CRPO (http://www.crpo.ca), and by two additional competency bodies in Canada: the Canadian Counselling and Psychotherapy Association (CCPA; https://www.ccpa-accp.ca) and the Canadian Association of Cognitive and Behavioural Therapies (CACBT; http://www.cacbt.ca/en/index.htm).

Moreover, under the new legislation, clinicians who currently practice psychotherapy (as defined by the RHPA), but do not have the training requirements needed to become registered with the CRPO, will be required to complete additional education and/or supervised practice. In addition, psychotherapy is not an entry-to-practice competency for all of the regulated health professions (e.g., nursing, social worker, occupational therapy, physicians); therefore, unless offered in during their post-professional education, these professionals will require additional education, training and supervision should they wish to perform the controlled act of psychotherapy. Thus, the MSc in Psychotherapy may also meet the training needs of these individuals.

Thirdly, the MSc in Psychotherapy will meet a training demand that is not currently offered by McMaster University and or met by existing CBS Graduate Diploma Program provided by the Department of Psychiatry & Behavioural Neurosciences. The CBS Graduate Diploma provides post-professional education to persons who have completed basic training in healthcare or health-related disciplines (e.g., nursing, social work, occupational therapy) and who are looking for additional mental health-related training. The aim of the Graduate Diploma is to offer a brief, specialized training experience (e.g., a specialized focus in cognitive behavioural therapy) to professionals in a health-related profession. Therefore, the aims of the Graduate Diploma are distinct from the MSc in Psychotherapy. It is anticipated

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1 https://www.ontario.ca/laws/statute/07p10
2 https://www.ontario.ca/laws/statute/91r18
3 http://www.crpo.ca/controlled-act-of-psychotherapy/
that the demand for the Graduate Diploma will remain once the MSc in Psychotherapy commences, as many healthcare professionals who may be interested in additional training in evidence-based psychotherapies may not wish to or be required to complete a Master’s degree. As the MSc is developed, the curriculum for the Graduate Diploma will also be updated to better align with the MSc in Psychotherapy curriculum. The alignment of the courses across the two programs, will allow students who complete courses in the Graduate Diploma Program to use credits from the Diploma program towards fulfillment of the MSc in Psychotherapy Program should they wish to apply to transfer to the MSc program.

The proposed MSc in Psychotherapy will build upon foundation courses in the CBS Graduate Diploma and its existing resources, infrastructure and faculty to provide graduate-level training in psychotherapy. It is anticipated that the majority of students enrolled in the MSc will have no formal healthcare training or professional designation. However, the program will also be open to students who have a healthcare qualification and who wish to complete an MSc in psychotherapy, which will offer greater depth and breadth of training, and more clinical practice experience than the Graduate Diploma.

In summary, the MSc in Psychotherapy Program will be structured as a course-based, professional degree that includes in-class lectures, tutorials and experiential training components. It is anticipated that the program will offer a unique training experience that will help to fill the ever-increasing need in our community for well-trained and knowledgeable professionals who are skilled in the delivery of evidence-based psychotherapies for serious mental health disorders and related problems.

1.2 PROPOSAL PREPARATION AND CONSULTATION PROCESS

Internal Collaborators

A proposal committee was established during the initial stages of the program development that consisted of the Chair and Associate Chair Education of the Department of Psychiatry and Behavioural Neurosciences and the CBS Director and CBS Program Coordinator.

During a retreat in September 2016, key members of the CBS Program (CBS Graduate Diploma Study Area Leads, Instructors, former CBS Director, members of the CBS Graduate Diploma Steering Committee) met with the Planning Group to discuss the development of the MSc in Psychotherapy. Objectives and aims for the degree were established and used to guide the MSc Program’s development. After an initial draft of the proposal was completed, the proposal was sent to members of the steering committee for review and comments.

External Collaborators

The proposal committee consulted with members of the McMaster community who are involved in other health-related Master’s programs, including the Associate Deans and Program Directors from the Schools of Nursing and Rehabilitation Sciences and the Child Life and Pediatric Psychosocial Care Program. In addition, the committee consulted with program leads at St. Joseph’s Healthcare Hamilton and Hamilton Health Sciences regarding the degree requirements as well as opportunities for practicum placements for students in the MSc.
To ensure that the MSc in Psychotherapy program will meet professional accreditation standards and that graduates will be able to become registered with a regulatory body in Ontario, we referred to the CRPO’s Evaluation Criteria for Psychotherapy Education and Training Programs.

Finally, we sought feedback from current students and recent graduates of the CBS Graduate Diploma Program to determine the level of demand for an MSc in Psychotherapy.

1.3 CONSISTENCY WITH MCMASTER’S MISSION AND ACADEMIC PLAN

i. McMaster’s Strategic Mandate Agreement:

Existing Strengths

| ✔ | Medical Education and Research |
| ✔ | Health and Society            |
| ✔ | Engineering and Sustainability|
| ✔ | Science and Discovery         |
|   | Digital Economy               |
|   | Materials and Manufacturing   |
|   | Business and Economics        |
|   | Policy and Ethics in a Globalized World |
| ✔ | Human Behaviour, Culture and Society |
|   | The Arts and Creative Expression |

The MSc in Psychotherapy aligns strongly with several areas of McMaster’s mission and academic plan and existing strengths, including (i) Medical Education and Research, (ii) Health and Society, (iii) Science and Discovery, and (iv) Human Behaviour, Culture and Society.

The MSc in Psychotherapy is designed to educate students in empirically-supported therapy as a part of their professional practice, which maps onto existing strengths in the Strategic Mandate Agreement (i.e., medical education and research; health and society). Students in this MSc program will develop specialized skills and knowledge that will prepare them for success in health professions.

In addition, the MSc in Psychotherapy Program closely aligns with McMaster’s goal of providing professional and practice-focused graduate degrees that prepare graduates for professional licensure and to assume clinical positions that meet the needs of the community. The program offers students’ significant opportunities for experiential learning via course work and clinical practicum placements, which is consistent with the Ministry’s support of experiential learning opportunities for students. Thus, the MSc in Psychotherapy Program will provide graduate students with advanced skills and competency in the theory and practice of psychotherapy via coursework and clinical training to better meet societal and healthcare needs.

Consistent with the university’s strength in Science and Discovery, the MSc in Psychotherapy Program emphasizes the need for its graduates to gain expertise in consuming health-related literature and critically appraising the quality of the research as this will inform their evidence-based practice during clinical practica and future clinical work. Although there is not a formal research component to the program, all students will be required to demonstrate their knowledge of clinical research methods across various course requirements, such as in the writing of case studies, which requires the inclusion of relevant
research and theory to inform their case conceptualizations; in the use of validated self-report questionnaires to measure treatment outcomes; and in their ability to conduct a program evaluation. Moreover, across their courses and during clinical work, students will have multiple opportunities to demonstrate and apply their theoretical and research knowledge when completing written assignments and selecting appropriate therapeutic skills in clinical practice.

**Priorities for Growth**

| ✔️ | Health Sciences and the Broad Determinants of Health |
| ✔️ | Fostering Robust Societies |
| ✔️ | Business and Economics |
| ✔️ | Science and Engineering |
| ✔️ | Communications and Culture |

Regarding the priorities for areas of growth as outlined by McMaster’s Strategy Mandate Agreement, the MSc in Psychotherapy will foster growth in the following areas: (i) Health Sciences and the broad determinants of health, (ii) Fostering robust societies, and (iii) Communications and culture.

Related to *Health Sciences and the Broad Determinants of Health*, the MSc in Psychotherapy will help students gain an interdisciplinary perspective on contemporary issues in health and society from coursework and clinical practice. Collaboration across health-related disciplines and awareness of interdisciplinary perspectives on contemporary issues in health and society will be a fundamental component of the MSc program.

The MSc program will also encourage growth in the area of *Fostering Robust Societies*. One in 5 Canadians experience mental health problems or illness, which is associated with an economic burden of 50 billion dollars. Currently, there are significant wait times for effective mental health treatment creating a significant societal need for well-trained mental health practitioners. An MSc in Psychotherapy Program will help Ontario meet current and future needs for appropriately trained practitioners by providing students with the necessary training for regulated professional practice.

Finally, in the priority area of *Communications and Culture*, the MSc in Psychotherapy Program will teach students advanced communication skills to enable them to communicate effectively with their clients and coworkers, which will be essential in their professional careers. In addition, students will have the opportunity to work with individuals from diverse cultural, social and ethnic backgrounds.

**ii. McMaster’s current priorities:**

**Alignment with Forward with Integrity**

The MSc in Psychotherapy will offer a professional and practice-focused degree that aligns well with each of the four priorities outlined in the *Forward with Integrity* letter, including The Student Experience, Community Engagement, Research, and Internationalization. The primary objective of the MSc in Psychotherapy Program is to provide students with advanced skills and competencies in the theory and practice of psychotherapy via coursework and applied training experiences.

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First, related to *The Student Experience*, the MSc in Psychotherapy Program is committed to fostering competency in clinical skills through integrated theoretical and applied learning. The philosophy of the MSc in Psychotherapy Program emphasizes:

- Development of a theoretical knowledge in the assessment and treatment of mental health issues
- Opportunities to apply theoretical knowledge developed from course work in clinical settings

The problem-based learning format is foundational to the coursework and promotes the development of skills in critical thinking, problem solving, self-directed learning, communication and team participation. The course structure is designed to match the needs of students; introductory courses provide foundational skills that can then be applied to practical experiences in clinical settings. The students entering the program will come from diverse backgrounds with a range of perspectives, which will make for an enriched learning experience, while appreciating different viewpoints also prepares students for work as a member of an inter-professional team.

Second, there is a strong emphasis on *Community Engagement* in the program, which will develop strong relationships with community agencies that offer mental health treatments. Students in the MSc in Psychotherapy Program will complete practicum placements within community settings (e.g., hospital clinics, family health teams, student counselling clinics). In this way, the students will also be providing ongoing support to the community during their graduate studies. Additionally, the MSc program’s graduate students and graduates will bring knowledge to community organizations and will provide evidence-based therapy within our communities.

Third, the MSc program will help the students to become self-directed learners and reflective practitioners. Students will learn to appraise the quality of research findings and they will also learn how to integrate evidence-based strategies into their clinical practice. Students will also learn to measure and evaluate the impact and outcome of their therapeutic approaches to optimize treatment gains experienced by their clients as a component of their evidence-based practice. Many of the faculty have expertise in clinical research and will incorporate contemporary empirical findings in their course material.

Finally, the MSc program will encourage the incorporation of *Internationalization* in course work and practical training experiences. Students will receive training in cultural competency, which is a necessity for treating diverse patient groups. For example, in course work, students will discuss the role of diversity in mental health, which they can then apply when working with individuals from diverse cultural, social, and ethnic backgrounds in their practical training experiences.
1.4 PROGRAM LEARNING OUTCOMES

The MSc in Psychotherapy Program Learning Outcomes (PLOs) encompass the main competencies that successful graduates from the program will acquire via course work and clinical practicum. By the end of the program, students will be able to:

Theoretical Knowledge
1. Demonstrate and apply knowledge of key theoretical models of mental illness and wellness, including understanding the role of human development, physical health, and sociocultural factors, in their professional practice.

2. Demonstrate knowledge of the theory and research support for evidence-based psychotherapies in the treatment of mental health disorders.

Therapeutic Skills
3. Demonstrate the competency to conduct clinical assessments, formulate case conceptualizations and develop treatment plans for a range of clinical presentations.

4. Engage in effective and competent clinical practice, which is demonstrated through the proficient use of evidence-based psychotherapies, ability to form therapeutic rapport, and effective communication with patients or clients.

Self-Awareness and Professional Standards of Conduct and Ethics
5. Demonstrate and integrate knowledge of professional standards of practice and ethical conduct in clinical practice.

6. Accurately appraise personal levels of clinical competence and identify areas for professional growth and self-directed learning.

Critical Thinking and Problem-Solving Skills
7. Use critical thinking skills to identify and solve complex problems and to appraise the success of the solutions employed.

8. Exhibit the ability to identify and make improvements in the delivery of patient or client care.

Communication Skills
9. Engage in effective written and oral communication skills with patients and other healthcare providers.

Research Knowledge and Skills
10. Demonstrate an understanding of clinical research methods, including the ability to critically evaluate the validity of clinical theories and research findings and the ability to conceptualize and develop a research study.

11. Integrate and apply knowledge of clinically-relevant research findings in clinical practice, including the selection of appropriate evidence-based therapies, and measuring and evaluating clinical outcomes.
1.5 **CONSISTENCY WITH DEGREE LEVEL EXPECTATIONS**

Graduate Degree Level Expectations

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

The table below indicates how the Program Learning Outcomes align with the Degree Level Expectations:

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1.6 **DEMAND FOR PROGRAM**

1.6.1 **EVIDENCE OF SOCIETAL / LABOUR MARKET NEED**

There is a significant need for training programs that assist in the development of well-trained and effective mental healthcare workers with psychotherapy skills for a number of reasons:

i. The level of demand for mental health services provincially and nationally is outpacing the capacity of available services to meet it.
There is interest from the Government of Canada – as part of the proposed new Health Accord – and from the Government of Ontario to increase access to evidence-based psychotherapy for people with mental health problems being seen in medical and other community settings. In addition, representatives of the newly established CRPO and of the CACBT have identified the need for greater training programs that adequately prepare practitioners to meet the demands of practice and their registration and credentialing requirements. In addition, the Ontario Ministry of Health and Long Term care has recently established a working group to make recommendations for the Implementation of a Structured Psychotherapy Program in Ontario, and the Chair of the Department, who is also part of the CBS Faculty, is a member of this working group.

Finally, there is an increasing expectation that all health care professionals gain a working knowledge of mental health-related problems that they can integrate with other aspects of their clinical work. For some, comprehensive training provided by a Master’s degree program is needed to adequately prepare for clinical practice that includes psychotherapy. We therefore anticipate that some health care professionals, such as nurses, social workers, physicians, and occupational therapists, will be interested in completing the MSc in Psychotherapy Program for additional competencies to enhance their practice.

The MSc in Psychotherapy Program aims to address these needs by providing students with advanced training in evidenced-based therapies that can be utilized in many different clinical settings and with various populations including individuals with serious mental health disorders and related problems.

1.6.2 Evidence of Student Demand

The student demand for courses where clinical skills are being developed and where some level of expertise is acquired in a theoretical treatment modality has traditionally been high. Specifically, demand for Master’s-level training in counselling and psychotherapy is strong. For example, the Master of Education in Counselling and Psychotherapy offered by the University of Toronto/OISE reported that in 2015 it received 3625 applicants for 32 spots in the program. As the Department has received several inquiries about the development of a MSc in Psychotherapy, we anticipate equivalent demand for the Master’s Degree.

Moreover, evidence from our contacts with key stakeholders, including other Master’s programs at McMaster University, and Community partners who support their employees’ participation in CBS Graduate Diploma Program suggests that there will also be strong demand for the MSc in Psychotherapy Program once it is established. The agencies and organizations report that they are keen to see their employees gain this level of training. In a recent survey of students in the CBS Graduate Diploma Program, many identified an interest in obtaining Master’s-level education in Psychotherapy (see Appendix A). Given the duration and training requirements of the MSc, it is anticipated that the Graduate Diploma will be in continued demand for those students who do not require the depth of training offered by the MSc.

5 http://www.ro.oise.utoronto.ca/R_AppStat1.pdf
In addition, although psychotherapy can be practiced by individuals registered with the CRPO, or one of the other 4 recognized colleges (i.e., psychologists, nurses, occupational therapists, and physicians), it is only those with demonstrated competency to provide psychotherapy who will be able to perform the controlled act of psychotherapy once proclaimed. Therefore, individuals who have not received formal training in psychotherapy may be interested in completing the MSc in Psychotherapy to gain this required competency. It is anticipated that a significant number of community practitioners will look for additional opportunities to complete the required level of training and may register with the program. MSc courses will be open as post-degree courses; however, this will be limited to two courses per person. If an individual wishes to take additional courses they will be required to register in the CBS Graduate Diploma or in the MSc in Psychotherapy.

1.6.3 **JUSTIFIABLE DUPLICATION**

The proposed MSc in Psychotherapy is a unique graduate degree offering. There are 5 programs in Ontario that offer Master’s of Arts, Education or Divinity in Counselling Psychology and are recognized by the CRPO (see Table 1). The content of the MSc in Psychotherapy will be distinct from that of a Master’s in Counselling Psychology, as often the focus is on vocational counselling and wellness. The proposed MSc in Psychotherapy will provide students with foundational knowledge in evidence-based psychotherapy for the treatment of mental illness and in the practical clinical skills that are needed to become an independent clinical practitioner that provides psychotherapy. Moreover, it will also be the only psychotherapy-related program based in a Faculty of Health Sciences.

**Table 1. Master’s Degree Programs Recognized by the CRPO**

<table>
<thead>
<tr>
<th>University</th>
<th>Degree</th>
<th>Area of Specialization</th>
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<tbody>
<tr>
<td>Tyndale University College and Seminary, Graduate School of Theology</td>
<td>Master of Divinity</td>
<td>Clinical Counselling</td>
</tr>
<tr>
<td>University of Guelph, Department of Family Relations &amp; Applied Nutrition</td>
<td>Master of Science in Couples and Family Therapy</td>
<td>Couples and Family Therapy</td>
</tr>
<tr>
<td>University of Toronto/ Ontario Institute for Studies In Education</td>
<td>Master of Education in Counselling and Psychotherapy</td>
<td>Counselling Psychology</td>
</tr>
<tr>
<td>Western University, Faculty of Education</td>
<td>Master of Arts in Counselling Psychology</td>
<td>Counselling Psychology</td>
</tr>
<tr>
<td>Yorkville University</td>
<td>Master of Arts in Counselling Psychology</td>
<td>Counselling Psychology (online course offerings)</td>
</tr>
</tbody>
</table>

In addition, there are 5 training programs that offer either a Diploma or Certificate of Completion in a field related to psychotherapy and are recognized by the CRPO. Most of these training programs offer a specific in-depth training experience in a specific type of psychotherapy (i.e., psychodynamic psychotherapy), which will not be the main focus of the MSc in Psychotherapy program. Therefore, none
of these training programs will significantly overlap with the content of the MSc in Psychotherapy. The programs include:

- Canadian Institute for Child and Adolescent Psychoanalytic Psychotherapy – Diploma for Child and Adolescent Psychoanalytic Psychotherapist
- Gestalt Institute of Toronto (5 year training program)
- Ontario Psychotherapy and Counselling Program – Diploma in Psychotherapy with focus on Psychodynamic Therapy
- Toronto Institute of Psychoanalysis – Certificate of Graduation as a Psychoanalyst
- Toronto Institute for Relational Psychotherapy – Diploma, Toronto Institute for Relational Psychotherapy

Within McMaster University, none of the current graduate programs overlap significantly with the curriculum for the MSc in Psychotherapy. The closest comparison to the MSc in Psychotherapy is the Research and Clinical Training (RCT) Stream offered by Psychology Graduate Program in the Department of Psychology, Neuroscience & Behaviour. The RCT Stream only offers a 4-year Doctorate of Philosophy (PhD) degree and does not offer terminal Master's-level training. Unlike the MSc in Psychotherapy, which is a course-based Master’s degree, the PhD in Clinical Psychology has a significant research component, including the completion of a dissertation. In addition, graduates from the RCT Program would ultimately register with the College of Psychologists of Ontario.

The Master of Social Work (MSW) program has limited overlap with the MSc in Psychotherapy given that the content of the courses is distinct. The MSW is focused on social work practices and social policies and does not include formal training in mental health-related topics or psychotherapy. Moreover, it is anticipated that students enrolled in the MSW may be interested in taking courses in the MSc to fulfill their training in mental health-related topics. Currently, there is one student enrolled in a CBS Graduate Diploma course to fulfill an elective course requirement for their MSW. In addition, there are several Registered Social Workers currently enrolled in the CBS Graduate Diploma Program to obtain additional training in mental health-related topics.

The CBS Graduate Diploma Program has also received requests from other health-related Master’s programs at McMaster University, including nursing, for their students to take one or more CBS Graduate Diploma courses. Thus, students who wish to complete courses on a mental health topic or evidence-based psychotherapy that are not offered by their program of study may be interested in completing courses through the MSc in Psychotherapy.

1.7 **DEGREE NOMENCLATURE**

Master of Science (MSc) in Psychotherapy is the most appropriate degree nomenclature for a graduate program that provides the opportunity for students to acquire theoretical knowledge and advanced skills in the provision of therapy to individuals with a range of mental health disorders and related problems. The MSc program requires that students become proficient in evidence-based psychotherapies, including cognitive behavioural therapy. Students will also be required to understand and critically evaluate psychotherapy research and select and apply specific clinical skills based on their theoretical understanding and case formulation. The educational plans for the MSc in Psychotherapy have the rigor required to meet the degree level expectations of a Master’s program.
The inclusion of the identifier Psychotherapy in the name implicitly explains the overall content and learning objectives. That is, the program and its courses are rooted in the theories of mental health-related conditions and associated evidence-based psychotherapies.

2 ADMISSION & ENROLLMENT

2.1 ADMISSION REQUIREMENTS

Admission selections will be based on academic achievement as well as personal qualities and experiences that are evaluated during the Admissions Interview. The admissions criteria include:

a. Honours Bachelor’s degree in Psychology, Social Sciences or Health Sciences from a recognized university with at least a B+ average (equivalent to a McMaster 8.5 GPA out of 12) in the final year of study. This requirement is consistent with the Faculty of Graduate Studies’ admissions requirements.

b. For applicants whose first language is not English and who did not attend an English-speaking University for their undergraduate degree, a test of English language proficiency is required. Minimal scores on the Test of English as a Foreign Language (TOEFL) are: written score (600) or computer (250), or internet-based test (iBT = 92; reading = 22, speaking = 24, listening = 24 and writing = 22).

c. Applicants will also be asked to submit the following documents with their application
   i. Curriculum Vitae.
   ii. A letter of application outlining their reasons for wishing to join the program.
   iii. Two letters of reference: At least one from academic referee (i.e., professors or research supervisors). One letter may be from a professional referee (i.e., employer who can provide a professional reference).
   iv. Official transcripts from every degree-granting institution attended.

Admissions Interview

The admissions committee will review every application to the program to ensure that prospective students have the necessary academic background, proficiency in English, and relevant experience to enroll in the Psychotherapy Program. Those students who are short-listed based on this review will be offered an interview. Interviews will be conducted in person or over the telephone.

2.2 ENROLMENT PLANNING AND ALLOCATIONS

<table>
<thead>
<tr>
<th>Program Year</th>
<th>2019-20</th>
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<th>2021-22</th>
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<tr>
<td>Year 2</td>
<td></td>
<td>30</td>
<td>32</td>
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<tr>
<td>Total Enrolment</td>
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<td>62</td>
<td>64</td>
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</table>
2.3 ALTERNATIVE REQUIREMENTS

As stated in the School of Graduate Studies Calendar, some potential applicants may not satisfy the admission requirements for a 4-year honours undergraduate degree with a B+ average in the final year. However, work experience and/or completed course work beyond the Bachelor’s degree, may have some bearing on the applicant’s ability to complete a graduate program.

Admission to graduate studies for a student with related work experience will be based on the following criteria, as well as the standard admissions requirements, including the submission of a Curriculum Vitae and Official transcripts from every degree-granting institution attended:

1. At least 2 professional references (i.e., employer who can provide a professional reference).
2. 4-year undergraduate degree or equivalent completed more than 4 years ago, and any other course work taken since that time.
3. Work experience that has relevance to the MSc in Psychotherapy Program.

Should students meet these admissions requirements and be short-listed during the review of applications, they will also be required to attend an interview.

In addition, as the program is interested in recruiting a full spectrum of students, the program will follow the Faculty of Health Science’s Facilitated Indigenous Admissions Policy.

3 STRUCTURE

3.1 ADMINISTRATIVE, GOVERNANCE AND COMMUNICATION

The MSc in Psychotherapy will be offered through the Department of Psychiatry and Behavioural Neurosciences. The MSc in Psychotherapy Program will have a Program Director (i.e., equivalent to the Assistant Deans in other FHS programs). The Program Director will be responsible for activities related to the delivery of the program (e.g., recruiting and monitoring faculty performance, assessing student eligibility at the entry level, monitoring student progress, and providing operating support). The Program Director will report to the Department Chair and to the Associate Dean of Graduate Studies for the Faculty of Health Sciences. Within the FHS, the Program Director will be a voting member of the Health Sciences Education Council and the Graduate Programs Curriculum Committee, which is a committee that manages matters related to policies and curriculum affecting graduate programs in the Faculty of Health Sciences.

The MSc in Psychotherapy Academic Study Committee will formulate and recommend policies and will oversee student progress in the program. The Director of the MSc in Psychotherapy Program will serve as the Chair of the Academic Study Committee. The Committee will include Health Sciences faculty members and a current student from the MSc in Psychotherapy Program. The Academic Study Committee will meet a minimum of four times a year to manage the business of the program. New members of the Committee are nominated by the existing Committee and appointed for three-year terms, with the option to renew. It is likely that the structure of the Academic Study Committee will change as the program evolves. The responsibilities of the Academic Study Committee include:

- Strategic planning for future directions for the program
- Assisting the Director in the formulation of all policies and procedures for the program
• Identifying changing community needs and expectations
• Identifying new course areas to meet student needs and assisting in their development and evaluation
• Recommending faculty for vacant teaching roles
• Preparing publicity and calendar material when needed
• Developing and monitoring the use of course evaluation forms
• Recommending and evaluating changes to the program
• Conducting regular formal evaluations of the program
• Assigning faculty advisors to program students
• Developing an integrative curriculum and ensuring ongoing alignment of the courses for the MSc in Psychotherapy and CBS Graduate Diploma Programs
• Supporting special workshops/presentations for faculty development, students and target agencies

There will also be two sub-committees of the Academic Study Committee: Admissions Committee and Curriculum Committee. For terms of reference for both sub-committees see Appendix B).

3.2 STRUCTURE AND REGULATION

The MSc in Psychotherapy will be a 20-month full-time, course-based program. The curriculum is designed to align with the principles of problem-based, self-directed and experiential learning. The courses are structured so that students are required to complete a set of 7 core courses that offer the necessary competencies in psychotherapy. In addition, students will choose 2 elective courses from available offerings. The elective courses will cover advanced psychotherapy topics, such as psychodynamic psychotherapy, mindfulness-based therapy, group therapy, and will provide students with a wider breadth of training. All courses will be designed to ensure that the content is consistent with the Program Learning Outcomes and Degree Level Expectations.

Students in the Psychotherapy Program are required to complete 7 core courses (i.e., 6 courses that are 3 units each and 1 course that is 6 units), 2 practicum courses (each practicum is a minimum of 400 hours and 3 units) and 2 elective courses (3 units each). Students will have up to 3 years to complete all of the degree requirements.

3.3 GRADUATE PROGRAMS - PROGRAM LENGTH

The MSc in Psychotherapy will be a full-time 20-month professional, course-based program. The length of the program is consistent with Master’s programs in health-related disciplines, including psychology, counselling, and social work, and is designed to meet the necessary education requirements set by regulatory bodies. We anticipate that majority of students will complete the program full-time, however, with special permission students will also have the option to complete the program part-time (i.e., 1 or 2 courses per term) within 4 years.

The 20-month duration of the program was chosen to provide students with sufficient time to complete the necessary courses for foundational knowledge as well as time to practice their skills in an applied setting.
4 CURRICULUM AND TEACHING

4.1 PROGRAM CONTENT

The program will require students to complete seven core courses, two elective courses and two clinical practicum placements.

- Total course hours: 360 (36 units)
- Total clinical hours across 2 practicum placements: approximately 800

Example timeline for completing the MSc in Psychotherapy

Year 1

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<thead>
<tr>
<th></th>
<th>TERM 1</th>
<th>TERM 2</th>
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<td>May - August</td>
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<tr>
<td>Courses (Required)</td>
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<tr>
<td></td>
<td>• Introduction to Mental Health and Wellness (3 units)</td>
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<td></td>
<td>• Assessment and Case Formulation (3 units)</td>
<td>• Cognitive Behavioural Therapy (3 units)</td>
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<td>• Ethical Standards and Professional Practice (3 units)</td>
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<td></td>
<td></td>
<td>• Elective (3 units) *</td>
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<tr>
<td>Practicum</td>
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<td>Practicum I (4 days/week)</td>
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Year 2

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<tr>
<td></td>
<td>September – December</td>
<td>January – April</td>
</tr>
<tr>
<td>Courses (Required)</td>
<td>• Clinical Research Methods (3 units)</td>
<td></td>
</tr>
<tr>
<td></td>
<td>• Applied Psychotherapy Skills (6 units)</td>
<td>• Elective (3 units) *</td>
</tr>
<tr>
<td>Practicum</td>
<td></td>
<td>Practicum II (2 days/week)</td>
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* Suggested term for Elective Courses, however, students can take the electives during any term of either year 1 or 2.

The following are descriptions of the courses offered by the Psychotherapy Program. Students will complete 7 core courses, 2 practicum courses, and 2 elective courses.

DESCRIPTIONS OF CORE AND PRACTICUM COURSES

The students will complete the lecture and clinical practicum courses in the following sequence. During any of the following terms students can also complete their elective courses.
Term 1 (Fall Semester - September to December)

Principles of Evidence-Based Psychotherapy (3 units)
The course will explore the theory and research related to evidence-based psychotherapies, including cognitive-behavioural therapies, psychodynamic psychotherapy, interpersonal psychotherapy, experiential and humanistic psychotherapies. Different therapeutic modalities, including individual therapy, group therapy, family therapy and couples therapy, will also be discussed. The course will also discuss the common factors that influence the effectiveness of therapy, including therapeutic alliance, specific therapist and client factors, as well as culture and diversity.

Introduction to Mental Health and Wellness (3 units)
This is a foundational course that will provide students with a theoretical overview of topics related to mental illness and health/wellness. Topics will include fundamental models for conceptualizing mental health, including the Biopsychosocial model and the Diathesis Stress Theory. Course topics will also include an introduction to health disorders and their etiology, prognosis, and epidemiology. Finally, students will explore transdiagnostic factors that influence mental health.

Assessment and Case Formulation (3 units)
The course will offer students theoretical and applied skills in the assessment of mental illness and the development of evidence-based case conceptualizations. Students will learn skills to obtain information related to individuals’ mental illness via clinical interviewing and to develop an individualized formation and treatment plan based on the data gathered. In addition, students will learn how to assess and monitor treatment outcomes.

Term 2 (Winter Semester - January to April)

Cognitive Behavioural Therapy (3 units)
The course will offer students focused training in cognitive behavioural therapy (CBT) theory and skills. The course will provide students with an overview of CBT theory, core CBT principles, and an introduction to specific CBT-based treatments for various mental health disorders and related problems.

Ethical Standards and Professional Practice (3 units)
The course will focus on providing students with an introduction to the ethical and professional issues in the practice of psychotherapy, such as professional competency, privacy and confidentiality, client-therapist boundaries. The aim is for students to learn ethical guidelines and decision making for managing ethical dilemmas. The course will cover content related to the legal requirements and ethical conduct for registered health professionals.

Term 3 (Spring/Summer – May to August)

Practicum I (3 units)
Students will complete an external clinical practicum placement in the community under the supervision of regulated health professional. It is anticipated that the student will attend their practicum placement 4 days per week for a minimum of 400 hours and complete over a single term. While completing the practicum, students will also be working on an integration paper (e.g., case study, literature review) which will be due at the end of the practicum. Clinical practicum supervisors will provide feedback on students’ clinical performance during the practicum placement.
**Term 4 (Fall Semester - September to December)**

**Clinical Research Methods (3 units)**
The aim of the course is to provide students with the knowledge and skill to review and evaluate research relevant to the field of psychotherapy. Topics will include basic research method designs, ethical issues in research, selection of appropriate assessment tools, data collection and analysis, and manuscript writing. In addition, the course will provide students with practical skills on how to evaluate psychotherapy programs.

**Term 4 AND Term 5 (Fall and Winter Semesters – September to April)**

**Applied Psychotherapy Skills (6 units)**
The course will provide training in advanced psychotherapy skills via tutorial-based classes. Students will practice a range of skills including clinical interviewing, specific strategies from evidence-based psychotherapies, managing and troubleshooting challenges to the therapeutic alliance. Skill development exercises will include reviewing audio recordings of therapy tapes, role playing in pairs and small groups, as well as reviewing treatment protocols. Students will be required to lead class discussions on psychotherapy skills. Students will be encouraged to select a topic that is relevant to their current practicum placement or is an area of interest related to their self-directed learning plan. To ensure students receive adequate supervision and assessment, the student cohort will be split into smaller sections. This course will be completed at the same time as the Clinical Practicum II course.

**Clinical Practicum II (3 units)**
Students will complete an external clinical practicum placement in the community under the supervision of a regulated health professional. The practicum will be completed over 2 terms for approximately 8 months. It is anticipated that the student will attend their practicum placement 2 days per week for a minimum of 400 hours. While completing the practicum students will also be working on an integration paper (e.g., case study, literature review) which will be due at the end of the practicum. Clinical practicum supervisors will provide feedback on students’ clinical performance during their practicum placement.

**DESCRIPTIONS OF THE ELECTIVE COURSES**

In addition to the 7 core courses and 2 practicum courses, students are required to complete 2 elective courses from those listed below. The elective courses will be offered on a rotating basis and therefore, not all elective courses will be offered each year. Students will be able to complete their elective courses during any term.

**Group Therapy (3 units)**
Group work has been demonstrated to be an effective way of providing service to clients. This course examines group work practice by exploring a range of theoretical concept, frameworks and skills. The course will focus on the development and practice of group leadership skills through lectures and the provision of opportunities for in-class, experiential learning. Students will participate in small groups to develop specific skills for effective group leadership.
Psychodynamic Psychotherapy (3 units)
This is an introductory course to key concepts in Psychodynamic Psychotherapy and the Psychotherapeutic relationship. The overall objective is for students to gain a basic understanding of key concepts and clinical techniques of psychodynamic psychotherapy, which includes the examination of the effects that early experience has in shaping who we are and impacting our interpersonal relationships. Students will become familiar with the features of conducting a psychodynamic assessment with an emphasis on the centrality of the therapeutic relationship.

Mindfulness-Based Cognitive Therapy (3 units)
Mindfulness is a non-judgmental way of paying attention in the present moment. It may reduce emotional reactivity and negative thinking, increasing resilience and enhancing the ability to choose how to respond to difficult situations. This course will focus on developing an understanding of the application of mindfulness interventions for health care populations. The emphasis will be on developing familiarity with leading and facilitating mindfulness practices. Based on Mindfulness-Based Cognitive Therapy traditions, participants will first participate in the mindfulness intervention, followed by discussion of the practice and the methodology for teaching the practice.

Motivational Interviewing (3 units)
This course will focus on understanding the theoretical underpinnings and evidence supporting the use of this integrated set of interviewing skills for clients who are ambivalent about change. Students will participate in pairs and small groups to develop and practice beginning and advanced motivational interviewing skills through discussion, case studies and practice in class.

CBT for Specific Populations (3 units)
This course will have rotating topics that vary depending on the instructor and topics of interest to the students. For example, it may focus on CBT for chronic pain, addictions, psychosis, or trauma.

Interpersonal Therapy (3 units)
Interpersonal Therapy (IPT) is a short-term contractual “here and now” focused psychotherapy that focuses the relief of depressive symptoms and the individual’s adaptation to the social and interpersonal circumstances associated with the onset of the depression. The emphasis of IPT is to facilitate restoration of the client’s previous level of functioning.

Family and Couples Therapy (3 units)
This course will offer students an introduction to theories and evidence-based interventions that emphasize improvements in couple and family functioning.

Emotion-Focused Therapy (3 units)
The aim of this course is to offer students an opportunity to gain skills in working directly with emotions in psychotherapy. The course will cover topics including emotion theory and emotion-focused strategies.

Seniors Mental Health (3 units)
This course is designed to enhance the students’ skills to communicate with and support seniors with mental health issues including emotional distress and behavioural challenges. Students will enhance their assessment skills related to seniors’ mental health conditions including symptoms, risk and treatment options and communication skills with clients and other health care providers. Students will gain
knowledge and skills related to interpersonal communication including self-awareness, therapeutic relationships, and the essential of skilled helping.

**Child and Adolescent Psychotherapy (3 units)**
The course will offer students a theoretical and clinical foundation in evidence-based interventions for children and adolescents for a range of mental health issues and presenting problems. The course will also incorporate topics related to development, diversity, and individual differences.

**Positive Psychology (3 units)**
The course will focus on the theories and principles of positive psychology. Students will learn clinical strategies related to the study and assessment of individuals’ strengths which can be incorporated into their treatment plans.

**Research Practicum (3 units)**
As an elective, students have the opportunity to become involved in a research project that is currently underway in the Department of Psychiatry and Behavioural Neurosciences.

**Special Topics in Evidence-Based Psychotherapies (3 units)**
This course will be designed to address current issues and emerging trends in psychotherapy literature. The topic will be chosen in response to needs identified by the instructor and/or students.

### 4.2 PROGRAM INNOVATION

The MSc in Psychotherapy’s curriculum will integrate and reflect McMaster’s three key educational principles of *Problem-Based Learning, Self-Directed Learning, and Small Group Learning*.

**Problem-Based Learning**
McMaster’s Problem-Based Learning Model is the basis for much of the instruction in the program. Given that this model emphasizes interaction with real-life clinical issues for experiential learning, the program is designed to emphasize learning that involves interacting with others, as well as encouraging students to engage in self-reflection to promote learning, integration, and the mastery of therapeutic skills. While completing clinical practicum placements, students will have the opportunity to directly apply their skills in clinical settings to optimize their experiential learning experiences.

The courses are designed to best meet the Program Learning Outcomes, which includes challenging students to enhance their current skill sets. Given the wide range of clinical modalities addressed in the course work, students may develop an understanding and basic introduction to several different areas or may choose to specialize by focusing on one area and delving into it in-depth, including getting supervision of their clinical work with clients/patients in a specific therapeutic modality.

**Self-Directed Learning**
Students will have the opportunity to explore their own personal learning needs while completing all components of the program. Although all students are required to complete a set of core courses, they will have ample opportunity to incorporate self-directed learning in these courses. For example, students will be required to select topics of interest when leading class discussions and when completing written assignments and final papers. Moreover, the clinical practicum and the Advanced Psychotherapy Skills
course offer a perfect example of the Self-Directed Learning model that was set out as a priority in the *Forward with Integrity* letter. In these learning opportunities, students will be encouraged to determine their learning needs, identify methods to meet their training need, and assess whether the need has been met. Overall, the program is designed to be iterative, such that students first develop foundational knowledge and skill in the first terms, and in subsequent courses students are encouraged to select learning opportunities based on their clinical interests and learning needs.

**Small Group Learning**
The classroom-based courses will provide students with small group learning opportunities. The courses incorporate group-based discussions and role plays as teaching opportunities. Students will complete different practicum placements which will offer them diverse clinical experiences, and in turn, provides a valuable learning resource as it encourages students to discuss different approaches to clinical situations.

Overall, the proposed MSc in Psychotherapy is unique in Canada and differs from existing Master’s-level programs in Psychology, Counselling, and Social Work. The program is designed to meet the specific needs of individuals who are seeking advanced training and competency in the delivery of psychotherapy as an independent practitioner. The focus of the program is to provide individuals with advanced knowledge and skill in evidence-based psychotherapies, with a specific focus on developing competency in cognitive behavioural therapy (CBT). Distinct from counselling programs that focus on providing vocational counselling and advice and from the majority of psychology graduate programs that have a significant research component, the MSc in Psychotherapy will emphasize foundational training in theories of mental illness and psychotherapies. The MSc will also offer several experiential learning opportunities to practice applied skills to ensure that a student exits the program with the competency to practice independently. Finally, the self-directed learning requirements will ensure that students are able to identify and continue to direct their professional development throughout their careers.

4.3 **MODE(S) OF DELIVERY**

The MSc in Psychotherapy will offer students a variety of learning activities via courses and practicum learning opportunities.

Learning opportunities across the **Core and Elective Courses** include:
- Written article critiques, reflection papers
- Role play of therapy skills in pairs and small groups
- Analysis of pre-recorded therapy sessions
- Formulation of case conceptualizations/case study
- Lectures by clinical specialists
- Class discussions, including leading class discussions on selected topics
- Presentations

Learning opportunities specific to the **Applied Psychotherapy Skills Course** (small group tutorials) include:
- Role play of therapy skills in pairs and small groups
- Analysis of pre-recorded therapy sessions
- Discussion of clinical cases
- Self-reflection papers
Learning opportunities during the **Practicum Courses** include:
- Conducting individual therapy sessions with clients
- Co-leading group therapy sessions with an experienced clinician
- Supervision of therapy cases by a registered clinician
- Integration paper

The core and elective courses will be offered in a regular classroom format at McMaster University or St. Joseph’s Healthcare’s West 5th Campus. The Practicum placements will be completed in community-based clinical settings, including hospitals, family health teams, mental health agencies, and university counselling centres.

### 4.4 EXPERIENTIAL LEARNING

The MSc in Psychotherapy courses will include several experiential learning components within the course-based curriculum and clinical practicum placements.

The program is committed to providing students with various methods for learning and practicing their new learning. The courses will include role plays, analyzing and discussing pre-recorded therapy sessions, and group discussions. The focus of the Applied Psychotherapy Skill is to offer students an opportunity to learn about relevant clinical topics and practice the skill with students in the program and to receive feedback prior to using the skill or therapy method with a client in clinical practice. In addition, the Applied Psychotherapy Skills course will include opportunities for students to explore a variety of clinical and professional problems that they are likely to encounter in clinical practice (e.g., managing client relationship ruptures, ethical dilemmas).

All students will also be required to complete two clinical practicum placements. Students will be able to select clinical placements that are relevant to their training interests (and based on availability). Initial clinical placements have been established with various mental health speciality clinics (e.g., Anxiety Treatment and Research Clinic, Mood Disorders Clinic) at St. Joseph’s Healthcare Hamilton. As the program develops further, additional practicum placements will be formalized. It is anticipated that students will be working with clinical patients/clients in a variety of settings including hospitals, family health teams, mental health agencies, university counselling centres and private clinical practices. Experiential clinical training will offer students a range of opportunities to practice their new skills in professional clinical settings to prepare students for the workplace.

### 4.5 ACCESSIBILITY

Standards set by the Accessibility for Ontarians with Disabilities (AODA) will be incorporated in the development of the course materials and resources.

For example, all materials used in the MSc in Psychotherapy will be available in alternate formats (e.g., large-print; braille). The website will conform to McMaster Accessibility guidelines. All instructors and faculty will be informed on an annual basis about the requirements to provide accommodations where needed, and how to do so. Faculty can discuss any questions they may have regarding accessibility or ways in which the course content could be modified to ensure it is relevant and sensitive to different
perspectives with the course co-ordinator or with the Program Director. Accommodations will be made on an individual basis to meet the specific needs of the learner.

4.6 **RESEARCH REQUIREMENTS (IF APPLICABLE)**

The MSc in Psychotherapy is a professional, course-based Master’s program and therefore, does not require a research project. However, the students will learn to search for and assess evidence in order to develop their skills for promoting evidence-based practice. Additionally, there are many opportunities within McMaster’s Department of Psychiatry and Behavioural Neurosciences for interested students to participate in research projects that are underway.

5 **ASSESSMENT OF LEARNING**

5.1 **METHODS FOR ASSESSING STUDENTS**

Each course will incorporate a diverse set of learning activities to teach the course content, which directly align with the principles of problem-based and self-directed learning, and provide the instructor with several opportunities for the assessment of learning. The students will be evaluated using a variety of methods, including their performance in role plays and supervision of client sessions to demonstrate the skills taught, written essays on topics covered, participation in class discussions, and class presentations.

The specific assessment methods will include:

- Evaluation of assignments, papers, quizzes, exams, learning portfolios, participation in course activities.
- Reflective papers to provide the opportunity to assess students’ ability to apply the theoretical knowledge and skills taught in course material to their own clinical practice.
- Evaluation of the student’s ability to perform the skills taught (in role play and in clinical practice)
## 5.2 CURRICULUM MAP

A curriculum map is presented below.

<table>
<thead>
<tr>
<th>Program Learning Outcomes (PLOs)</th>
<th>Master’s Degree Level Expectations (DLEs)</th>
<th>Program Requirements</th>
</tr>
</thead>
<tbody>
<tr>
<td>By the end of the program, student graduating with a Master’s degree will be able to...</td>
<td>All courses (in class lecture, course readings, class discussion)</td>
<td>Assessments and Evidence</td>
</tr>
<tr>
<td>For each PLO, identify which DLE(s) it aligns with below.</td>
<td>For each PLO, what teaching activities and learning opportunities are students exposed to that will help them to achieve that PLO?</td>
<td>For each PLO, what is specifically collected from the student as evidence that they can/have achieved the PLO before they graduate?</td>
</tr>
<tr>
<td>1. Demonstrate and apply knowledge of key theoretical models of mental health illness and wellness, including understanding role of human development, physical health, and sociocultural factors, in their professional practice.</td>
<td>1, 2, 3</td>
<td>- Graded assessments of course requirements: written assignments, projects, final papers</td>
</tr>
<tr>
<td></td>
<td></td>
<td>- Assessment of quality of participation in class discussions</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Practicum (Application of knowledge and skill in a clinical setting)</td>
</tr>
<tr>
<td></td>
<td></td>
<td>- Midterm and final evaluations completed by clinical supervisor regarding the student’s level of competence in developing case conceptualizations that are rooted in clinical theory</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Completion of Integrative Papers (completing of literature review, preparation/integration of knowledge, writing of final paper)</td>
</tr>
<tr>
<td></td>
<td></td>
<td>- Feedback on drafts of paper</td>
</tr>
<tr>
<td></td>
<td></td>
<td>- Evaluation of final written paper</td>
</tr>
<tr>
<td>2. Demonstrate knowledge of the theory and research support for evidence-based psychotherapies in the treatment of mental health disorders.</td>
<td>1, 2, 3</td>
<td>- Graded assessments of course requirements: Written assignments and final papers</td>
</tr>
<tr>
<td></td>
<td></td>
<td>- Assessment of quality of participation in class discussions</td>
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<tr>
<td></td>
<td></td>
<td>Practicum (Application of knowledge and skill in a clinical setting)</td>
</tr>
<tr>
<td></td>
<td></td>
<td>- Midterm and final evaluations completed by clinical supervisor regarding the student’s level of competency in the delivery of an evidence-based psychotherapy</td>
</tr>
<tr>
<td>3. Demonstrate the competency to conduct clinical assessments, formulate case conceptualizations and</td>
<td>3, 4, 5, 6</td>
<td>- Graded assessments of course requirements: Written assignments and final papers</td>
</tr>
<tr>
<td></td>
<td></td>
<td>- Assessment of quality of participation in class discussions</td>
</tr>
<tr>
<td></td>
<td></td>
<td>All courses, but predominantly in the Assessment and Case Formulation Course (In class lectures, course readings, class discussion, role play)</td>
</tr>
<tr>
<td>Agenda Item IV</td>
<td></td>
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<tr>
<td>----------------</td>
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<tr>
<td>develop treatment plans for a range of clinical presentations.</td>
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<tr>
<td>Practicum (Weekly supervision with a registered therapist, conducting clinical assessments with patients/clients in clinical settings)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>- Midterm and final evaluations of student’s level of competence in conducting clinical assessments, developing case conceptualizations and treatment plans</td>
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<tr>
<td>4. Engage in effective and competent clinical practice, which is demonstrated through the effective application of evidence-based psychotherapies, ability to form therapeutic rapport, and effective communication with patients or clients.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Applied Psychotherapy Skills (Didactic presentations, video vignettes, role-play, class discussion)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>- Graded assessments of course requirements: written assignments, projects, final papers,</td>
<td></td>
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<tr>
<td>- Evaluation of student’s quality of participation in class discussions and role plays</td>
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<tr>
<td>Practicum (Weekly supervision with a registered therapist, leading individual and group therapy sessions in clinical settings)</td>
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<tr>
<td>- Midterm and final evaluations of student’s level of competence in conducting psychotherapy</td>
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<tr>
<td>5. Demonstrate and integrate knowledge of professional standards of practice and ethical conduct in clinical practice.</td>
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<tr>
<td>Ethical Standards and Professional Practice (Didactic presentations, course readings, in class discussion)</td>
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<td></td>
</tr>
<tr>
<td>- Graded assessments of course requirements: written assignments, projects, final papers</td>
<td></td>
<td></td>
</tr>
<tr>
<td>- Evaluation of student’s quality of participation in in-class discussions</td>
<td></td>
<td></td>
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<tr>
<td>Practicum (In clinical setting, Discussions with clinical supervisor)</td>
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<tr>
<td>- Midterm and final evaluations of student’s level of competence in clinical ethics and professional issues</td>
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<tr>
<td>6. Accurately appraise personal levels of clinical competence and identify areas for professional growth and self-directed learning.</td>
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<tr>
<td>Applied Psychotherapy Skills (Didactic lecture, class discussions, Role plays)</td>
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<td></td>
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<tr>
<td>- Evaluation of reflection papers and self-directed learning plans</td>
<td></td>
<td></td>
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<tr>
<td>- Evaluation of student’s quality of participation in in-class discussions and role-plays</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Practicum (Audio recording therapy sessions)</td>
<td></td>
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<tr>
<td>- Completion of goals at start of practicum and evaluation of goal completion at the end of the practicum</td>
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<tr>
<td>7. Use critical thinking skills to identify and solve complex problems and to appraise the success of the solutions employed.</td>
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<tr>
<td>All courses, but predominantly in the Clinical Research Methods Course (in class lecture, course readings – research articles, class discussion, discussion of program evaluation)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>- Graded assessments of course requirements: written assignments, projects, final papers</td>
<td></td>
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<tr>
<td>- Assessment of quality of participation in class discussions</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Completion of Integrative Papers (Preparation/integration of knowledge, writing of final paper)</td>
<td></td>
<td></td>
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<tr>
<td>- Evaluation of final paper</td>
<td></td>
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<tr>
<td>8. Exhibit the ability to identify and make improvements in the delivery of patient or client care.</td>
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</tr>
<tr>
<td>Clinical Research Methods (In class lecture on program evaluation; Completion of written assignment)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>- Graded assessments of course requirements: written assignments, projects, final papers</td>
<td></td>
<td></td>
</tr>
<tr>
<td>- Assessment of quality of participation in class discussions</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
| Agenda Item IV | 9. Engage in effective written and oral communication skills with patients and other healthcare providers. | 4 | **All courses, but predominantly in the Assessment and Case Formulation Course** (in class discussions, clinical writing skills, written assignments) | - Graded assessments of course requirements: written assignments, projects, final papers  
- Assessment of quality of participation in class discussions  
**Practicum** (Completion of written clinical assessment reports and therapy progress notes; Participate as a member of a clinical team) | - Midterm and final evaluations of student’s quality of clinical writing: assessment reports and clinical progress notes  
**Completion of Integrative Paper** Develop draft of outline and written document | - Feedback on draft  
- Final evaluation of paper  
| 10. Demonstrate an understanding of clinical research methods, including the ability to critically evaluate the validity of clinical theories and research findings and the ability to conceptualize and develop a research study. | 1, 2, 3 | **All courses but predominantly in the Clinical Research Methods Course** (In class lecture, class discussion, written critiques of research articles) | - Graded assessments of course requirements: written assignments, projects, final papers  
- Assessment of quality of participation in class discussions  
**Practicum** (Application of skills in a clinical setting) | - Midterm and final evaluations of student’s quality of clinical writing: assessment reports and clinical progress notes  
**Completion of Integrative Paper** Develop draft of outline and written document | - Feedback on draft  
- Final evaluation of paper  
| 11. Integrate and apply knowledge of clinically-relevant research findings in clinical practice, including the selection of appropriate evidence-based therapies, and engaging in the measurement and evaluation of clinical outcomes. | 1, 2, 3, 6 | **All courses, but predominantly in the Clinical Research Methods Course** | - Graded assessments of course requirements: written assignments, projects, final papers  
- Assessment of quality of participation in class discussions  
**Practicum** (Application of skills in a clinical setting) | - Midterm and final evaluations of student’s quality of clinical writing: assessment reports and clinical progress notes  
**Completion of Integrative Paper** Develop draft of outline and written document | - Feedback on draft  
- Final evaluation of paper |
5.3 DEMONSTRATING STUDENT ACHIEVEMENT

Students’ achievements will be demonstrated by (i) performance in courses, (ii) evaluations from clinical practicum placements and (iii) completion of the Integrative papers.

Courses

For in-classroom courses, student achievement will be identified through class participation and assignments, quizzes, midterms and exams. Theoretical knowledge will be evaluated primarily through class participation (e.g., engagement in discussions and critical appraisal of concepts), assignments, quizzes, exams, as well as on final written projects. Achievements related to practical skill acquisition will be evaluated based on students’ demonstration of clinical skills/application in role plays as well as their written description of their clinical case, which will include evaluation of their client’s outcomes.

The assessment methods are outlined in the curriculum map. In addition to the traditional methods of evaluating students’ performance, the emphasis on clinical application lends itself to many innovative opportunities for students to demonstrate their skills, such as role plays, case formulations, presentation of vignettes illustrating their application of new skills, reflective papers, and the discussion of videotapes that demonstrate the application of new skills acquired via clinical practice. Students’ progress can also be assessed through observation of their participation in group discussions during the courses.

Clinical Practicum Placements

Clinical practicum supervisors will provide the ongoing supervision and guidance of students on clinical practicum placements. Clinical practicum supervisors will also provide feedback on the student’s performance while on the practicum placement, including a formal, written evaluation of the student’s clinical skill (i.e., intervention utilised, building a therapeutic alliance), communication skills, and ethics and professional standards.

The Coordinator of Clinical Education will oversee, coordinate and evaluate clinical placements. The Coordinator of Clinical Education will complete the student’s formal midterm and final evaluations, with consideration of the formal, written input from the clinical practicum supervisor.

Integrative Papers

Students will complete an integrative paper (approximately 2000 words) during their clinical practicum placements. The paper will require students to identify a topic of their choice related to their practicum placement (e.g., a specific mental health problem, psychotherapy treatment protocol). Students will then discuss the theoretical knowledge that they have gained on this topic and how it can be applied in their clinical setting to best meet the needs of their patients. This paper will be evaluated by their clinical practicum supervisor and by the Coordinator of Clinical Education and will be used towards their evaluation of their Clinical Practicum Placement.
6  RESOURCES

6.1  GRADUATE PROGRAMS

6.1.1  ADMINISTRATIVE, PHYSICAL AND FINANCIAL RESOURCES

Administrative
A faculty position will be developed for the Coordinator of Clinical Education (teaching-stream position) who will oversee clinical practicum placements. Due to the commitment required for coordinating clinical practicum placements for the students, the program will require a FTE who is responsible for developing, planning, coordinating, facilitating, monitoring and evaluating the clinical practicum placements and for evaluating students on placement with input from the clinical practicum supervisor. The Coordinator of Clinical Education will also build partnerships between the MSc in Psychotherapy Program and the clinical community to secure practicum positions. Finally, the Coordinator of Clinical Education will be responsible for providing orientation and training materials for clinical practicum supervisors.

The current CBS Program Coordinator will transfer to the Master’s program once approved. The Coordinator will oversee the daily functioning of the program and run the administrative office.

Physical Resources
The Psychotherapy Program will be housed within the Department of Psychiatry and Behavioural Neurosciences. The existing CBS Program has two offices, one at the Ewart Angus Centre at MUMC and one at St Joseph’s Healthcare Centre - West 5th campus. There is also space for student cubicles. There is no current need for additional physical resources.

Financial Resources
The program will be funded through BIU grants from the Ministry of Training, Colleges and Universities and student tuition. Financial support for the Program Director, Coordinator of Clinical Training, Program coordinator and administrative support will be generated from program revenues.

6.1.2  LIBRARY, TECHNOLOGY, AND LABORATORY RESOURCES

The library and information technology support available from McMaster University and St. Joseph's Healthcare Hamilton will be adequate to sustain and support students’ learning and scholarship, including access to journal subscriptions, online databases, and books.

The program will utilise audiovisual materials and internet access during the class lectures. All of the classrooms have the required technology.

None of the students will be conducting independent research projects and therefore no laboratory space is required.

6.1.3  FACULTY

The existing CBS Faculty will support the Master’s program and maintain the high quality of teaching and the excellence of the learning environment. Majority of the teaching faculty are members of the Department of Psychiatry and Behavioural Neurosciences, while others come from McMaster’s School of
Rehabilitation Science and School of Nursing in the Faculty of Health Sciences. All faculty and course instructors are well-established in academia and clinical practice and remain up-to-date with developments in clinical and psychotherapy practice. Faculty and course instructors are experienced, respected and well-recognized in their areas of expertise. As noted in 6.1.1. **ADMINISTRATIVE, PHYSICAL AND FINANCIAL RESOURCES**, the program will be hiring a faculty member to serve as the Coordinator of Clinical Education.

A list of faculty members can be found under Appendix C. Majority of the faculty fall into category 4 (non-tenure track core faculty members who are involved in teaching and/or supervision in other graduate program(s) in addition to being a core member of the graduate program under review). Although many of the faculty members are in category 4, the CBS program is their sole or primary teaching commitment in the Department of Psychiatry and Behavioural Neurosciences. Given the demands of the MSc Program, the department will also aim to recruit a faculty member to teach exclusively in the MSc Program. As there are no dissertations or theses to be completed in this Program, there is no supervision related to a Master’s thesis.

All students will be connected with a mentor, who is a faculty member involved in the MSc in Psychotherapy, to provide advice and mentorship. The student and faculty member will meet a minimum of three times per year to provide guidance and discuss with the student his/her progress in the program.

### 6.1.4 STUDENT FINANCIAL SUPPORT

Consistent with professional Master’s degrees at McMaster University, there is a scholarship allocation of $1000 per full-time student, per year. The scholarship will be used to provide entrance scholarships, awards of academic achievement, etc., which is consistent with other graduate programs in the Faculty of Health Sciences.

### 7 QUALITY AND OTHER INDICATORS

#### 7.1 ACADEMIC QUALITY OF THE PROGRAM

The MSc in Psychotherapy will use formative assessments and feedback on a regular basis to assess the academic quality of the program.

The Psychotherapy Program will be evaluated by students in the following areas: a) the quality of the instruction (i.e., knowledge and teaching ability of instructors), and b) the usefulness of the course materials to their real work experiences. Courses are evaluated on objectives, content, format, resources used, group composition and overall ratings. The program will also seek feedback from clinical practicum supervisors.

Assessment and quality of student success during the program will be evaluated based on: time to completion data; grades and averages; and retention rates. Following completion of the MSc, students will be asked to complete a survey to provide the program with information related to current employment and status of registration with the CRPO.
Faculty members’ performance will be reviewed by the Associate Chair, Education Psychiatry and Behavioural Neurosciences as part of their faculty re-appointment every three years. Instructors will be evaluated by students using the standard online survey developed by the Faculty of Health Sciences. The evaluations will also be presented to the instructors to review after the course has ended. The program will follow the Faculty of Health’s Sciences guidelines for sharing evaluations: To maintain and protect students’ confidentiality, feedback will only be shared with faculty once a sufficient number of have been received (i.e., 5 or more) and the information gathered will be anonymized. These evaluations will then be shared with the course co-ordinator. Should there be concerns raised by these evaluations, the course co-ordinator will meet with the Instructor to discuss the concerns and to help resolve any issues that arise. This meeting will then be reported to the Program Director. Students will also be asked to evaluate their clinical practicum supervisors and the providing of feedback to supervisors will also follow the Faculty’s guidelines for sharing of evaluation information.

Department meetings will be held each semester, which will provide opportunities for faculty to exchange information on how the courses are progressing and areas for improvement. These meetings will also offer faculty the opportunity to exchange ideas or innovations that have worked well in one course or part of the program and which could be adopted in other courses.

7.2 INTELLECTUAL QUALITY OF THE STUDENT EXPERIENCE

The MSc in Psychotherapy is offered through McMaster’s Department of Psychiatry and Behavioural Neurosciences. The Department has a vibrant and engaged faculty with diverse training backgrounds. There will be many opportunities for students to become involved in Department activities and to interact with a variety of faculty members. The faculty are also very invested in maintaining a high standard of intellectual quality in their course offerings and in their clinical work. We aim for the MSc in Psychotherapy to meet the students’ training and learning needs to prepare them for a career as an independent psychotherapy practitioner.
**A. FINANCIAL SUSTAINABILITY OF PROGRAM**

Complete New Graduate Program Budget template (appendix A1) which will populate table below: in the case of Interdisciplinary programs, also append the Draft MOU between faculties. (Appendix A2) In the case of Collaborative programs, also append the Draft MOU between institutions. (Appendix A3)

<table>
<thead>
<tr>
<th>REVENUE</th>
<th>2019</th>
<th>2020</th>
<th>2021</th>
<th>2022</th>
<th>2023</th>
</tr>
</thead>
<tbody>
<tr>
<td>Program Generated Gross Graduate Revenue</td>
<td>$713,940</td>
<td>$1,487,876</td>
<td>$1,621,534</td>
<td>$1,708,703</td>
<td>$1,723,551</td>
</tr>
<tr>
<td>Other Revenue (Specify)</td>
<td>$8,000</td>
<td>$8,000</td>
<td>$8,000</td>
<td>$10,000</td>
<td>$10,000</td>
</tr>
<tr>
<td><strong>Total Gross Revenue</strong></td>
<td><strong>$721,940</strong></td>
<td><strong>$1,495,876</strong></td>
<td><strong>$1,629,534</strong></td>
<td><strong>$1,718,703</strong></td>
<td><strong>$1,733,551</strong></td>
</tr>
<tr>
<td>University Fund / Research Infrastructure Contribution</td>
<td>-$50,923</td>
<td>-$106,126</td>
<td>-$115,659</td>
<td>-$121,876</td>
<td>-$122,936</td>
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<tr>
<td><strong>Total Support Unit Allocations (Indirect Costs)</strong></td>
<td>-$216,941</td>
<td>-$469,409</td>
<td>-$504,630</td>
<td>-$527,346</td>
<td>-$528,987</td>
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<tr>
<td><strong>NET REVENUE</strong></td>
<td><strong>$454,076</strong></td>
<td><strong>$920,342</strong></td>
<td><strong>$1,009,245</strong></td>
<td><strong>$1,069,481</strong></td>
<td><strong>$1,081,629</strong></td>
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<tr>
<td>Total Teaching Costs</td>
<td>-$240,500</td>
<td>-$531,000</td>
<td>-$531,000</td>
<td>-$531,000</td>
<td>-$531,000</td>
</tr>
<tr>
<td>Total Admin Salaries &amp; Benefits</td>
<td>-$132,300</td>
<td>-$138,375</td>
<td>-$140,400</td>
<td>-$142,425</td>
<td>-$144,450</td>
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<tr>
<td>Total Student Support (From operating)</td>
<td>$0</td>
<td>$0</td>
<td>$0</td>
<td>$0</td>
<td>$0</td>
</tr>
<tr>
<td>Total Capital/Equipment Costs</td>
<td>-$8,000</td>
<td>-$9,000</td>
<td>-$5,000</td>
<td>-$5,000</td>
<td>-$5,000</td>
</tr>
<tr>
<td>Total Other Direct Expenses - Supplies/Services/Travel etc</td>
<td>-$27,150</td>
<td>-$27,150</td>
<td>-$27,650</td>
<td>-$27,650</td>
<td>-$27,650</td>
</tr>
<tr>
<td>Total Share of Faculty's Central Expenses</td>
<td>-$45,408</td>
<td>-$92,034</td>
<td>-$100,924</td>
<td>-$106,948</td>
<td>-$108,163</td>
</tr>
<tr>
<td><strong>PROGRAM EXPENSES</strong></td>
<td><strong>-$453,358</strong></td>
<td><strong>-$797,559</strong></td>
<td><strong>-$804,974</strong></td>
<td><strong>-$813,023</strong></td>
<td><strong>-$816,263</strong></td>
</tr>
</tbody>
</table>

**IN-YEAR (Surplus/ Deficit)**

<table>
<thead>
<tr>
<th>2019</th>
<th>2020</th>
<th>2021</th>
<th>2022</th>
<th>2023</th>
</tr>
</thead>
<tbody>
<tr>
<td>$719</td>
<td>$122,782</td>
<td>$204,270</td>
<td>$256,458</td>
<td>$265,366</td>
</tr>
</tbody>
</table>

**Total Grad support per FT student (Scholarship, Taship) excluding RA**

<table>
<thead>
<tr>
<th>2019</th>
<th>2020</th>
<th>2021</th>
<th>2022</th>
<th>2023</th>
</tr>
</thead>
<tbody>
<tr>
<td>$1,000</td>
<td>$1,000</td>
<td>$1,000</td>
<td>$1,000</td>
<td>$1,000</td>
</tr>
</tbody>
</table>

**B. NUMBER OF STUDENTS**

<table>
<thead>
<tr>
<th>FT</th>
<th>Intended Steady-state annual intake</th>
<th>Year achieved:</th>
<th>Number of International Students included in steady state</th>
</tr>
</thead>
<tbody>
<tr>
<td>35</td>
<td>Intended Steady-state total enrolment</td>
<td>2021</td>
<td>0</td>
</tr>
<tr>
<td>70</td>
<td></td>
<td></td>
<td>0</td>
</tr>
</tbody>
</table>

**C. FORMAT OF INSTRUCTION**

Health Sciences Masters of Science in Psychotherapy - ( Academic year September - August)

Will there be an impact to enrollments in Programs in other Faculties? If yes, Please Describe:

**C. FORMAT OF INSTRUCTION**

FHS MSc in Psychotherapy Budget 04Dec2017 1/5/2018
During which terms will the program run?

<table>
<thead>
<tr>
<th>Term</th>
<th>Fall</th>
<th>Winter</th>
<th>Summer (May-June)</th>
<th>Summer (July-August)</th>
<th>Annual program units</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>30</td>
</tr>
</tbody>
</table>

Is there a co-op or internship as part of the program?  No  
Describe:

What percentage of instruction will be online? 0%
What percentage of instruction will be off campus? 10%

If either is greater than zero please provide information:

Students complete practicum placements at community sites

**D1. PROPOSED TUITION FEE**

Is approval being sought for a Ministry-funded Program? Yes

Do Standard Tuition rates apply? (If No, specify fees below) No

**Proposed Tuition Fee:**

<table>
<thead>
<tr>
<th></th>
<th>Domestic</th>
<th></th>
<th>International</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Full Time</td>
<td>Part Time</td>
<td>Full Time</td>
<td>Part Time</td>
</tr>
<tr>
<td>Per Year:</td>
<td>$10,000</td>
<td></td>
<td>$40,000</td>
<td></td>
</tr>
<tr>
<td>Per Term (if applicable):</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Per Course (if applicable):</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**Rational for proposed fees (describe or append results of market assessment) and describe how they adhere to MTCU policy if seeking ministry funding:**

Please see attached market assessment document. The proposed tuition fee is consistent with the fees from comparable Master's degree programs offered by other Ontario Universities.

**D2. SUPPLEMENTARY FEES**

Will regular Mandatory Supplementary Fees apply? Full Time: Yes  Part Time: Yes

**If no, please contact Dean of Grad Studies for guidance and provide resulting proposed applicable fees and rationale:**

Are there other mandatory costs for students? (Coop/Internship fees, supplies, books, uniform, equipment, field trips, professional exam fees, etc?) No
Describe & Approximate amounts:

**E. EXTERNAL RESOURCES:** donations, special grants, research overhead, endowment funds, Space, etc.

Please provide information about any external funds or resources that will be available to the program.

<table>
<thead>
<tr>
<th></th>
<th>Onetime</th>
<th>Ongoing</th>
<th>Value $</th>
<th>Details</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**F. FACULTY RESOURCES** - Please append evidence of endorsement from other faculties affected if necessary.

If courses are also being taught in other faculties, please list.

<table>
<thead>
<tr>
<th>Faculty</th>
<th>Faculty</th>
<th>Faculty</th>
</tr>
</thead>
<tbody>
<tr>
<td>N/A</td>
<td>N/A</td>
<td>N/A</td>
</tr>
</tbody>
</table>

FHS MSc in Psychotherapy Budget 04Dec2017
1/5/2018
### Incremental FTEs required:

<table>
<thead>
<tr>
<th>Incremental FTEs required:</th>
<th>Health Sciences</th>
<th>N/A</th>
<th>N/A</th>
<th>N/A</th>
<th>Comments</th>
</tr>
</thead>
<tbody>
<tr>
<td>Faculty - Tenure Track</td>
<td>2</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Faculty - Sessional and CLAs</td>
<td>0</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Staff</td>
<td>2</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Teaching Assistants</td>
<td>0</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**Additional Non-salary costs in other Faculties**

### G. OTHER RESOURCE IMPLICATIONS:

Unless otherwise defined in the categories below, please use these descriptions to define impact:

- **No Impact:** Can be dealt with as part of normal, daily operations. No budgetary or resource impact.
- **Minor:** Can be dealt with in a mutually agreed timeframe using existing personnel. Resources pre-approved or readily available. No disruption to other approved work priorities.
- **Major:** Must be scheduled as a project (not able to deal with as part of regular operations). Budget not approved or readily available; source of funding to be determined. May require external resources. May require reprioritization of previously approved tasks.

#### 1. PHYSICAL FACILITIES

**Please contact Coordinator, Design and Space Management x23898 for assistance in determining additional resource costs if needed.**

<table>
<thead>
<tr>
<th>Please indicate the likely space resource implications of the proposal</th>
<th>Impact</th>
<th>New Sq Ft Required</th>
<th>Existing Sq Ft required</th>
<th>Comments (include location and for new space, plans to fund and acquire space)</th>
<th>If major new central budget req’d, estimate $</th>
</tr>
</thead>
<tbody>
<tr>
<td>Faculty space- Offices, Labs, seminar rooms, student space, etc</td>
<td>Minor</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>Other space (excluding registrar controlled classrooms)</td>
<td>None</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

#### 2. TECHNOLOGY RESOURCES

**Please contact UTS Director, Technology x21888 for assistance in determining impact if needed.**

<table>
<thead>
<tr>
<th>Please indicate the likely impact on central technology resources for the proposal</th>
<th>Impact</th>
<th>Are additional resources required to support this program? If so, please list.</th>
<th>If Major, estimate $</th>
</tr>
</thead>
<tbody>
<tr>
<td>UTS Computer Labs and Software</td>
<td>Minor</td>
<td></td>
<td>UTS</td>
</tr>
<tr>
<td>Network/Internet/Cloud services access &amp; usage</td>
<td>Minor</td>
<td></td>
<td>UTS</td>
</tr>
<tr>
<td>Audio-Visual / Telecommunications</td>
<td>None</td>
<td></td>
<td>UTS</td>
</tr>
<tr>
<td>Wireless Connectivity</td>
<td>None</td>
<td></td>
<td>UTS</td>
</tr>
<tr>
<td>Other (Please specify)</td>
<td>Minor</td>
<td></td>
<td>UTS</td>
</tr>
</tbody>
</table>

#### 3. LIBRARY SERVICES

**Please contact Associate University Librarian, Collections x26557 for assistance in determining impact if needed.**

<table>
<thead>
<tr>
<th>Please indicate the likely Library resource implications of the proposal</th>
<th>Impact</th>
<th>Are additional resources required to support this program? If so, please list.</th>
<th>If Major, estimate $</th>
</tr>
</thead>
<tbody>
<tr>
<td>Staffing (Add‘l service desk staff, add‘l librarians, new staff with skills/knowledge not currently present)</td>
<td>Minor</td>
<td></td>
<td>Libraries</td>
</tr>
<tr>
<td>Collections, One Time Purchases (books, ebooks, purchased online resources)</td>
<td>Minor</td>
<td></td>
<td>Libraries</td>
</tr>
<tr>
<td>Collections, Ongoing Subscriptions/licenses (print or online journals)</td>
<td>Minor</td>
<td></td>
<td>Libraries</td>
</tr>
<tr>
<td>Technology and Computing (new or add‘l hardware/software, increased digital storage capacity)</td>
<td>Minor</td>
<td></td>
<td>Libraries</td>
</tr>
<tr>
<td>Library Spaces (study space, new or specialized user or collection spaces)</td>
<td>Minor</td>
<td></td>
<td>Libraries</td>
</tr>
<tr>
<td>Other (Please specify)</td>
<td>None</td>
<td></td>
<td>Libraries</td>
</tr>
</tbody>
</table>

#### 4. OFFICE OF THE UNIVERSITY REGISTRAR

**Please contact the Registrar for assistance in determining impact if needed.**

<table>
<thead>
<tr>
<th>Please indicate the likely resource implications of the proposal</th>
<th>Impact (Select)</th>
<th>Support required</th>
<th>Area Responsible</th>
<th>If Major, estimate $</th>
</tr>
</thead>
</table>

FHS MSc in Psychotherapy Budget 04Dec2017

1/5/2018
<table>
<thead>
<tr>
<th>Admissions/Recruitment</th>
<th>Minor</th>
<th>Recruiting and Admissions aligned with current 101 processes</th>
<th>Faculty/Dept.</th>
<th>Agenda Item IV</th>
</tr>
</thead>
<tbody>
<tr>
<td>Student Record Support (maintaining records, transcripts, grades, student card, etc)</td>
<td>Minor</td>
<td>Standard services for graduate program</td>
<td>Student Affairs</td>
<td></td>
</tr>
<tr>
<td>Class Scheduling Services</td>
<td>Minor</td>
<td>Follows existing timelines/processes</td>
<td>Student Affairs</td>
<td></td>
</tr>
<tr>
<td>Classrooms</td>
<td>None</td>
<td>Scheduled into Faculty controlled classrooms or only summer term or off campus</td>
<td>Student Affairs</td>
<td></td>
</tr>
</tbody>
</table>

5. STUDENT SUPPORT - Please contact Assistant Dean, Student Services for assistance in determining impact if needed.

<table>
<thead>
<tr>
<th>Please indicate any other possible resource impacts</th>
<th>Impact</th>
<th>Please Describe any impacts on the support areas</th>
<th>If Major, estimate $</th>
</tr>
</thead>
<tbody>
<tr>
<td>Student Services - International Student support</td>
<td>Minor</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Student Services - Athletics &amp; Rec, Health/Counselling, Career</td>
<td>Minor</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Residences</td>
<td>Minor</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Grad Scholarships/Bursaries*</td>
<td>Minor</td>
<td>$ 67,250</td>
<td>Avg. Annual Draw on Scholarship pool $ -</td>
</tr>
</tbody>
</table>

*If you are anticipating OSAP funding for these students please contact SFAS to provide additional information to activate approval from MTCU

6. MIETL- Please contact Educational Consultant for assistance in determining impact if needed.

<table>
<thead>
<tr>
<th>Please indicate any other possible resource impacts</th>
<th>Impact</th>
<th>Please Describe any impacts on the support areas</th>
<th>If Major, estimate $</th>
</tr>
</thead>
<tbody>
<tr>
<td>Re/Development of blended or online courses</td>
<td>None</td>
<td></td>
<td>MIETL</td>
</tr>
<tr>
<td>Learning Management System (Avenue to Learn)</td>
<td>Minor</td>
<td></td>
<td>MIETL</td>
</tr>
<tr>
<td>Training and development for TAs or faculty</td>
<td>None</td>
<td></td>
<td>MIETL</td>
</tr>
<tr>
<td>Research on teaching and learning initiatives</td>
<td>Minor</td>
<td></td>
<td>MIETL</td>
</tr>
<tr>
<td>Other (Please specify)</td>
<td>None</td>
<td></td>
<td>MIETL</td>
</tr>
</tbody>
</table>

7. OTHER

<table>
<thead>
<tr>
<th>Please indicate any other possible resource impacts</th>
<th>Impact</th>
<th>Please Describe any impacts on the support areas</th>
<th>If Major, estimate $</th>
</tr>
</thead>
<tbody>
<tr>
<td>Financial Services</td>
<td>Minor</td>
<td></td>
<td>Financial Affairs</td>
</tr>
<tr>
<td>Human Resources</td>
<td>Minor</td>
<td></td>
<td>HR</td>
</tr>
<tr>
<td>Advancement</td>
<td>Minor</td>
<td></td>
<td>UA</td>
</tr>
<tr>
<td>Research Services Office</td>
<td>None</td>
<td></td>
<td>Research Support</td>
</tr>
<tr>
<td>Other (Please specify)</td>
<td>None</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Name</th>
<th>Signatures</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Approvals

Submitter

Department Chair/ Area Director

Faculty Dean or Director of Administration

Executive Director, Finance & Administration (Academic)
To : University Planning Committee

From : Christina Bryce
Assistant Graduate Secretary

At its meeting on December 5\textsuperscript{th}, 2017, Graduate Council approved the proposed Ph.D. in Statistics Program.

The attached document, pertaining to the proposed program, is now forwarded for approval to the University Planning Committee for its meeting on January 17\textsuperscript{th}, 2018.
NEW PROGRAM PROPOSAL FOR
Ph.D. in Statistics
Date: October 24, 2017
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PROGRAM

1.1 PROGRAM DESCRIPTION
The proposed Ph.D. in Statistics is a research-focused program that will train students to develop theory, methods, and tools for the analysis of increasingly diverse emerging data types. Not surprisingly, the recent explosion of interest in all things related to data has resulted in a notable increase in the number of graduate students in the Ph.D. program in Mathematics choosing to specialize in Statistics. However, the lack of a dedicated Ph.D. program in Statistics is a limiting factor in further growth (see Section 1.6.II). This proposal will remove this limiting factor and allow the growth of a unique Ph.D. program in Statistics. The proposed program is unique in that it combines a traditional Ph.D. program in Statistics, covering many areas of research, with an unusually significant research strength in computational statistics, which is a very important area of training in this data-centric era. In fact, the training in computational statistics that the proposed program will deliver is an essential component of the highly-skilled workforce for which Ontario is striving.

1.2 PROPOSAL PREPARATION AND CONSULTATION PROCESS
Dr. Paul McNicholas was assigned responsibility for taking the lead in the preparation of this proposal. As part of the process, other statistics Ph.D. programs in Canada were studied. The Faculty Dean and AVP and Dean of Graduate Studies were involved over various stages of drafting. There was broad consultation within, and beyond, the department. Notably, this includes a retreat of all concerned faculty, where the a near-final draft of the proposal was discussed and there was clear consensus on moving forward.

1.3 CONSISTENCY WITH MCMASTER’S MISSION AND ACADEMIC PLAN
i. McMaster’s Strategic Mandate Agreement:
The proposed program directly addresses the “Science and Discovery” institutional strength, as articulated in the SMA (2014–2017). At the time of writing, SMA2 is not available; however, it is known that the institutional strengths and priorities will remain unchanged. While research in statistics is specialized, research that utilizes statistics cuts across almost every area of science and discovery. The SMA describes science and discovery as “the foundation for innovation and discovery at McMaster”. Indeed, in this big data era, much of science and discovery depends on the availability of appropriate statistical techniques and expertise; the proposed program will help to deliver both. The SMA also states that:

*Inquiry-based research programs in the sciences… inculcate the desire in McMaster students to create new knowledge and seek answers to far-reaching questions that challenge our understanding of ourselves, the*
world, and the universe.

Nowadays, seeking such answers almost inevitably entails dealing with big or otherwise complex data sets. The proposed program will train students to tackle such problems by developing and implementing cutting edge statistical methods in a wide variety of areas of expertise (cf. Section 1.1).

The area of growth addressed by the proposed program is “Science and Engineering”. The SMA explains that “the Faculty [of Science] sees a tremendous opportunity to translate research outcomes into practical, advanced training for Science graduates”. The proposed program aims to seize on just such an opportunity. In addition to the vibrant statistics research that is ongoing at McMaster University, there is research across campus that depends on statistics and, indeed, that drives some of the fundamental statistical research that is being carried out. Indeed, faculty listed in Section 2.6.VI are involved with several institutes across campus, e.g., the Michael G. DeGroote Institute for Infectious Disease Research (IIDR), the McMaster Autism Research Team (MacART), the McMaster Data Science Institute (MacData), the Physical Activity Centre for Excellence (PACE), and the Genetic and Molecular Epidemiology Laboratory (GMEL).

ii. **McMaster’s current priorities:**

The proposed program will address all four of McMaster’s identified priorities:

- **The Student Experience**
  The proposed program will foster academic and intellectual growth, as well as interactions between graduate students, faculty, the university, and the wider research community. Experiential learning is an important component in the proposed program (see Section 4.4). In keeping with the current tradition for students studying Statistics within the Probability and Statistics specialization of the Mathematics Ph.D. program, students in the proposed program will have the opportunity to be involved in collaborations between their supervisor and researchers in other departments across campus. Accordingly, there will be a clear element of interdisciplinarity in the proposed program. Finally, in carrying out the research required for the thesis, students will be engaging in self-directed learning.

- **Community Engagement**
  As already mentioned, the proposed program will foster interactions with the wider research community – within Ontario, Canada, and abroad. Work will be disseminated to the community both by presentations at conferences, publication of preprints in open access venues (e.g., [www.arXiv.org](http://www.arXiv.org)), publication of papers in peer-reviewed journals, and publication of the thesis.
• **Research**
  As part of a research-intensive program, students will be immersed in a vibrant research environment, comprising fellow students, postdoctoral researchers, and faculty.

• **Internationalization**
  Student participation in seminars on campus will help to imbue a sense of the importance of their work on an international level. As is currently the case for students studying Statistics within the Probability and Statistics specialization of the Mathematics Ph.D. program, there will also be the opportunity to travel to international conferences and meetings, supported by supervisor funding and/or the various travel grants that are available.

1.4 **PROGRAM LEARNING OUTCOMES**

The proposed program will:

• **PLO1** Provide graduates with advanced education, knowledge, and technical expertise in the broad area of statistics.

• **PLO2** Produce graduates with both a broad understanding of the discipline of Statistics as well as in-depth knowledge of the literature surrounding the sub-discipline that forms the topic of the thesis.

• **PLO3** Ensure that, at completion, students can effectively communicate their knowledge of the discipline, and results of their research, both orally and in writing.

• **PLO4** Foster academic and intellectual growth, as well as interactions between graduate students, faculty, the university, and the wider research community – within Ontario, Canada, and abroad.

• **PLO5** Develop highly competent, independent, and creative statisticians who will provide leadership in academic institutions and in research and development within industry or government agencies.

• **PLO6** Help address the acute shortage of highly qualified statisticians, especially those trained to the doctoral level, who understand theory and can develop computational and statistical tools for the analysis of diverse emerging data types.

Note that, while our master’s program, as well as programs offered at other institutions, have helped to address the problem highlighted in PLO6, a dearth of such expertise at the doctoral level remains. A continuing failure to address this shortage will result in lost opportunities in every area of the economy as well as in areas of notable societal importance such as the healthcare industry. In particular, the computational statistics research focus in the proposed program will help to address this failure.
1.5 CONSISTENCY WITH DEGREE LEVEL EXPECTATIONS

<table>
<thead>
<tr>
<th>UNDERGRADUATE DLEs</th>
<th>GRADUATE DLEs</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Depth and Breadth of Knowledge</strong></td>
<td><strong>Depth and Breadth of Knowledge</strong></td>
</tr>
<tr>
<td><strong>Knowledge of Methodologies</strong></td>
<td><strong>Research and Scholarship</strong></td>
</tr>
<tr>
<td><strong>Application of Knowledge</strong></td>
<td><strong>Application of Knowledge</strong></td>
</tr>
<tr>
<td><strong>Communication Skills</strong></td>
<td><strong>Communication Skills</strong></td>
</tr>
<tr>
<td><strong>Awareness of Limits of Knowledge</strong></td>
<td><strong>Awareness of Limits of Knowledge</strong></td>
</tr>
<tr>
<td><strong>Autonomy and Professional Capacity</strong></td>
<td><strong>Autonomy and Professional Capacity</strong></td>
</tr>
</tbody>
</table>

Graduate DLE | By the end of this program, students will...
--- | ---
Depth and Breadth of Knowledge | …have gained advanced education, knowledge, and technical expertise in the broad area of Statistics (PLO1).
Research and Scholarship | … have undergone academic and intellectual growth, and interacted with other graduate students and faculty within the university and the wider research community (PLO 4).<br>…be highly competent, independent, and creative statisticians (PLO5).<br>…be highly qualified statisticians who have been trained to understand theory and develop computational and statistical tools for the analysis of the increasingly diverse emerging data types (PLO6).
Application of Knowledge | …have been trained to understand theory and develop computational and statistical tools for the analysis of the increasingly diverse types of emerging data types (PLO6).
Communication Skills | …be able to effectively communicate their knowledge of the discipline, and results of their research, both orally and in writing (PLO3).
Awareness of Limits of Knowledge | …have a broad understanding of the discipline of Statistics as well as in-depth knowledge of the literature surrounding the sub-discipline that forms the topic of the thesis (PLO2).
Autonomy and Professional Capacity | …be highly competent, independent, and creative statisticians who will provide leadership in academic institutions and in research and development within industry or government agencies (PLO5).

1.6 DEMAND FOR PROGRAM

I. Evidence of Societal/Labour Market Need

The Ontario Ministry of Advanced Education and Skills Development collect and publish labour market information; this is available at [https://www.app.tcu.gov.on.ca/eng/labourmarket/ojf/findoccupation.asp](https://www.app.tcu.gov.on.ca/eng/labourmarket/ojf/findoccupation.asp). The classifications used are based on the National Occupational Classification system; cf. [http://www.statcan.gc.ca/eng/subjects/standard/noc/2011/index](http://www.statcan.gc.ca/eng/subjects/standard/noc/2011/index). Unfortunately, the NOC does not have a separate category for “Statisticians”, including them under “Mathematicians, statisticians and actuaries” (2161). Worse still, the Labour Market Information published by the province, i.e., at [https://www.app.tcu.gov.on.ca/eng/labourmarket/ojf/findoccupation.asp](https://www.app.tcu.gov.on.ca/eng/labourmarket/ojf/findoccupation.asp), does not include this occupation classification. There are, however, two
occupations that statisticians can be considered part of: Information systems analysts and consultants (2171) and Computer and Information Systems managers (0213). Demand for 2171 and 0213 is listed as Above Average for the periods 2009-2013 and 2013-2017; however, both occupational classifications are too broad to facilitate an accurate assessment of the labour market for statisticians.

Borrowing information from south of the border leads to a much better assessment of demand for statisticians, as follows. The United States Department of Labor, Bureau of Labor Statistics is a little ahead of their Provincial and Federal counterparts in Canada in using a specific category “Statisticians”. The relevant section of their Occupational Outlook Handbook (http://www.bls.gov/ooh/math/statisticians.htm) gives projections for the period 2014-2024, stating, inter alia, that:

Employment of statisticians is projected to grow 34 percent from 2014 to 2024, much faster than the average for all occupations. Growth is expected to result from more widespread use of statistical analysis to make informed business and healthcare decisions.

Given the similarities between the labour market in Southern Ontario and much of the United States, it is reasonable to assume similar robust growth in demand for statisticians on this side of the border. Furthermore, there is strong anecdotal evidence of demand for graduates form the master’s in Statistics program as well as from the Probability and Statistics specialization of the Mathematics Ph.D. program. This includes recent graduates taking jobs with large financial institutions, medical research companies, and other private organizations. Some concrete examples, for graduates from the Probability and Statistics specialization of the Mathematics Ph.D. program, are given in the appendix.

In addition to providing highly trained researchers in statistics, the proposed program is unique in that it combines a traditional Ph.D. program in Statistics, covering many areas of research, with an unusually significant research strength in computational statistics. In this data-centric era, computational statistics is a crucially important area of training. In fact, the training in computational statistics that the proposed program will deliver is an essential component of the highly-skilled workforce for which Ontario is striving.

II. Evidence of Student Demand

The last few years has seen a notable increase in the number of students studying Statistics within the Probability and Statistics specialization of the Mathematics Ph.D. program rising from 9 in 2011 to 17 in 2016. This growth in Ph.D. level studies in statistics is encouraging; however, further growth is limited by the absence of a Ph.D. program in Statistics. For one, the inability
to explicitly advertise Ph.D. studies in statistics at McMaster University is a significant disadvantage; some students interested in studying statistics may not even look at a program entitled Mathematics. For those who do consider it, the actual structure of the Mathematics Ph.D. program may be unattractive to students who wish to study statistics, e.g., the first part of the comprehensive exam focuses on topics in mathematics (including probability) but not on statistics.

A major reason for the development of the present proposal is that there would be more applicants to study statistics at the Ph.D. level at McMaster University if such studies could be formalized and advertised as a Ph.D. in Statistics. The rationale is that a Ph.D. in Statistics would be more attractive than a Ph.D. in Mathematics with a specialization in Probability and Statistics. To test this theory, a short survey was administered to the STATS 780 (Data Science) class on November 30, 2016. This class was chosen because, in addition to all the new master’s students in Statistics, the class contained some Mathematics Ph.D. students in the Probability and Statistics specialization as well as more than ten graduate students from other programs. Participation in the survey was voluntary (26 students responded), students did not have advance notice that it would take place, nothing about the proposed program had been previously discussed during the class, and completed surveys are anonymous.

The key question posed was “Compared to a Ph.D. in Mathematics with a specialization in Probability and Statistics, a Ph.D. in Statistics is:” and students were asked to circle one of five options: much more attractive; more attractive; neither more nor less attractive; less attractive; much less attractive. Notably, no student selected either of the latter two options and 24 of the 26 students responded that a Ph.D. in Statistics is (much) more attractive. All three of the students currently enrolled in the Probability and Statistics specialization of the Mathematics Ph.D. indicated that a Ph.D. in Statistics is much more attractive, as did 10 of the 13 master’s students in Statistics. The responses are summarized, by student group, in Figures 1-3.
Figure 1: Responses to the question "Compared to a Ph.D. in Mathematics with a specialization in Probability and Statistics, a Ph.D. in Statistics is:" by students currently enrolled in the Statistics master’s program.

Figure 2: Responses to the question "Compared to a Ph.D. in Mathematics with a specialization in Probability and Statistics, a Ph.D. in Statistics is:" by students currently enrolled in a Ph.D. program (3 in Mathematics and 5 in CSE).
Figure 3: Responses to the question “Compared to a Ph.D. in Mathematics with a specialization in Probability and Statistics, a Ph.D. in Statistics is:” by students currently enrolled in programs not included in Figures 1 and 2.

In addition to its limited attractiveness to students, the present system of having Statistics Ph.D. students embedded within other graduate programs at McMaster (primarily the Mathematics Ph.D. program) is not ideal as it limits the type of training that can be provided. This system was workable when there were a relatively small number of Ph.D. students interested in Statistics, and provided their research topics fit within the other programs. That is no longer the case. The tables in the Appendix give the number of Ph.D. students at McMaster University supervised by our Category 1 faculty (see Section 6.4.VI), as well as the jobs that many of them now hold, and clearly reflect the growing interest among doctoral students for training in Statistics. Understandably, it has become increasingly difficult to accommodate the breadth of research interests using the present system. Added to this is the recent appointment of Dr. Paul McNicholas as Canada Research Chair (Tier I) in Computational Statistics. His added expertise, together with the ever-growing demand for doctoral training in Statistics, provides a strong rationale for the establishment of a separate Ph.D. program.

In terms of student demand, it is also notable that around 25% of students completing the M.Sc. in Statistics go on to Ph.D. studies. The M.Sc. program in Statistics was started about four decades ago and involves faculty supervisors from such diverse departments/faculties as Mathematics and Statistics, Clinical Epidemiology and Biostatistics (now Health Research Methods, Evidence and Impact), Economics, and Business. Besides the roughly 25% of graduates who have gone on to further study, others have gone on to successful careers in health, banking, finance, and industry, where there is a strong demand for workers with training in analytics and statistics.
III. Justifiable Duplication

There are several Ph.D. programs in Statistics in Ontario, most notably at the University of Toronto and the University of Waterloo. There is no Ph.D. program in Statistics in Ontario that mixes the traditional elements of a Ph.D. program with significant research focus on computational statistics. To put meat on the bones of this claim, at present, around half of the students currently in the Probability and Statistics specialization of the Mathematics Ph.D. program are studying computational statistics, as are around one-third of the thesis students in the M.Sc. in Statistics. Even without having a dedicated Ph.D. program in Statistics, this is already the largest concentration of graduate students studying computational statistics in statistics programs in Ontario.

As home to the Canada Research Chair in Computational Statistics as well as a large concentration of statistics graduate students studying computational statistics, McMaster University is uniquely positioned to deliver a program that combines a traditional Ph.D. program in Statistics, covering many areas of research, with an unusually significant research strength in computational statistics. In addition to the significant research strength in computational statistics, the core faculty in the program have expertise covering a broad range of areas, including applied statistics, bioinformatics, biostatistics, classification, ensemble methods, evolutionary algorithms, meta-analysis, mixture models, multivariate statistics, order statistics, probability, statistical genetics, statistical inference, statistical methodology, survival analysis, and theoretical statistics.

1.7 DEGREE NOMENCLATURE

The proposed program is a “classic” research-focused Ph.D. program. The field of study is Statistics. Upon approval of the proposal Ph.D. program, the Probability and Statistics specialization of the Mathematics Ph.D. program will be phased out without harm to current students. Specifically, no new students will be admitted to the specialization, and all current students will be given the option of transferring into the proposed Ph.D. program.

ADMISSION & ENROLMENT

2.1 ADMISSION REQUIREMENTS

Prior to admission, all successful applicants will have a supervisor that is willing to guide them and provide a stipend. This is the best and most practical way to ensure sufficient research potential. Beyond this requirement, the specifics depend on whether an applicant has an appropriate master’s degree, as follows.
Applicants with a suitable master’s degree.
Successful applicants will have a master’s degree equivalent to the M.Sc. in Statistics with thesis option at McMaster University with GPA equivalent to at least B+ over the last two years equivalent of full time study.

Applicants currently enrolled in a master’s degree (transfer option).
Students in the M.Sc. in Statistics program, with thesis option, at McMaster University who have completed the course requirements for the M.Sc. with GPA equivalent to at least B+ may transfer into the Ph.D. in Statistics.

Direct entry.
Successful applicants will have a bachelor's degree with a major in Statistics with GPA equivalent to at least B+ over the last two years equivalent of full time study.

2.2 ENROLMENT PLANNING AND ALLOCATIONS

The following forecast starts with five new students per year and allows for a small increasing uptick based on the existence and advertising of a separate Statistics program. Of course, neither the increase in the quality of applicants nor the deeper applicant pool that will come with the proposed program is reflected in these forecasts. Note that continuing students in Year 1 are expected transfers from the Probability and Statistics specialization of the Mathematics Ph.D. program; we expect two students to transfer from each of the four years of the program. Note also that it is assumed that two students complete in each of the first four years of the program; this corresponds to completing students who transferred from the Probability and Statistics specialization of the Mathematics Ph.D. program. However, it should also be noted that this number would be expected to increase in Year 5 and beyond, as students who enter the new program in Year 1 started to complete.

<table>
<thead>
<tr>
<th>Program Year</th>
<th>New</th>
<th>Continuing</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Year 1</td>
<td>4</td>
<td>8</td>
<td>12</td>
</tr>
<tr>
<td>Year 2</td>
<td>4</td>
<td>10</td>
<td>14</td>
</tr>
<tr>
<td>Year 3</td>
<td>5</td>
<td>12</td>
<td>17</td>
</tr>
<tr>
<td>Year 4</td>
<td>5</td>
<td>15</td>
<td>20</td>
</tr>
</tbody>
</table>

Crucially, the proposed Ph.D. program in Statistics will not just lead to an increase in the quantity of new students but also to an increase in the quality of new students. This increase in quality will be the result of a richer applicant pool. Furthermore, the proposed Ph.D. program in Statistics will have a positive impact on the M.Sc. in Statistics by increasing the quality and quantity of applications. The current situation, whereby the M.Sc. in Statistics program will remain a terminal program for the majority of students, will continue. However, those who
wish to continue their studies will now have a Ph.D. program in Statistics to go into; this will be particularly important for students who want to study Statistics but would not wish to pursue a specialization within a Mathematics Ph.D. program.

2.3 ALTERNATIVE REQUIREMENTS

Applicants who do not hold a suitable master’s degree (see Section 2.1), are not enrolled in the M.Sc. in Statistics program at McMaster University, and do not hold a suitable bachelor’s degree (for direct entry purposes, see Section 2.1), may follow an alternative admission route whereby they first enter the M.Sc. in Statistics program and later apply to transfer into the Ph.D. in Statistics program. Note that this route is also open to students who have a suitable bachelor’s degree but do not have the supervisory support to take the direct entry route.

STRUCTURE

3.1 ADMINISTRATIVE, GOVERNANCE AND COMMUNICATION

The administrative, governance, and communication responsibilities for the Ph.D. in Statistics will be shared by the Associate Chair (Statistics) and the Program Committee. The day-to-day responsibilities will be discharged by the Associate Chair (Statistics). Decisions on admissions, student progress, and all other matters will be taken by majority decision of the Program Committee. The Program Committee will comprise the Associate Chair (Statistics), who will act as chair, as well as faculty members who are involved in supervision in the program.

3.2 STRUCTURE AND REGULATION

Course Requirements

Students who have completed a suitable master’s degree (cf. Section 2.1), are transferring into the Ph.D. program while also completing the M.Sc. in Statistics degree, or have been granted direct entry into the program are required to take two 700 level STATS courses (total of 6 units). Students transferring into the Ph.D. program in Statistics without taking the M.Sc. in Statistics degree must first complete the course requirements for the M.Sc. in Statistics with a GPA of at least 10. Because these course requirements exceed the two level 700 STATS courses (total of 6 units) required for other students, no additional courses are required; however, such students must pass a Transfer Exam administered by the Supervisory Committee prior to transferring. Students entering the Ph.D. program via direct entry (see Section 2.1) will be required to take four 700 level STATS courses (total of 12 units).

Comprehensive Exam

During their course of study, doctoral candidates will have to pass a
Comprehensive Examination. The purpose of this examination is to ensure that the candidate possesses sufficient knowledge and maturity in statistics. The Comprehensive Examination will be in two parts.

- **Part I** will be a written examination.
- **Part II** will take the form of a written literature review, research proposal, and an oral examination.

**3.3 PROGRAM LENGTH & PROGRESSION**

The normal duration of the program is four years of full-time study. During this time, students will attend the weekly statistics seminars as well as other relevant talks, e.g., as may take place at the departmental colloquium. The following is the normal progression for students who have completed a suitable master’s degree or are direct entry students (cf. Section 2.1):

<table>
<thead>
<tr>
<th>Term</th>
<th>Milestone</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Two 700 level STATS courses are completed.</td>
</tr>
<tr>
<td>2</td>
<td>Completion of Part I of the Comprehensive Exam. Preparation for Part II begins.</td>
</tr>
<tr>
<td>4</td>
<td>Part II of the Comprehensive Exam is completed.</td>
</tr>
<tr>
<td>11</td>
<td>Complete draft of thesis to supervisory committee.</td>
</tr>
<tr>
<td>12</td>
<td>Thesis defence.</td>
</tr>
</tbody>
</table>

The following is the normal progression for Students transferring into the Ph.D. program in Statistics without completing the M.Sc. in Statistics (note that Term 1 is the first term of graduate studies, with the student transferring to the Ph.D. program effective Term 3):

<table>
<thead>
<tr>
<th>Term</th>
<th>Milestone</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Courses are taken as part of M.Sc. program.</td>
</tr>
<tr>
<td>2</td>
<td>Course requirements for the M.Sc. program are completed.</td>
</tr>
<tr>
<td>3</td>
<td>Completion of Transfer Examination and transfer into Ph.D. program. Completion of Part I of the Comprehensive Exam.</td>
</tr>
<tr>
<td>4</td>
<td>Preparation for Part II of the Comprehensive Exam begins.</td>
</tr>
<tr>
<td>6</td>
<td>Part II of the Comprehensive Exam is completed.</td>
</tr>
<tr>
<td>13</td>
<td>Complete draft of thesis to supervisory committee.</td>
</tr>
<tr>
<td>14</td>
<td>Thesis defence.</td>
</tr>
</tbody>
</table>

The following is the normal progression for Students transferring into the Ph.D. program in Statistics while also completing the M.Sc. in Statistics (note that Term 1 is the first term of graduate studies, with the student transferring to the Ph.D. program effective Term 4):
<table>
<thead>
<tr>
<th>Term</th>
<th>Milestone</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Courses are taken as part of M.Sc. program.</td>
</tr>
<tr>
<td>2</td>
<td>Course requirements for the M.Sc. program are completed.</td>
</tr>
<tr>
<td>3</td>
<td>Research towards the M.Sc. thesis is carried out.</td>
</tr>
<tr>
<td>4</td>
<td>Transfer into Ph.D. program. Work towards the M.Sc. thesis is completed. The M.Sc. thesis is defended. Two additional 700 level STATS courses are completed.</td>
</tr>
<tr>
<td>5</td>
<td>Completion of Part I of the Comprehensive Exam. Preparation for Part II of the Comprehensive Exam begins.</td>
</tr>
<tr>
<td>7</td>
<td>Part II of the Comprehensive Exam is completed.</td>
</tr>
<tr>
<td>14</td>
<td>Complete draft of thesis to supervisory committee.</td>
</tr>
<tr>
<td>15</td>
<td>Thesis defence.</td>
</tr>
</tbody>
</table>

**CURRICULUM AND TEACHING**

### 4.1 PROGRAM CONTENT

**Courses**
The following 700 level courses will be of interest to Ph.D. students:

- STATS 743 – Foundations of Statistics (6 units)
- STATS 744 – Special Topics (3 units)
- STATS 752 – Linear Models and Experimental Designs (3 units)
- STATS 754 – Stochastic Processes and Applications (3 units)
- STATS 758 – Multivariate Analysis and Applications (3 units)
- STATS 761 – Advanced Time Series Analysis (3 units)
- STATS 780 – Data Science (3 units)
- STATS 794 – Directed Reading (3 units)

Of these courses, STATS 780 covers a hot and emerging topic in statistics. Depending on the topic at hand, STATS 744 and 794 can also consider emerging topics. In fact, based on recent offerings of STATS 749, it often covers emerging topics.

**Comprehensive Exam**
Part I of the comprehensive is designed to test a student’s breadth of knowledge at a basic level. Part II of the comprehensive exam tests a student’s depth of knowledge in topics directly related to the thesis topic and takes the form of a research proposal.

**Thesis**
The completion of the thesis requires that the student remains up-to-date on developments in the field, even after completion of the Comprehensive Exam. The thesis must be written as specified in the Graduate Calendar.
4.2 PROGRAM INNOVATION

The proposed Ph.D. program in Statistics covers many areas of research (see Section 1.1 for details). However, it will be the only statistics Ph.D. program in Ontario that mixes the traditional elements of a Ph.D. program with significant research focus on computational statistics. This is a major draw when one considers the growing importance of computationally intensive approaches in the “big data” era. Around half of the students currently focusing on statistics through the Probability and Statistics specialization are focused on computational statistics. This, already, is the largest concentration of Ph.D. students studying computational statistics in a statistics program in Ontario. More generally, a dedicated Ph.D. program in Statistics will allow for easier adaption to new data types and methodology as they arise in the future.

4.3 MODE(S) OF DELIVERY

As a research-intensive program, the Ph.D. in Statistics will be delivered primarily via regular meetings between the student and their supervisor. This “apprentice” system, whereby the student learns from working under the guidance of her/his supervisor, has proven extremely effective in the training of Ph.D. students. In general, supervisors will be expected to meet with their supervisees regularly. Supervisory committee meetings, which will take place at least annually, will be an important means of tracking progress. Statistics seminars, department colloquia, and other seminars on campus, e.g., the MacData seminars and the Computational Sciences and Engineering (CSE) seminars in Scientific Computing, will also provide students with exposure to new research ideas. The same is true of conferences. Students will also be able to avail themselves of the benefits of McMaster’s membership of the Canadian Statistical Sciences Institute (CANSSI), e.g., through participation in CANSSI sponsored workshops or through reciprocity agreements with the Statistical and Applied Mathematical Sciences Institute (SAMSI), and the Fields Institute, e.g., via seminars and workshops.

4.4 EXPERIENTIAL LEARNING

Statistics, as a discipline, is inherently applicable to real-world problems and to problems that arise in virtually all other areas of endeavor at McMaster University. In keeping with the current tradition for students studying Statistics within the Probability and Statistics specialization of the Mathematics Ph.D. program, students in the proposed program will have the opportunity to be involved in collaborations between their supervisor and researchers in other departments across campus. Such experiences give students hands-on experience working with real problems. In some cases, they lead to co-authorship of work in subject matter journals. In addition to such collaborations, there are several resources on campus that students could turn to for experiential learning opportunities; these include a Statistics Canada Research Data Centre and ICES (Institute for Clinical
4.5 ACCESSIBILITY

There are no impediments to accommodations in the proposed Ph.D. program that come within McMaster's policy and recommendations (http://accessibility.mcmaster.ca/). This policy states that accommodations are a shared responsibility between the individuals requesting and providing the accommodation and that the nature of an accommodation is specific to the individual and should be determined on a case-by-case basis. For example, the classrooms and workspaces that will be utilized all meet high standards of accessibility. Academic accommodations such as special conditions for exams (including the Comprehensive Exam), other coursework, and the thesis defence will be arranged on a case-by-case basis.

4.6 RESEARCH REQUIREMENTS (IF APPLICABLE)

Development of a research proposal is required towards completion of the Comprehensive Exam (cf. Section 4.1). Thereafter, a thesis is required, which is a significant research undertaking. Research completed towards the thesis is expected to be original and result in the publication of papers in high-quality peer-reviewed journals. The research carried out and presented in the thesis must represent a significant contribution to the field, i.e., to Statistics.

ASSESSMENT OF LEARNING

5.1 METHODS FOR ASSESSING STUDENTS

Level 700 STATS courses are assessed using a combination of assignments, projects, midterm exams, and final exams. Parts I and II of the Comprehensive Exam are assessed by an examination committee. The thesis is examined by a committee comprising the supervisory committee and an examiner external to the university, in accordance with the Graduate Calendar. Throughout the program, progress is monitored by the supervisor at regular meetings (cf. Section 4.3). Annual, and formal, assessments of progress are made by the supervisory committee and the associated documentation is submitted to the School of Graduate Studies. If needed, supervisory committee meetings may take place more often, e.g., each term.

5.2 CURRICULUM MAP

There follows a table, mapping program learning outcomes to degree level expectations, teaching activities, and assessments.
<table>
<thead>
<tr>
<th>Program Learning Outcomes</th>
<th>Ph.D. DLEs</th>
<th>Program Requirements</th>
</tr>
</thead>
<tbody>
<tr>
<td>PLO1 Provide graduates with advanced education, knowledge, and technical expertise in the broad area of Statistics.</td>
<td>Depth and Breadth of Knowledge</td>
<td>Level 700 STATS courses. Regular meetings with the supervisor. Preparation for the Comprehensive Exam. Statistics seminar series.</td>
</tr>
<tr>
<td>PLO2 Produce graduates with both a broad understanding of the discipline of Statistics as well as in-depth knowledge of the literature surrounding the sub-discipline that forms the topic of the thesis.</td>
<td>Awareness of Limits of Knowledge</td>
<td>Level 700 STATS courses. Regular meetings with the supervisor. Preparation for the Comprehensive Exam. Statistics seminar series. Preparation of the thesis.</td>
</tr>
<tr>
<td>PLO3 Ensure that, at completion, students can effectively communicate their knowledge of the discipline, and results of their research, both orally and in writing.</td>
<td>Communication Skills</td>
<td>Regular meetings with the supervisor. Preparation for the Comprehensive Exam. Preparation of the thesis.</td>
</tr>
<tr>
<td>PLO4 Foster academic and intellectual growth, as well as interactions between graduate students, faculty, the university, and the wider research community – within Ontario, Canada, and abroad.</td>
<td>Research and Scholarship</td>
<td>Statistics seminar series. Department colloquia. Other seminars on campus, e.g., the MacData Seminar. Attendance at conferences and meetings, e.g., the SSC meeting.</td>
</tr>
<tr>
<td>PLO5 Develop highly competent, independent, and creative statisticians who will provide leadership in academic institutions and in research and development within industry or government agencies.</td>
<td>Research and Scholarship Autonomy and Professional Capacity</td>
<td>Preparation for Part II of the Comprehensive Exam. Preparation of the thesis. Statistics seminar series.</td>
</tr>
<tr>
<td>PLO6 To produce graduates who have been trained to understand theory and develop computational and statistical tools for the analysis of the increasingly diverse types of emerging data.</td>
<td>Research and Scholarship Application of Knowledge</td>
<td>Regular meetings with the supervisor. Preparation for Part II of the Comprehensive Exam. Preparation of the thesis. Statistics seminar series. Other seminars on campus, e.g., the MacData Seminar. Attendance at conferences and meetings, e.g., the SSC meeting.</td>
</tr>
</tbody>
</table>

5.3 DEMONSTRATING STUDENT ACHIEVEMENT

The ultimate demonstration of student success in the proposed Ph.D. program is the publication of high-quality peer-reviewed publications in impactful journals or other relevant media, e.g., published proceedings or book chapters – this is true regardless of whether the thesis is written as a monograph or as a collection of manuscripts. As students progress through the program, there will be several means to ensure that they are on track to produce such publications. These include regular meetings with the supervisor, annual supervisory committee
meetings, Part II of the Comprehensive Examination, and the thesis defense.

RESOURCES

6.2 GRADUATE PROGRAMS

i. ADMINISTRATIVE, PHYSICAL AND FINANCIAL RESOURCES

The administrative, physical, and financial resources necessary for the proposed program are already in place in support of the existing Probability and Statistics specialization of the Mathematics Ph.D. program.

ii. LIBRARY, TECHNOLOGY, AND LABORATORY RESOURCES

Although these needs are identical to those currently present in support of the Probability and Statistics specialization of the Mathematics Ph.D. program, details are given for completeness. The vast resources of the McMaster Library system will be critical for research and scholarly work within the proposed Ph.D. program in Statistics. The existing periodical subscriptions include electronic access for the McMaster community to all the relevant international journals on statistics and related disciplines. The Statistics faculty will continue to make recommendations for Library acquisition of hard and electronic copies of important and relevant textbooks. It is also important that students in the proposed Ph.D. program have access to software, most notably R and Python, which are freely available. The typesetting software LaTeX is essential for writing reports, papers, and the thesis; this is also freely available. Students will be able to access desktop computer facilities within the department; however, experience suggests that most have their own laptops. Students conducting research in computational statistics will require access to high-performance computing equipment, which is available though (relatively small) computer clusters within the Department as well as large-scale infrastructure available via SHARCNET – the latter is available through sponsorship from the supervisor.

iii. FACULTY

Faculty Quality

The core faculty for the program are listed in Section 6.2.VI, and include a Distinguished University Professor (Balakrishnan) and two senior research chairs – the John D. Cameron Endowed Chair (Beyene) and a Tier 1 Canada Research Chair (McNicholas). In addition to theoretical excellence, e.g., Balakrishnan is one of the most prolific researchers in statistical theory worldwide, faculty members have demonstrated experience with real-world applications. In fact, some have shown leadership in this regard, e.g., two of the Category 1 faculty are former Presidents of the Business and Industrial Statistics Section of the Statistical
Society of Canada, and one is a member of the CANSSI Industrial Innovation Committee. The core faculty have brought in over $6,000,000 in relevant research funding (i.e., funding that can support personnel) since 2009 and have already supervised 88 Ph.D. students to completion.

Supervisory Capacity
Based on the fact that, as of the November 2016 count, there were 17 Ph.D. students studying statistics as part of the Probability and Statistics specialization of the Mathematics Ph.D. program, there is clear supervisory capacity. In all, 14 of these 17 students (~82.4%) are supervised by either Dr. Balakrishnan or Dr. McNicholas. The presence of such productive professors amongst the Category 1 faculty is seen as a distinct advantage of the proposed program. In addition to Drs. Balakrishnan and McNicholas, there are several Category 1 faculty who have previously supervised Ph.D. students and are expected to have better access to students under the proposed program. A three year rolling average of Ph.D. students supervised by our Category 1 faculty (Figure 4) very nicely illustrates supervisory capacity.

Furthermore, with relatively minor involvement from other categories at present, there is certainly potential for growth. Further evidence for the supervisory capacity for the proposed Ph.D. program can be found by considering supervisors for students taking the M.Sc. in Statistics. Of the 29 thesis students entering the M.Sc. program in Fall 2015 or 2016, 25 were/are supervised by faculty in Categories 1 or 2, with Category 1 faculty carrying almost all the supervisory load (24 students).

![Figure 4: Three year rolling average number of Ph.D. degrees awarded to students supervised by Category 1 faculty.](image-url)
Faculty Research
While research strength in computational statistics is a unique aspect of the proposed program, there is very broad research strength amongst the core faculty (see Section 6.2.VI for a list of core faculty). As mentioned in Section 1.1, there is notable expertise in applied statistics, bioinformatics, biostatistics, classification, ensemble methods, evolutionary algorithms, meta-analysis, mixture models, multivariate statistics, order statistics, probability, statistical genetics, statistical inference, statistical methodology, survival analysis, and theoretical statistics. Whatever the focus of a student’s research, they will have some exposure to applications through their research. In fact, the work of core faculty has applications in many areas including biology, business, economics, environmental science, finance, physics, and medicine.

iv. STUDENT FINANCIAL SUPPORT
The competitive level of financial support currently available to students in the Probability and Statistics specialization of the Mathematics Ph.D. program will be available to students in the proposed Ph.D. program. The annual funding will break down as follows, and will be provided for four years. Note that visa students’ tuition bursaries help cancel out the difference in tuition fees between Canadian Citizens and Permanent Residents; however, there will be a very limited number of such bursaries available.

- Canadian Citizens and Permanent Residents
  - Teaching Assistantships $11,520
  - Department Support $17,500
  - Total $29,020

- Visa holders
  - Teaching Assistantships $11,520
  - Department Support $19,000
  - Tuition Bursary $7,600
  - Total $38,120

Some notes on the above tables follow. Department Support represents a combination of grant support, endowment funding (e.g., Britton and/or Stewart funds), scholarships, etc. The Department will discuss, with the School of Graduate Studies, the possibility of creating new scholarships for Ph.D. students in Statistics using the sizable gift recently received from the estate of Jim Stewart. The funding level attached to teaching assistantships given herein is that which is effective September 1, 2017; this funding level is subject to change over time.
v. FACULTY RESEARCH FUNDING

The Table provided below is intended to show the amount of funding available to support faculty research and potentially available to support students’ work, either through the provision of stipends or materials for the conduct of the research.

<table>
<thead>
<tr>
<th>Year</th>
<th>Granting Councils</th>
<th>Other Peer Adjudicated</th>
<th>Contracts</th>
<th>Others</th>
</tr>
</thead>
<tbody>
<tr>
<td>2009-10</td>
<td>$502,148</td>
<td>$417,986</td>
<td>$50,000</td>
<td>$63,000</td>
</tr>
<tr>
<td>2010-11</td>
<td>$457,528</td>
<td>$402,986</td>
<td>$50,000</td>
<td>$63,000</td>
</tr>
<tr>
<td>2011-12</td>
<td>$465,731</td>
<td>$375,486</td>
<td>$50,000</td>
<td>$39,000</td>
</tr>
<tr>
<td>2012-13</td>
<td>$543,834</td>
<td>$179,489</td>
<td>$50,000</td>
<td>$238,721</td>
</tr>
<tr>
<td>2013-14</td>
<td>$550,168</td>
<td>$37,500</td>
<td>$50,000</td>
<td>$238,721</td>
</tr>
<tr>
<td>2014-15</td>
<td>$397,447</td>
<td>$37,500</td>
<td>$50,000</td>
<td>$240,721</td>
</tr>
<tr>
<td>2015-16</td>
<td>$342,346</td>
<td>$10,000</td>
<td>$50,000</td>
<td>$220,450</td>
</tr>
<tr>
<td>Totals</td>
<td>$3,259,201</td>
<td>$1,460,947</td>
<td>$350,000</td>
<td>$1,103,614</td>
</tr>
</tbody>
</table>

1. The sources include the Ontario Early Researcher Award program, the Juvenile Diabetes Research Foundation, and the National Institutes of Health.

vi. SUPERVISION

<table>
<thead>
<tr>
<th>Faculty Name &amp; Rank</th>
<th>M/F</th>
<th>Home Unit</th>
<th>Supervisory Privileges</th>
<th>Statistics</th>
</tr>
</thead>
<tbody>
<tr>
<td>Dr. N. Balakrishnan – Professor</td>
<td>M</td>
<td>Mathematics &amp; Statistics</td>
<td>Full</td>
<td>X</td>
</tr>
<tr>
<td>Dr. Angelo Canty – Associate</td>
<td>M</td>
<td>Mathematics &amp; Statistics</td>
<td>Full</td>
<td>X</td>
</tr>
<tr>
<td>Dr. Aaron Childs – Associate</td>
<td>M</td>
<td>Mathematics &amp; Statistics</td>
<td>Full</td>
<td>X</td>
</tr>
<tr>
<td>Dr. Shui Feng – Professor</td>
<td>M</td>
<td>Mathematics &amp; Statistics</td>
<td>Full</td>
<td>X</td>
</tr>
<tr>
<td>Dr. Fred Hoppe – Professor</td>
<td>M</td>
<td>Mathematics &amp; Statistics</td>
<td>Full</td>
<td>X</td>
</tr>
<tr>
<td>Member</td>
<td>Category</td>
<td>Full</td>
<td>Co-supervision</td>
<td></td>
</tr>
<tr>
<td>--------</td>
<td>----------</td>
<td>------</td>
<td>----------------</td>
<td></td>
</tr>
<tr>
<td>Dr. Paul McNicholas – Professor</td>
<td>Category 1: tenured or tenure-track core faculty members whose graduate involvement is exclusively in the graduate program under review. For this purpose the master’s and doctoral streams of a program are considered as a single program. Membership in the graduate program, not the home unit, is the defining issue.</td>
<td>X</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Dr. Roman Viveros-Aguilera – Professor</td>
<td>Category 2: non-tenure-track core faculty members whose graduate involvement is exclusively in the graduate program under review.</td>
<td>X</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Dr. Sharon McNicholas – Assistant</td>
<td>Category 3: tenured or tenure-track core faculty members who are involved in teaching and/or supervision in other graduate program(s) in addition to being a core member of the graduate program under review.</td>
<td>X</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Dr. Joseph Beyene – Professor</td>
<td></td>
<td>X</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Dr. Ben Bolker – Professor</td>
<td></td>
<td>X</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Dr. Tom Hurd – Professor</td>
<td></td>
<td>X</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Dr. Traian Pirvu – Associate Professor</td>
<td></td>
<td>X</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Dr. Jeff Racine – Professor</td>
<td></td>
<td>X</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Dr. Ejaz Ahmed – Professor</td>
<td>Category 5: other core faculty: this category may include emeritus professors with supervisory privileges and persons appointed from government laboratories or industry as adjunct professors. Please explain who would fall into this category at your institution.</td>
<td>X</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

### Completed and Current Numbers of Thesis Supervisions by Faculty Member

<table>
<thead>
<tr>
<th>Member</th>
<th>Completed</th>
<th>Current</th>
</tr>
</thead>
<tbody>
<tr>
<td>Dr. E. Ahmed</td>
<td>12</td>
<td>11, PDF: 1</td>
</tr>
</tbody>
</table>
QUALITY AND OTHER INDICATORS

7.1 ACADEMIC QUALITY OF THE PROGRAM

Over the first five years, the department will use the following indicators to document and to demonstrate the quality of this program:

- The quality of students entering the program, e.g., NSERC and OGS scholarships, GPA, etc.
- GPA and supervisory committee reports for students in-program.
- Student publications in peer-reviewed journals and conference proceedings as well as oral and poster presentations at conferences.
- An in-program student satisfaction survey will be administered each year to directly assess student satisfaction.
- Graduate outcomes, i.e., what jobs do graduates end up in. This will be tracked via alumni outreach.
- Retention rates and time-to-completion.
- Student awards beyond the aforementioned NSERC and OGS scholarships, e.g., travel awards, presentation awards, dissertation awards, and NSERC postdoctoral fellowships.

7.2 INTELLECTUAL QUALITY OF THE STUDENT EXPERIENCE

The intellectual quality of the student experience will be promoted and enhanced in the following ways:

- Beyond their own work, there will be many opportunities for students in the proposed Ph.D. program to gain exposure to intellectually exciting topics. The Department has a vibrant statistics seminar series, which takes place every week during the fall and winter terms. In addition to all students being encouraged to attend the seminar, more senior Ph.D. students will also be given the opportunity
to present their work.

- Ph.D. students will be encouraged to attend and present their work at the Statistical Society of Canada annual meeting. In recent years, several students in the Probability and Statistics specialization of the Mathematics Ph.D. program have done this; in fact, such students won presentation awards at the 2015 and 2016 meetings. Attendance at other conferences and meetings will also be encouraged.

- In addition to the statistics seminar series, the Department colloquium and related social activities also provide an excellent environment and opportunity for students to engage with faculty and other graduate students. The same is true of several other seminar series across campus, e.g., the MacData and CSE seminars.
A. FINANCIAL SUSTAINABILITY OF PROGRAM

Complete New Graduate Program Budget template (appendix A1) which will populate table below:

In the case of Interdisciplinary programs, also append the Draft MOU between faculties. (Appendix A2)

In the case of Collaborative programs, also append the Draft MOU between institutions. (Appendix A3)

<table>
<thead>
<tr>
<th>REVENUE</th>
<th>2018</th>
<th>2019</th>
<th>2020</th>
<th>2021</th>
<th>2022</th>
</tr>
</thead>
<tbody>
<tr>
<td>Program Generated Gross Graduate Revenue</td>
<td>$285,723</td>
<td>$504,178</td>
<td>$521,051</td>
<td>$504,178</td>
<td>$504,178</td>
</tr>
<tr>
<td>Other Revenue (Specify)</td>
<td>$0</td>
<td>$0</td>
<td>$0</td>
<td>$0</td>
<td>$0</td>
</tr>
<tr>
<td><strong>Total Gross Revenue</strong></td>
<td><strong>$285,723</strong></td>
<td><strong>$504,178</strong></td>
<td><strong>$521,051</strong></td>
<td><strong>$504,178</strong></td>
<td><strong>$504,178</strong></td>
</tr>
<tr>
<td>University Fund / Research Infrastructure Contribution</td>
<td>-$16,578</td>
<td>-$29,254</td>
<td>-$30,233</td>
<td>-$29,254</td>
<td>-$29,254</td>
</tr>
<tr>
<td>Total Support Unit Allocations (Indirect Costs)</td>
<td>-$97,961</td>
<td>-$152,050</td>
<td>-$151,739</td>
<td>-$150,801</td>
<td>-$150,912</td>
</tr>
<tr>
<td><strong>NET REVENUE</strong></td>
<td><strong>$171,184</strong></td>
<td><strong>$322,875</strong></td>
<td><strong>$339,079</strong></td>
<td><strong>$324,124</strong></td>
<td><strong>$324,013</strong></td>
</tr>
<tr>
<td>Total Teaching Costs</td>
<td>-$224,640</td>
<td>-$235,328</td>
<td>-$246,550</td>
<td>-$258,334</td>
<td>-$270,707</td>
</tr>
<tr>
<td>Total Admin Salaries &amp; Benefits</td>
<td>-$20,250</td>
<td>-$21,600</td>
<td>-$22,950</td>
<td>-$23,625</td>
<td>-$24,300</td>
</tr>
<tr>
<td>Total Student Support (From operating)</td>
<td>$0</td>
<td>-$25,204</td>
<td>-$12,602</td>
<td>$0</td>
<td>$2,521</td>
</tr>
<tr>
<td>Total Capital/Equipment Costs</td>
<td>$0</td>
<td>$0</td>
<td>$0</td>
<td>$0</td>
<td>$0</td>
</tr>
<tr>
<td>Total Other Direct Expenses - Supplies/Services/Travel etc</td>
<td>-$11,933</td>
<td>-$11,933</td>
<td>-$11,933</td>
<td>-$11,933</td>
<td>-$11,933</td>
</tr>
<tr>
<td>Total Share of Faculty's Central Expenses</td>
<td>$0</td>
<td>$0</td>
<td>$0</td>
<td>$0</td>
<td>$0</td>
</tr>
<tr>
<td><strong>PROGRAM EXPENSES</strong></td>
<td><strong>-$256,822</strong></td>
<td><strong>-$294,065</strong></td>
<td><strong>-$294,035</strong></td>
<td><strong>-$293,892</strong></td>
<td><strong>-$304,418</strong></td>
</tr>
<tr>
<td><strong>IN-YEAR (Surplus/ Deficit)</strong></td>
<td><strong>-$85,638</strong></td>
<td><strong>$28,810</strong></td>
<td><strong>$45,044</strong></td>
<td><strong>$30,232</strong></td>
<td><strong>$19,594</strong></td>
</tr>
<tr>
<td>Total Grad support per FT student (Scholarship, Taship) excluding RA</td>
<td>$6,900</td>
<td>$8,000</td>
<td>$7,856</td>
<td>$7,433</td>
<td>$7,571</td>
</tr>
</tbody>
</table>

If the program is showing an ongoing going deficit please indicate whether it is truly incremental to the current faculty financial position. Provide a rationale for proceeding with ongoing negative returns.

B. NUMBER OF STUDENTS

<table>
<thead>
<tr>
<th>FT</th>
<th>PT</th>
</tr>
</thead>
<tbody>
<tr>
<td>5</td>
<td></td>
</tr>
<tr>
<td>18</td>
<td></td>
</tr>
</tbody>
</table>

Proposed number of additional students to University at steady state: (i.e. Are the program students additional (net new) or redistributed from other existing programs within the Faculty or in other Faculties.)

Will there be an impact to enrollments in Programs in other Faculties? [No] If yes, Please Describe:

C. FORMAT OF INSTRUCTION

<table>
<thead>
<tr>
<th>Fall</th>
<th>Winter</th>
<th>Summer (May-June)</th>
<th>Summer (July-August)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Annual program units?
During which terms will the program run?

<table>
<thead>
<tr>
<th>Term</th>
<th>X</th>
<th>X</th>
<th>X</th>
<th>X</th>
</tr>
</thead>
<tbody>
<tr>
<td>Total</td>
<td>30</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Is there a co-op or internship as part of the program?

<table>
<thead>
<tr>
<th>Option</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>No</td>
<td></td>
</tr>
</tbody>
</table>

What percentage of instruction will be online?

<table>
<thead>
<tr>
<th>Percentage</th>
<th>0%</th>
</tr>
</thead>
</table>

What percentage of instruction will be off campus?

<table>
<thead>
<tr>
<th>Percentage</th>
<th>0%</th>
</tr>
</thead>
</table>

If either is greater than zero please provide information:

D1. PROPOSED TUITION FEE

<table>
<thead>
<tr>
<th>Reference</th>
<th><a href="http://www.mcmaster.ca/bms/student/SAC_fees_grad.html">http://www.mcmaster.ca/bms/student/SAC_fees_grad.html</a></th>
</tr>
</thead>
</table>

Is approval being sought for a Ministry-funded Program?

<table>
<thead>
<tr>
<th>Option</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Yes</td>
<td></td>
</tr>
</tbody>
</table>

Do Standard Tuition rates apply? (If No, specify fees below)

<table>
<thead>
<tr>
<th>Option</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Yes</td>
<td></td>
</tr>
</tbody>
</table>

Proposed Tuition Fee:

<table>
<thead>
<tr>
<th>Domestic</th>
<th>International</th>
</tr>
</thead>
<tbody>
<tr>
<td>Full Time</td>
<td>Part Time</td>
</tr>
<tr>
<td>Per Year</td>
<td></td>
</tr>
<tr>
<td>Per Term (if applicable)</td>
<td></td>
</tr>
<tr>
<td>Per Course (if applicable)</td>
<td></td>
</tr>
</tbody>
</table>

Rational for proposed fees (describe or append results of market assessment) and describe how they adhere to MTCU policy if seeking ministry funding:

D2. SUPPLEMENTARY FEES

<table>
<thead>
<tr>
<th>Reference</th>
<th><a href="http://www.mcmaster.ca/bms/student/SAC_fees_grad.html">http://www.mcmaster.ca/bms/student/SAC_fees_grad.html</a></th>
</tr>
</thead>
</table>

Will regular Mandatory Supplementary Fees apply?

<table>
<thead>
<tr>
<th>Option</th>
<th>Full Time</th>
<th>Part Time</th>
<th>Modified only</th>
</tr>
</thead>
<tbody>
<tr>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
<td>No</td>
</tr>
</tbody>
</table>

If no, please contact Dean of Grad Studies for guidance and provide resulting proposed applicable fees and rationale:

Are there other mandatory costs for students? (Coop/Internship fees, supplies, books, uniform, equipment, field trips, professional exam fees, etc?)

<table>
<thead>
<tr>
<th>Option</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>No</td>
<td></td>
</tr>
</tbody>
</table>

Describe & Approximate amounts:

E. EXTERNAL RESOURCES: donations, special grants, research overhead, endowment funds, Space, etc.

Please provide information about any external funds or resources that will be available to the program.

<table>
<thead>
<tr>
<th>Type</th>
<th>Ongoing</th>
<th>Value</th>
<th>Details</th>
</tr>
</thead>
<tbody>
<tr>
<td>eg. Access to lab space</td>
<td>x</td>
<td>$1</td>
<td>CANMET - Longwood</td>
</tr>
</tbody>
</table>

F. FACULTY RESOURCES - Please append evidence of endorsement from other faculties affected if necessary.

If courses are also being taught in other faculties, please list

<table>
<thead>
<tr>
<th>Faculty</th>
<th>Science</th>
<th>N/A</th>
<th>N/A</th>
<th>N/A</th>
<th>Comments</th>
</tr>
</thead>
<tbody>
<tr>
<td>Incremental FTEs required:</td>
<td></td>
<td>Science</td>
<td>N/A</td>
<td>N/A</td>
<td>N/A</td>
</tr>
<tr>
<td>Faculty - Tenure Track</td>
<td></td>
<td>N/A</td>
<td>N/A</td>
<td>N/A</td>
<td></td>
</tr>
<tr>
<td>Faculty - Sessional and CLAs</td>
<td></td>
<td>N/A</td>
<td>N/A</td>
<td>N/A</td>
<td></td>
</tr>
</tbody>
</table>

Copy of REVISED STATS PhD graduatenewprogramtemplatetemplate-budget1718-signed 1/5/2018
### 1. PHYSICAL FACILITIES

<table>
<thead>
<tr>
<th>Space Resource Implications</th>
<th>Impact</th>
<th>New Sq Ft Required</th>
<th>Approx Existing Sq Ft Required</th>
<th>Comments (include location and for new space, plans to fund and acquire space)</th>
<th>If Major New Central Budget Req’d, Estimate $</th>
</tr>
</thead>
<tbody>
<tr>
<td>Faculty space- Offices, Labs, seminar rooms, student space, etc</td>
<td>Minor</td>
<td>-</td>
<td>38.0</td>
<td>Facilities</td>
<td></td>
</tr>
<tr>
<td>Other space (excluding registrar controlled classrooms)</td>
<td>None</td>
<td></td>
<td></td>
<td>Facilities</td>
<td></td>
</tr>
</tbody>
</table>

### 2. TECHNOLOGY RESOURCES

<table>
<thead>
<tr>
<th>Technology Resource</th>
<th>Impact</th>
<th>Are Additional Resources Required to Support This Program? If So, Please List.</th>
<th>If Major, Estimate $</th>
</tr>
</thead>
<tbody>
<tr>
<td>UTS Computer Labs and Software</td>
<td>None</td>
<td></td>
<td>UTS</td>
</tr>
<tr>
<td>Network/Internet/Cloud services access &amp; usage</td>
<td>None</td>
<td></td>
<td>UTS</td>
</tr>
<tr>
<td>Audio-Visual / Telecommunications</td>
<td>None</td>
<td></td>
<td>UTS</td>
</tr>
<tr>
<td>Wireless Connectivity</td>
<td>None</td>
<td></td>
<td>UTS</td>
</tr>
<tr>
<td>Other (Please specify)</td>
<td>None</td>
<td></td>
<td>UTS</td>
</tr>
</tbody>
</table>

### 3. LIBRARY SERVICES

<table>
<thead>
<tr>
<th>Library Resource Implications</th>
<th>Impact</th>
<th>Are Additional Resources Required to Support This Program? If So, Please List.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Staffing (Add'l service desk staff, add'l librarians, new staff with skills/knowledge not currently present)</td>
<td>None</td>
<td></td>
</tr>
<tr>
<td>Collections, One Time Purchases (books, ebooks, purchased online resources)</td>
<td>None</td>
<td></td>
</tr>
<tr>
<td>Collections, Ongoing Subscriptions/licenses (print or online journals)</td>
<td>None</td>
<td></td>
</tr>
<tr>
<td>Technology and Computing (new or add'l hardware/software, increased digital storage capacity)</td>
<td>None</td>
<td></td>
</tr>
<tr>
<td>Library Spaces (study space, new or specialized user or collection spaces)</td>
<td>None</td>
<td></td>
</tr>
<tr>
<td>Other (Please specify)</td>
<td>None</td>
<td></td>
</tr>
</tbody>
</table>

### 4. OFFICE OF THE UNIVERSITY REGISTRAR

<table>
<thead>
<tr>
<th>Resource Implications</th>
<th>Impact</th>
<th>Support Required</th>
<th>Area Responsible</th>
<th>If Major, Estimate $</th>
</tr>
</thead>
<tbody>
<tr>
<td>Admissions/Recruitment</td>
<td>Minor</td>
<td>Recruiting and Admissions aligned with current 101 processes</td>
<td>SGS</td>
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</tr>
</tbody>
</table>
**5. STUDENT SUPPORT** - Please contact Assistant Dean, Student Services for assistance in determining impact if needed.

<table>
<thead>
<tr>
<th>Please indicate any other possible resource impacts</th>
<th>Impact</th>
<th>Please Describe any impacts on the support areas</th>
<th>If Major, estimate $</th>
</tr>
</thead>
<tbody>
<tr>
<td>Student Services - International Student support</td>
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<tr>
<td>Student Services - Athletics &amp; Rec, Health/Counselling, Career</td>
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<td></td>
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<tr>
<td>Residences</td>
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<tr>
<td>Grad Scholarships/Bursaries*</td>
<td>Minor</td>
<td>$ 100,800 Avg. Annual Draw on Scholarship pool</td>
<td>$ -</td>
</tr>
</tbody>
</table>

*If you are anticipating OSAP funding for these students please contact SFAS to provide additional information to activate approval from MTCU

**6. MIETL** - Please contact Educational Consultant for assistance in determining impact if needed.

<table>
<thead>
<tr>
<th>Please indicate any other possible resource impacts</th>
<th>Impact</th>
<th>Please Describe any impacts on the support areas</th>
<th>If Major, estimate $</th>
</tr>
</thead>
<tbody>
<tr>
<td>Re/Development of blended or online courses</td>
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<td></td>
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<tr>
<td>Learning Management System (Avenue to Learn)</td>
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<tr>
<td>Training and development for TAs or faculty</td>
<td>None</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Research on teaching and learning initiatives</td>
<td>None</td>
<td></td>
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</tr>
<tr>
<td>Other (Please specify)</td>
<td>None</td>
<td></td>
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</tr>
</tbody>
</table>

**7. OTHER**

<table>
<thead>
<tr>
<th>Please indicate any other possible resource impacts</th>
<th>Impact</th>
<th>Please Describe any impacts on the support areas</th>
<th>If Major, estimate $</th>
</tr>
</thead>
<tbody>
<tr>
<td>Financial Services</td>
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</tr>
<tr>
<td>Human Resources</td>
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<td></td>
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<tr>
<td>Advancement</td>
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<td></td>
<td></td>
</tr>
<tr>
<td>Research Services Office</td>
<td>None</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Other (Please specify)</td>
<td>None</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Please provide names below and check box to verify that approval has been obtained by each:

- Department Chair/ Area Director: HANS BODEN
- Faculty Dean or Director of Administration: MAUREEN MACDONALD
- Executive Director, Finance & Planning (Academic)

Submitter: PAUL MCNICHOLAS
REPORT TO THE UNIVERSITY PLANNING COMMITTEE
FROM
UNDERGRADUATE COUNCIL

FOR APPROVAL

Program Closures

i. **Addiction Careworker Diploma and Addiction Studies Certificate** (Attachment I)

At its meeting of November 14, 2017, Undergraduate Council approved a proposal to close the Addiction Careworker Diploma and Addiction Studies Certificate programs. These two programs have a longstanding history as very successful, flagship programs at the Centre for Continuing Education. However, there have been significant changes in the field, most notably an increased emphasis on professionalization, that have required substantial revision of the programs. In order to best facilitate and signal these changes, it was determined that the current programs would be closed and two new programs will be developed. The proposal is to close the program following the final intake date of February 15, 2018; students in the program will have 18 months to complete the program as it winds down. Students who have completed less than 50% of the current program may transfer into the new program.

The Undergraduate Council now recommends,

*that the University Planning Committee approves, for recommendation to Senate, the closure of the Addiction Careworker Diploma and Addiction Studies Certificate programs, effective February 16, 2018, as outlined in Attachment I.*

ii. **Honours Bachelor of Health Sciences Global Health Specialization** (Attachment II)

At its meeting of December 5, 2017, Undergraduate Council approved a proposal to close the Honours Bachelor of Health Sciences Global Health Specialization program. The Global Health Specialization has been under review for the last two years. The Level III entry program was restructured last year and further review has lead to the decision to close the specialization rather than further revising it. The result of the closure will enhance student engagement with global health content rather than diminish it; Honours B.H.Sc. students will be able to concentrate their studies through the Interdisciplinary Minor in Global Health and can opt to do a senior thesis in the subject. The final intake into the Global Health Specialization will be September 2018.

The Undergraduate Council now recommends,

*that the University Planning Committee approves the closure of the Honours Bachelor of Health Sciences Global Health Specialization program, for recommendation to Senate, effective September 2019, as outlined in Attachment II.*

University Planning Committee
January 17, 2018
I am writing to request your support in the closure of the Addiction Careworker Diploma and Addiction Studies Certificate program offered through the Centre for Continuing Education (CCE). In its place we propose to launch a fully revised Certificate and Diploma program aligned to meet the current needs of addiction professionals.

History
CCE has offered studies in addiction since the 1980s. Courses and formal programming have undergone various transformations over the decades while the Academic Submission for the current Addiction Certificate and Diploma program was approved in 2001. Since 2001, the program has undergone regular updates to the curriculum to keep abreast with emerging trends and changing needs in the addiction field.

Description of the Current Program
The Addiction Careworker Diploma is a series of 10 courses including six core courses and four electives. In the Addiction Studies Certificate, the student completes any 15 units of study.

Diploma Core Courses (all required)
- ADD 827 Introduction to Addiction (3 units)
- ADD 828 Problem Management Skills for Helpers (3 units)
- ADD 829 Concepts and Dimensions of Group Work Practice (3 units)
- ADD 830 Solution Focused Approaches in Addiction Counselling (3 units)
- ADD 874 Pharmacology and Drug Abuse (2 units)
- ADD 862 Case Management and Report Writing (2 units)
Skill Development Elective Courses (4 units required)

- ADD 888 Assessment of Addictive Behaviour (2 units)
- ADD 876 Concurrent Disorders in Addiction (2 units)
- ADD 122 Counselling Techniques in Addiction Practice (2 units)
- ADD 899 Crisis Intervention (2 units)
- ADD 899 Diversity and Special Issues (2 units)
- ADD 498 Self-Help/Mutual-Aid (2 units)
- ADD 471 EAP II: Counselling for the Workplace: Principles of EAP Intervention (2 units)
- ADD 895 Treatment of Addictive Behaviour (2 units)
- ADD 812 Understanding & Preventing Relapse (2 units)
- ADD 803 The Whole Person: Application of Personality Theories in Addiction (2 units)

General Elective Courses (4 units required)

- ADD 813 Adult Children of Alcoholics (2 units)
- ADD 831 Co-Dependency as an Addiction: A Critical Review (2 units)
- ADD 470 EAP I: Wellness & Work: Introduction to Employee Assistance Programs (2 units)
- ADD 832 Older Canadians and Substance Abuse (2 units)
- ADD 831 Professional Ethics and Helping (2 units)
- ADD 406 Program Development (2 units)
- ADD 894 Youth and Addiction (2 units)
- ADD 101 Independent Study (2 units)
- ADD 400 Practical Experience Elective (2 units)
- ADD 879 Working with Families & Addiction (2 units)
- ADD 121 Working with Problem Gambling (2 units)
- ADD 892 Working with Women & Addiction (2 units)

Current Situation

The current Certificate and Diploma program is in a good position. We have earned a reputation as an education leader in addiction studies. Due to the online course format we have used in the program, we have attracted a national audience and are well-known by employers across Canada. There is a relationship between the program and the main certifying body, the Canadian Addiction Counsellor Certification Federation. In particular, the Diploma has been recognized as meeting the educational requirements for its primary addiction counsellor certification. Enrollment is steady and strong.

However, over the past few years, the addiction field has undergone significant professional reflection and rebranding. This is due, in part, to the Psychotherapy Act and the interests of many addiction workers to professionalize the field and have their own regulation or certification to oversee the profession (the field is currently unregulated). The results are that employers are requiring greater education when they are hiring addiction counsellors and a push for more job-ready applicants who require less workplace training.
Although the current program remains strong at this time, the field is changing at a fairly rapid pace and the program will become outdated in the near future. We feel that this is the ideal time to launch a newly revised Certificate and Diploma program to meet the changing needs of graduates and employers alike.

Research Process
A review of the Addiction Education program offered through the Centre for Continuing Education was undertaken early in 2016. The first stage of the review included a scan of potential competitors with comparable programs, review of enrolment and student demographic trends, program effectiveness interviews with instructors and employers, and a survey of graduates of the program.

As a result of the findings, it was determined that a small working group would be struck composed of instructors teaching in the program and community agencies/organizations who have employed graduates of the program and are familiar with the current challenges of working with people with addictions. The task of the working group was to examine (i) the current program with respect to the appropriateness of the program-level learning outcomes and (ii) the existing courses with respect to their potential to accomplish the intended outcomes of the program.

The working group was composed of seven individuals who met on ten occasions between December 2016 and June 2017. Discussion was facilitated by an outside consultant. As a result of these discussions, the program-level learning outcomes were re-written, and the program’s courses were redesigned to align with the revised outcomes. Other important work undertaken by the working group was consideration of alignment of the program with the criteria of the Canadian Addictions Counsellors Certification Federation (CACCF) as well as discussion of including a practical, hands-on experience for students in the program.

Results
Most significantly, a change is required in the application requirements to the program to ensure that our graduates have an existing foundation in a related field such as health, counselling, mental health, community and social services, community justice, law enforcement, or public health. This is a result of employers seeking applicants who are trained in a specific profession, but who also possess specific addiction training. At the same time, the afore-mentioned areas of study do not address addiction in enough depth to meet employers’ needs. Additionally, employers no longer value a stand-alone diploma in addiction studies as enough to work in the field.

The current program includes 28 course offerings. These courses need to be condensed and reconfigured to a more manageable program offering. As the courses are redesigned, we propose to reflect themes and content that have become mainstream in the industry since the current certificate and diploma were developed in 2001. Examples of these focus areas include trauma informed care, concurrent disorders, contemporary treatment approaches, behavioural and process addictions.
New Direction
The proposed changes to the current program are significant and progressive. We feel that rather than making revisions to the existing curriculum, it is appropriate to redesign the program learning outcomes and corresponding course outcomes from the ground up. A program submission for the Certificate and Diploma committee is being submitted at this time.

Program Phase Out
We recommend that the Addiction Careworker Diploma and Addiction Studies Certificate program be phased out over 18-24 months. We will restrict program enrollment commencing February 15, 2018 so that new students can complete within a reasonable time.

Every effort will be made to ensure that students, who are currently enrolled, have the opportunity to complete their certificate or diploma before the present program is retired.

The following steps will be taken to communicate the closure of the program and manage the wind down phase:

- Instructors will be informed and consulted regarding course scheduling for the wind down period.
- An email will be sent to all students who have been enrolled in the Addiction Careworker Diploma or Addiction Studies Certificate program and have taken a course since September 2012 (five years).
- Students will be given a period of 18 months to complete the program. Courses will be scheduled to maximize student completion.
- Communication about the closure of the program will be posted on the CCE website, indicating that new applications will be received until February 15, 2018. It will be clearly communicated that the current program will be closing and that students have a window of 18 months from mid-February 2018 to complete all program requirements (18 months is a typical length of time taken for the diploma completion).
- Existing students will be informed of the option of transferring to the proposed new Certificate or Diploma in fall 2018, provided that they meet the new entrance requirements. Transfer of courses already completed in the current program will be facilitated. Students must have completed no more than 50% of the current program in order to be eligible for transfer.

CCE is committed to helping all current students complete either the Addiction Careworker Diploma or Addiction Studies Certificate program, if that is their wish. We are also committed to working with our instructors to maintain good relationships and to garner their support in creating a smooth and professional wind down of the program and transition to the proposed new program.
In summary, CCE wishes to inform the Certificate and Diploma committee of its plan to close the current Addiction Careworker Diploma and Addiction Studies Certificate program in order to initiate our scheduling and communications plan for the new program.

I trust that you will support our decision to approve the closure of the Addiction Careworker Diploma and Addiction Studies Certificate program. We look forward to presenting the proposal for a new Certificate and Diploma program in professional addiction studies.

Sincerely,

Lorraine Carter
Director, Centre for Continuing Education
1 James Street North (OJN), 3rd Floor
SUMMARY

The BHSc (Hons) Program proposes to formally discontinue the Global Health Specialization (GHS) sub-plan in favour of a revised approach to global health curriculum that will provide more flexibility and interdisciplinarity for students with an interest in global health, and closer collaboration with other departments and faculties. It should be noted that although this is technically a program closure, the restructuring actually 

enhances 

student access to global health studies and simultaneously makes better use of resources by addressing a mismatch between demand for opportunities to study global health and completion rates of the GHS itself.

The new structure of the global health curriculum for BHSc (Hons) students will be more flexible, allowing students to engage at a level corresponding to their individual interests. A major component of the restructuring is the incorporation of BHSc HTHSCI global health courses as part of the Interdisciplinary Minor in Globalization & Health in the new Theme of Globalization & Health; this integration was accomplished in a very productive collaboration with the Institute for Globalization & the Human Condition and the Faculty of Social Sciences over the past year.

Under the proposed changes, students can take just a few courses on global health, pursue the Interdisciplinary Minor in Globalization & Health focused in the new Theme of Globalization & Health, or opt for an intensity of exposure equivalent to the old GHS by completing the minor and pursuing a senior project or thesis in global health through the existing HTHSCI 4G courses (which will continue to exist).

A modified version of the GHS is included in the current submission to UGC as a transitional measure for students who entered the BHSc (Hons) Program in 2016; this cohort will have the opportunity to apply for Level III entry to the GHS in Fall 2018, which will be the last intake into the Specialization.

KEY ISSUES MOTIVATING RESTRUCTURING

The Global Health Specialization (GHS) is a Level II-entry sub-plan of the BHSc (Hons) degree that was introduced in 2008. In assessing the status of the GHS over the past 2 years, we have come to the conclusion that it would be desirable to create a new structure within which students could pursue a focus in global health in their studies, but not as an exclusive specialization with competitive entry at Level II.

1. **EXCESS DEMAND PLUS SIGNIFICANT RATE OF NON-COMPLETION:** After a competitive entry process for spots at the Level II entry point, a significant proportion of students in the GHS would leave the Specialization before completing it. Most often this is because they were admitted to professional programs and transferred to graduate after Year 3, with another smaller fraction of
students leaving the GHS for other reasons prior to completion of 4th year. Over the past 4 years, completion rates of the GHS, compared with the excess demand for the GHS, are as follows:

<table>
<thead>
<tr>
<th></th>
<th>GHS completion rate</th>
<th>excess demand (fraction of applicants not accepted to the GHS in that cohort)</th>
</tr>
</thead>
<tbody>
<tr>
<td>2014</td>
<td>78%</td>
<td>47%</td>
</tr>
<tr>
<td>2015</td>
<td>73%</td>
<td>24%</td>
</tr>
<tr>
<td>2016</td>
<td>70%</td>
<td>33%</td>
</tr>
<tr>
<td>2017</td>
<td>40%</td>
<td>56%</td>
</tr>
</tbody>
</table>

This mismatch between completion and demand has several undesirable consequences:

- Senior HTHSCI courses in global health were often significantly under-enrolled. Although the majority of these courses were open to students outside the GHS by permission of the instructor, there was limited uptake (most likely due to the fact that the 2nd year courses in Global Health were restricted to students in the GHS, and so there was no clear ‘pipeline’ for non-GHS students to the senior level courses).
- The mismatch between the demand and the rates of completion resulted in many students interested in the GHS who were not admitted to the Specialization in Year 2, yet significant excess capacity to teach more students in the GHS by Year 4 because of the departure of students prior to completion.

2. **DESIRE FOR MORE FLEXIBLE ENGAGEMENT WITH STUDIES IN GLOBAL HEALTH:** Under the previous structure, students had to apply to the specialization at the end of Level I, before they had exposure to global health curriculum. Because Level II was the only entry point, it created some undesirable dynamics in student decisions about the specialization: some students would apply (and enter) the GHS even if they were not entirely committed, simply because there would be no future opportunity to do so; at the same time, others entered the Specialization at Level II but changed their minds later on, contributing to the excess unused capacity in the GHS.

3. **ENHANCE INTERDISCIPLINARITY:** Global health is an inherently interdisciplinary field. We were interested in enhancing the interdisciplinarity of the global health curriculum, both in terms of BHSc (Hons) students taking courses relevant to global health in other departments, and in having students from other programs with an interest in global health able to take the BHSc HTHSCI courses offered in that area.

**PROCESS THUS FAR**

We initiated these processes in our curriculum changes presented to UGC in Fall 2016, indicating that there would be no Level II intake into the GHS in 2017-18 as the Specialization underwent restructuring, and that students in that cohort would be offered a revised form of the specialization for a Level III entry. At that time we communicated to UGC that we were pursuing a collaborative enterprise with the Institute for Globalization & the Human Condition and the Faculty of Social Sciences to incorporate the BHSc global health HTHSCI courses into the existing Interdisciplinary Minor in Globalization & Health (IMGH). In addition, we indicated that we had held consultations with students in the program in the Fall of 2016 and they were broadly supportive of the goals of the restructuring process that we have pursued this past year.
At this point, the restructuring of the global health curriculum in BHSc (Hons) stands thusly:

1. **MODIFICATIONS TO THE IMGH:** After a very constructive and collaborative process with the Institute for Globalization & the Human Condition and the Faculty of Social Sciences, changes to the IMGH to incorporate the BHSc HTHSCI courses on global health are on the current UGC agenda. The revised IMGH has created a new theme on “Globalization and Health”, integrating the existing BHSc HTHSCI courses that previously comprised the GHS as well as courses related to globalization and health from other departments and programs.

2. **MODIFIED FORM OF THE GHS FOR CURRENT LEVEL II STUDENTS:** In our 2016 presentation of curriculum changes to UGC, we indicated that students in Level I in 2016 (for whom there would be no intake to the GHS in 2017) would be able to apply to enter a revised form of the GHS in Level III in 2018-19 as a transitional measure.

   The structure of that transitional form of the GHS for this cohort is included in these curriculum revisions; it is comprised of a Level III entry, requiring a comparable number of units of course work in global health as the GHS.

   Note that students in this cohort who are interested in global health do not necessarily have to pursue the GHS; with the changes to the IMGH, they will also have the option of pursuing a minor focused on the Globalization & Health Theme in the revised minor if they wish, and they will be counselled accordingly pending approval.

3. **COMMUNICATION TO CURRENT LEVEL I STUDENTS:** For students who entered Level I of the BHSc (Hons) Program in September 2017, the Undergraduate Calendar Copy for 2017-18 indicated that those Level I students interested in global health should consult with a student advisor.

   Level I students this year have been counselled that the global health curriculum is being restructured, and that they will be able to pursue their interests in global health under a revised structure to be announced after approval by UGC. In addition, changes to the prerequisites for our Level II course in Global Health, HTHSCI 2DS3 – Complexities of Disease States, opens the opportunity for early exposure to global health to a larger number of interested students.

4. **REVISION OF CALENDAR COPY:** In the calendar revisions brought forward to UGC for 2018-19, the Program Overview section has been revised to reflect these changes, communicating clearly to BHSc (Hons) students and applicants that opportunities to focus their studies on global health continues to exist in the BHSc (Hons) Program, albeit in a different structure.
December 2017

TO: University Planning Committee and Senate

FROM: Susan Searls Giroux Doug Welch
Vice-Provost, Faculty Vice-Provost and Dean of Graduate Studies

RE: 2015-16 and 2016-17 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.
2015-16 IQAP CYCLICAL PROGRAM REVIEWS

The following undergraduate programs were reviewed during 2015-16:

Honours Integrated Science (iSci)
Civil Engineering
Computer Science
Mechatronics Engineering
Software Engineering
Engineering & Society
Materials Engineering

2016-2017 IQAP CYCLICAL PROGRAM REVIEWS

The following programs were reviewed during 2016-17:

Undergraduate Programs
Art History
Economics
Physician Assistant Education Program
Studio Art

Graduate Programs
French M.A.

Joint Undergraduate and Graduate Reviews
School of Labour Studies (Labour Studies B.A., Honours B.A. and Work and Society M.A.)

The Final Assessment Reports for the reviews are attached.
FINAL ASSESSMENT REPORT

Institutional Quality Assurance Program (IQAP) Review

Honours Integrated Science (iSci)

Date of Review: March 3 - 4, 2016

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 Honours Integrated Science program delivered by the School of Interdisciplinary Science. This report identifies the significant strengths of the programs, 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 Cyclical Program Review of the Undergraduate

Honours Integrated Science Program (iSci)

In accordance with the Institutional Quality Assurance Process (IQAP), the iSci program submitted a self-study in February 2016 to the Associate Vice-President, Faculty to initiate the cyclical program review of its undergraduate 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, one from Ontario and one from British Columbia and one internal reviewer were endorsed by the Dean, Faculty of Science, and selected by the Associate Vice-President, Faculty. The review team reviewed the self-study documentation and then conducted a site visit to McMaster University on March 3 - 4, 2017. The visit included interviews with the Provost and Vice-President (Academic); Associate Vice-President, Faculty, Director of the School of Interdisciplinary Science and meetings with groups of current undergraduate students, full-time faculty and support staff.

The Director of the School of Interdisciplinary Science and the Dean of the Faculty of Science submitted responses to the Reviewers’ Report (July 2016, August 2017). Specific recommendations were discussed and clarifications and corrections were presented. Follow-up actions and timelines were included.
**Strengths**

In their report (May 2016), the review team highlighted the comprehensive and coordinated design and implementation of the program and emphasized the project based, integrated approach. They recognized that a foundation of the iSci program is its underlying philosophy and core set of pedagogical approaches that are shared by the instructional team and students. The program focuses on developing the student as a self-guided learner and creator of information and helps them develop a suite of skills and experiences that prepares them well for a range of professional opportunities. The core goals of the program are very successfully mapped to its articulated learning outcomes. The focus throughout the program on science literacy was identified as particularly unique and well done. Additionally, the reviewers commented on the strength of the instructional team (faculty and staff) both in terms of their formation of community scholars and in their commitment to the scholarship and practice of teaching and learning.

**Areas of Improvement**

The review team had no major concerns but did identify a potential threat to the stability of the program on several fronts. Specifically they were concerned about the leadership and governance of the program in the newly formed School of Interdisciplinary Science, the stability of the instructional team in terms of both faculty and staff, and the importance of the retention of the associated instructional spaces.

The Dean of the Faculty of Science, in consultation with the Director of the School of Interdisciplinary Science shall be responsible for monitoring the recommendations implementation plan. The details of the progress made will be presented in the progress report and filed in the Associate Vice-Present, Faculty’s office.
### Summary of the Reviewers’ Recommendations with the Department’s and Dean’s Responses

<table>
<thead>
<tr>
<th>Recommendation</th>
<th>Proposed Follow-Up</th>
<th>Responsibility for Leading Follow-Up</th>
<th>Timeline for Addressing Recommendation</th>
</tr>
</thead>
<tbody>
<tr>
<td>iSci needs to appoint a faculty member from SIS to be responsible for the day-to-day operations of the program</td>
<td>The School of Interdisciplinary Science (SIS) was created on January 1, 2016 and with its creation, the iSci program was moved into SIS. From January – May 2016, the operational structure of SIS was established in a collaborative manner with those faculty and staff who had their appointments and positions moved into the School. The members of SIS voted to establish a structure including as Associate Director, Curriculum and Pedagogy and 3 Program Coordinators (iSci, Life Sciences and Medication Radiation Sciences and Medical Physics)</td>
<td>Dr. Maureen MacDonald, Director SIS</td>
<td>April 25, 2016: Retreat for SIS members to discuss proposals for operational structure and terms of reference for positions. April 2, 2016: Revised Terms of Reference for position of Program Coordinator iSci circulated to all members of SIS. May 20, 2016: Dr. Kim Dej elected as Associate Director, Curriculum and Pedagogy June 2, 2016: offer of Appointment of Program Coordinator iSci position to Dr. Carolyn Eyles June 13, 2016: Senate approval of appointment confirmed July 2, 2016: start of</td>
</tr>
<tr>
<td>iSci program enrolment should not increase.</td>
<td>We thank the reviewers for the recognition of the efforts made to refine the student selection process in iSci and agree that the efforts have resulted in improvement in the match between the students receiving offers and student success in the program. We are committed to offering a high quality, research project focussed program and recognize the restraints in terms of enrolment. We have no intention of expanding beyond the 64 student capacity in each level of iSci but will work with enrolment management to explore the options and potential impacts of different enrolment options in the future.</td>
<td>Dr. Maureen MacDonald, Director SIS</td>
<td>Fall 2016: aim to achieve target of 64 students in level 1 iSci - Yearly: feedback from iSci Program Coordinator, Associate Director and School Administrator to inform enrolment recommendations to the Associate Dean, Undergraduate</td>
</tr>
<tr>
<td>iSci needs increased library support.</td>
<td>We recognize the tremendous benefits of the specialized support available to encourage the development of science literacy and communication skills in iSci. We are planning to build on this foundation of success to develop and integrate science literacy in all programs in SIS. As such, we are thankful for the initiative of the University Librarian to continue to provide access to the Thode Services Librarian and to support a 12 month contract for a School of Interdisciplinary Science Librarian through a successful Strategic Alignment Fund application.</td>
<td>Dr. Kim Dej, Associate Director, Curriculum and Pedagogy</td>
<td>-April 2016: provide feedback to posting for a 12 month position as Science Fluencies Librarian -August 2016: Hiring of Science Fluencies Librarian -August 2016 – July 2017: work in collaboration with Science Fluencies Librarian to develop materials and instructional programming to</td>
</tr>
<tr>
<td>A research project on computer science that involves basic programming should be component of the iSci curriculum</td>
<td>Explore the possibility of developing a computer science research project and to enhance the computer programming opportunities embedded in many aspects of the iSci curriculum.</td>
<td>Dr. Carolyn Eyles, Program Coordinator, iSci</td>
<td>- May 2016: during yearly iSci program review meetings discuss the computational opportunities available in levels 1 and 2 and the provision of relevant data sets to increase integration of computational activities across topics. -August 2016: form working group to explore computer science and computational opportunities</td>
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<td>Stability of the Teaching Team needs to be improved.</td>
<td>Part of the formation of SIS was stabilize the commitment of faculty associated with its academic programs. As such, several members of iCore have had their academic appointments</td>
<td>Dr. Maureen MacDonald, Director</td>
<td>- January – April 2016: Faculty appointments for iCore faculty</td>
</tr>
</tbody>
</table>
transferred to the School. The Director of SIS, in consultation with the Associate Director, the Program Coordinators, and the School Administrator is looking to further stabilize the collaborative teaching commitments from other units in the Faculty of Science. Further stability to iSci teaching team will be considered in future requests for faculty positions.

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| SIS | members transferred to SIS (Eyles, Harvey, Symons).
| - January – July 2016: ongoing discussions between M. macDonald and Department Chairs and Directors about establishing more stability for teaching commitments from other units towards iSci.
| - July 2016 onward: Program Coordinator for iSci to develop 5 year plan for teaching in iSci
| - Fall 2016 develop 5 year strategic plan for hiring in SIS to systematically submit request to Faculty Appointments Committee for consideration. |

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iSci should expand its Community Engaged Learning (CEL) initiatives.

We thank the reviewers for highlighting the success of a number of the community based projects linked to iSci and agree with the suggestions to build on this foundation to expand the scope of community engaged learning initiatives.

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| Dr. Kim Dej, Associate Director, Curriculum and Pedagogy | - January 2016 onward: communication with Dr. Sheila Sammon, Director of Community Engagement, on the topic of Community |

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<p>| Agenda Item VI | |</p>
<table>
<thead>
<tr>
<th>Engagement, Student Leadership &amp; Peer Mentoring in SIS.</th>
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<tbody>
<tr>
<td>-June 2016: Establishment of the Students as Partners Committee as outlined in the SIS Bylaws. This committee will assist in the identification and engagement of SIS students in community-based projects.</td>
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</tbody>
</table>
Dean’s Response, Faculty of Science:

The Dean thanks the review team for the report and notes that due to turnover in the Office of the Dean of Science, the response of the Dean has been considerably delayed. The Dean would also like to acknowledge that at the time of both the site visit and the preparation of the program response, she was in the role of Director of the School of Interdisciplinary Science (SIS) and therefore was responsible for the leadership of iSci and the associated IQAP review.

The Dean highlights that under the guidance of its new academic home in SIS, iSci has moved forward with a number of the recommendations including the appointment of a faculty member responsible for the day-to-day operations of the program (iSci Program Coordinator), provision of stability in some areas of the teaching team, particularly in the agreements with Departments in the Faculty of Science for the provision of TA’s and instructors and in the hiring and organization of laboratory and administrative staff.

The Dean also notes that the relatively high cost of the program for the number of students served, the year over year declining application rates and the fairly high degree of attrition out of the program (and the difficulties in accommodating these students in other programs due to the unique course structure in iSci) present ongoing concerns to be addressed by the leadership of iSci and SIS.

The Dean encourages the continued expansion of innovations in teaching and learning in iSci to other programs in the Faculty of Science and other Faculties at McMaster; however, also encourages the program to be open to adjustments to their delivery model, resourcing, use of space and collaboration, particularly with the other programs in SIS.

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 an 18-month progress report and a subsequent full external cyclical review to be conducted no later than 8 years after the start of the last review.
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 undergraduate programs delivered by the Department of Civil Engineering. This report identifies the significant strengths of the programs, 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 Cyclical Program Review of the Undergraduate Civil Engineering Program

In accordance with the Institutional Quality Assurance Process (IQAP), the Department of Civil Engineering submitted a self-study in January 2016 to the Associate Vice-President, Faculty to initiate the cyclical program review of its undergraduate 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.

One arm’s length external reviewer from Ontario and one internal reviewer were endorsed by the Dean, Faculty of Engineering, and selected by the Associate Vice-President, Faculty. The review team reviewed the self-study documentation and then conducted a site visit to McMaster University on March 31 – April 1, 2016. The visit included interviews with the Provost and Vice-President (Academic); Associate, Faculty, Dean and Associate Dean of the Faculty of Engineering, Chair of the department and meetings with groups of current undergraduate students, full-time faculty and support staff.

The Chair of the department and the Dean of the Faculty of Engineering submitted responses to the Reviewers’ Report (October 2016). Specific recommendations were discussed and clarifications and corrections were presented. Follow-up actions and timelines were included.
The Final Assessment Report was prepared by the Quality Assurance Committee to be submitted to Undergraduate Council, and Senate (December 2016).

**Strengths**

In their report (September 2016), the Review Team noted several strengths of the Civil Engineering program:

- High quality undergraduate program
- Forward looking, and innovative with an emphasis on experiential learning
- Program of high value, attracts high-achieving students
- Highly motivated and knowledgeable faculty members
- Five new faculty members added since 2010
- Outstanding group of faculty
- Four endowed chairs and one Canada Research Chair
- The volume of research and publication is outstanding
- 30% of the students in all years of Civil Engineering are on the Dean’s Honour List

**Areas for Improvement and/or Enhancement**

In their report, the reviewers noted that despite improvements over the past five years, there remains room for improvement in teaching effectiveness in some cases. Some instructors would benefit from workshops offered by MIIETL on the newest pedagogical innovations for improving student engagement. Further, work is required to improve the communication skills of TAs, along with effort to improve the knowledge of some TAs in the courses to which they are assigned. Students would also feel better prepared for the job market if more opportunities were available to acquire facility in using analysis and design software and software related to computer graphics for civil engineers, especially AutoCAD. More instruction in the area of transportation is needed but this requires hiring of more faculty with this specialization. Finally, with an eye to future planning, the department’s enrolment has increased to saturation over the past five years. Further increases in student numbers would threaten the impressive improvements made over the past five years unless commensurate increases in faculty hires and physical space are provided. Laboratories and their equipment would need to be provided.

The Dean of the Faculty of Engineering, in consultation with the Chair of the Department Civil Engineering shall be responsible for monitoring the recommendations implementation plan. The details of the progress made will be presented in the progress report and filed in the Vice-Provost, Faculty’s office.

**Summary of the Reviewers’ Recommendations with the Department’s and the Dean’s Responses**

**Recommendations**

<table>
<thead>
<tr>
<th>Recommendation</th>
<th>Proposed Follow-Up</th>
<th>Responsibility for Leading Follow-Up</th>
<th>Timeline for Addressing Recommendation</th>
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<tbody>
<tr>
<td>Attention should be paid to the drop in</td>
<td>Issue will be addressed through a memo to the Department Chair</td>
<td>Over next 12 months, with continuing</td>
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<tr>
<td>Agenda Item VI</td>
<td>Department Chair</td>
<td>Over next 12 months, with continuing evaluation of effectiveness</td>
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<tr>
<td>student performance from high school to Year 1 Engineering</td>
<td>Associate Dean, with a cc to the director of Level 1.</td>
<td>evaluation of effectiveness</td>
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<tr>
<td>Consideration should be given to establishing contact between the Department of Civil Engineering and the students in Year 1 of the undergraduate program through teaching of some of the course material in Year 1.</td>
<td>Chair to discuss possible increase in exposure of Civil Engineering to Level 1 students with Director, Level 1.</td>
<td>Department Chair</td>
<td></td>
</tr>
<tr>
<td>Hires should be made to augment instruction in transportation planning and pavement design.</td>
<td>A Transportation Hire search will be conducted in 2016/17 for July 1/17 start.</td>
<td>Department Chair</td>
<td></td>
</tr>
<tr>
<td>Consideration should be given to provide more opportunities for students to improve their knowledge of software tools related to analysis and design of civil engineering systems, such as Revit and SAP. Similar improved instruction should be given in the use of civil engineering graphics, such as plans and elevations, and in the use of computer graphics programs, such as AutoCAD.</td>
<td>The issue to be considered by the structural/geotechnical curriculum committee (where Revit, SAP and AutoCAD are most germane) with a general discussion at a future departmental meeting.</td>
<td>Department Chair</td>
<td></td>
</tr>
<tr>
<td>Attention should be paid to re-evaluating the Capstone project to allow more choice of topics.</td>
<td>Direction has been given to the capstone course instructors to expedite this point.</td>
<td>Department Chair</td>
<td></td>
</tr>
<tr>
<td>Instructors should be strongly encouraged to use the workshops and individual assistance</td>
<td>Encouragement to fully use MIEETL resources will be done now and over time by the</td>
<td>Department Chair</td>
<td></td>
</tr>
<tr>
<td>Offered by MIIETL to continue to develop their teaching effectiveness.</td>
<td>Department Chair</td>
<td>Over next 12 months, with continuing evaluation of effectiveness.</td>
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<tr>
<td>The department and Faculty should give attention to improving student awareness in Year 1 of the importance of oral and written language skills in all career options.</td>
<td>Issue will be addressed through a memo to the Associate Dean, with a cc to the Director, Level 1. Year 1 has enhanced reporting requirements of ENG 1P03 and 1C04 to include more report writing.</td>
<td>Department Chair</td>
<td></td>
</tr>
<tr>
<td>TAs should be strongly encouraged to improve these skills, as well as their teaching skills, through offerings at MIIETL and with the help of the School of Graduate Studies.</td>
<td>Improvements to the training of TAs will be expedited at the start of the 2016/17 academic year through a mentoring program and workshop offerings. We will also initiate a formal exit evaluation for TAs at the end of each term.</td>
<td>Department Chair</td>
<td></td>
</tr>
<tr>
<td>Student evaluation of individual TA performance should be undertaken by all instructors</td>
<td>The evaluation process for individual TA performance will be expedited for the start of the 2016/17 academic year</td>
<td>Department Chair</td>
<td></td>
</tr>
<tr>
<td>Consideration should be given to the optimum number of students to be accepted into Civil Engineering programs.</td>
<td>Ongoing discussions will continue on this issue with the Associate Dean’s Office, in the context of lab space, TA resources, technician resources and other constraints</td>
<td>Department Chair</td>
<td></td>
</tr>
<tr>
<td>Attention should be paid to providing a more advocacy-based approach in finding appropriate co-op positions</td>
<td>Issue will be addressed through a memo to the Associate Dean with a cc to the Manager of the Engineering Co-op and Career Services office.</td>
<td>Department Chair</td>
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</tbody>
</table>

**Dean’s Response:**
As detailed in the Chair’s response, the recommendations in the review have led to a series of on-going discussions and actions within the Department, the major ones of which are the approval of a new Faculty position in Transportation, a discussion surrounding providing further opportunities for enhanced use of advanced software tools in the curriculum (e.g. advanced design and drawing tools), widening of the capstone project experience, increased interaction between instructors and MIETL, and enhanced training of TAs to improve the undergraduate experience. A number of these actions have been completed with the majority being address on an on-going basis. Several other actions, more appropriately addressed at the Faculty level (e.g. an enhanced co-op positions), are also on-going.

Overall, the dean is satisfied with the replies of the department to the concerns raised by the IQAP reviewers.

**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 an 18-month progress report and a 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
Computer Science
Undergraduate Program

Date of Review: March 28 – March 29, 2016

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 undergraduate programs delivered by the Department of Computing and Software. This report identifies the significant strengths of the programs, 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 Cyclical Program Review of the Undergraduate Computer Science Program

In accordance with the Institutional Quality Assurance Process (IQAP), the Department of Computing and Software submitted a self-study in January 2016 to the Associate Vice-President, Faculty to initiate the cyclical program review of its undergraduate 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.

One arm’s length external reviewer from the Ontario and one internal reviewer were endorsed by the Dean, Faculty of Engineering, and selected by the Associate Vice-President, Faculty. The review team reviewed the self-study documentation and then conducted a site visit to McMaster University on March 28 – March 29, 2016. The visit included interviews with the Provost and Vice-President (Academic); Associate Vice-President, Dean and Associate Dean of the Faculty of Engineering, Faculty, Chair of the department and meetings with groups of current undergraduate students, full-time faculty and support staff.

The Chair of the department and the Dean of the Faculty of Engineering submitted responses to the Reviewers’ Report (January 2017). Specific recommendations were discussed and clarifications and corrections were presented. Follow-up actions and timelines were included.
The Final Assessment Report was prepared by the Quality Assurance Committee to be submitted to Undergraduate Council and Senate (December 2017).

**Strengths**

The main strengths of the Computer Science program are the following:

- The program has a solid curriculum with a mixture of fundamental courses, experiential learning courses, and electives (10 open and 6 technical). The current curriculum was introduced in 2013/14. It helped reduce the Level 1 to Level 2 attrition from over 50% to about 3%. We expect that the 5 new experiential learning courses (called *practice and experience courses*) will have a major positive impact on the student learning experience. We are still in the process of finding the best way to deliver these innovative courses. The 16 open and technical electives allow our Computer Science students to develop a tailored program that is built on a solid computing foundation. We are encouraging our students to develop (1) program plans for combining computer science with their interests and career aspirations using the electives and (2) portfolios that showcase the work they produce by implementing their program plans.
- The program is attracting well-prepared and highly motivated students.

In their report (April 2016), the Review Team highlighted the additional following strengths of the program:
- The program’s “focused approach to training the practice of computer programming and software design”.
- The program faculty and staff are concerned with “how the [students] are taught and how they learn”.
- The experiential *practice and learning courses* that provide students with hands-on experience with computer programming are “well thought out and offers a forward thinking approach to engaging [the] students in their education”.
- The program prepares students both for employment immediate after graduation and for graduate studies in computing.
- The program faculty are actively reaching out to industry and local schools.
- The program is supported by a faculty that includes “some very strong researchers, in a variety of research areas”.
- The program faculty are rich in international diversity.
- The program has a deep candidate pool.
- The Computer Science program is being monitored by the same learning-outcomes process used for the Department’s Mechatronics and Software Engineering programs.

**Areas for Improvement and/or Enhancement**

The main areas for improvement of the program are the following:
• Some of the required courses in the Computer Science program must be combined with required courses of the Software Engineering program. In 2015/16 there were 11 of these combined courses of these combined required courses with 200-300 students. Not only are these courses very large, they include two very different cohorts of students. The CS students have a higher admission average than SE students, take three computing courses in Level 1 versus the single course SE students take in Level 1, and have a lower course load than SE students (5 versus 6-7 course per term). As a result, the CS students are under challenged, while the SE students are over challenged. This is directly reflected in the course evaluations: An instructor who teaches a combined required course nearly always receives a significantly higher rating from the CS student than from the SE students with a CS Question 1 mean that is often 1 – 2 points higher than the SE Question 1 mean. 7 of the 11 combined required CS and SE courses will be taught separately in 2017/17 at the price of hiring more sessional lecturers.

• The Department’s undergraduate student to faculty ratio is 34.4. As a result, nearly all the courses in the CS program are large. The combined required CS and SE courses mentioned above usually have about 240 students; uncombined CS required courses have about 80 students; and most technical electives have about 50 students.

• The department does not have a sufficient number of technical electives in the application areas of computer science. The department does not have the expertise in the Department faculty to teach important application courses like computer graphics, machine learning, and artificial intelligence, nor does the Department have the teaching capacity to deliver a larger number and range of technical electives.

• The student experience is being diminished by the large number of courses that are being taught by sessional lecturers: 6 required courses and 6 technical electives in the CS program will be taught by sessional lecturers in 2016/17.

The Review Team noted some other following areas for improvement in the program:

• The main areas for improvement expressed in the report are the “lack of applications of computing topics” and research activities to “entice and attract students to seek graduate studies”.

• The program should provide the students more opportunities to do cutting edge research as part of their undergraduate experience.

• The preparation of the Computer Science students is not in alignment with the preparation of Software Engineering students, which causes a “limit to the depth that more advanced material can be covered for computer science students.”

• The heavy use of sessional lecturers “on an ad hoc basis signals a unit that is stretched and has challenges in teaching its programs.”

**Summary of the Reviewers’ Recommendations with the Department’s and the Dean’s Responses**

**Recommendations**
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</thead>
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<tr>
<td>More of an effort to include undergraduate students in research, coupled with more incentives to attract students into graduate studies.</td>
<td>The Faculty is working on this for all of its undergraduate programs. We are working on implementing a portfolio program for Computer Science students, which could include a research component when appropriate.</td>
<td>CAS Associate Chair for Undergraduate Studies.</td>
<td>March 2017</td>
</tr>
<tr>
<td>A more visible and prominent approach to internationalization</td>
<td>The Faculty is working on this for the entire Faculty. We could include an internationalization component in the CS portfolio program that capitalizes on the rich international diversity of the CAS faculty and the high number of foreign students in McMaster’s CS program. (25% of the CS students entering Computer Science 1 next fall are from outside of Canada).</td>
<td>CAS Associate Chair for Undergraduate Studies</td>
<td>March 2017</td>
</tr>
<tr>
<td>The enrolment is capped at 50 students for CS. If the department wishes and has the resources an increase in the number of CS students may be appropriate</td>
<td>We do not have the teaching capacity to raise the Computer Science enrolment without decreasing the enrolment of our other undergraduate programs. We would like to put our Computer Science and Software Engineering programs into balance by increasing the CS intake per year from 50 to 90 and decreasing the SE intake per year</td>
<td>CAS Chair</td>
<td>March 2017</td>
</tr>
</tbody>
</table>
A recommendation in the previous cycle was to align the CS curriculum more closely with the SE curriculum. This remains an issue.

The CS and SE curricula have been as closely aligned as they can be at Levels 2 – 4. Alignment is needed at Level 1, but this is impossible since SE students begin in the Engineering 1 program. **Done**

A comment that has been raised repeatedly by faculty is the lack of sufficient teaching assistant support. This appears to be an area where a modest investment in additional teaching assistants would ease the stresses of holding large classes.

The Faculty has significantly increased the Department’s TA budget so that we will be able to hire 115 graduate and 52 undergraduate TAs in 2016/17. (We hired 103 graduate and 27 undergraduate TAs in 2015/16). It will be very challenging to find appropriate students to fill all of these TA positions. For that reason, a further increase of the TA budget will likely not have much of an impact. **Done.**

The use of sessional instructors on an ad-hoc basis should be closely monitored to ensure quality and consistency.

Every sessional lecturer will be assigned a full-time faculty member of the Department to serve as a teaching mentor. Moreover, the Department’s Undergraduate Curriculum and Policy Committee will monitor the delivery of the courses at the end of each term and give feedback to the sectional lecturers. **CAS Chair**

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<tr>
<td><strong>Programming courses</strong></td>
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should be sectioned so that CS students could be instructed at their appropriate level.

done for the 7 of the 11 combined required Computer Science and Software Engineering courses. To section the remaining 4 courses would require hiring 4 more sessional lecturers so that we have 26 instead of the current 22.

Faculty Response:

As detailed in the Chair’s response, the recommendations in the review have led to a series of discussions within the Department of Computing and Software (CAS) and the Faculty focused on such items as reduction of class sizes or splitting of the current combined CompSci and Software Engineering course, expansion of the program due to its high demand, the incorporation of undergraduate students in research, internationalization, TA support, and issues with a large number of sessional instructors. The vast majority of the recommendations are currently being addressed or have been completed by the Department and include such items as the splitting of combined CompSci and Software Engineering courses and closer monitoring of session faculty to ensure a high quality of instruction. Unfortunately, some of the recommendations, such as increasing the alignment between the Level 2 CompSci and Software Engineering student backgrounds, cannot be implemented due to the common Engineering 1 entry year at McMaster.

Overall, the dean satisfied with the replies of the Department to the concerns raised by the IQAP reviewers.

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 an 18-month progress report and a 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  
Mechatronics Engineering  
Undergraduate Program

Date of Review: March 31 – April 1, 2016

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 undergraduate programs delivered by the *Department of Computing and Software*. This report identifies the significant strengths of the programs, 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 Cyclical Program Review of the Undergraduate Mechatronics Engineering Program**

In accordance with the Institutional Quality Assurance Process (IQAP), the Department of Computing and Software submitted a self-study in January 2016 to the Associate Vice-President, Faculty to initiate the cyclical program review of its undergraduate 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.

One arm’s length external reviewer from the United States and one internal reviewer were endorsed by the Dean, Faculty of Engineering, and selected by the Associate Vice-President, Faculty. The review team reviewed the self-study documentation and then conducted a site visit to McMaster University on March 28 – March 29, 2016. The visit included interviews with the Provost and Vice-President (Academic); Associate Vice-President, Faculty, Dean and Associate Dean of the Faculty of Engineering, Chair of the department and meetings with groups of current undergraduate students, full-time faculty and support staff.

The Director of the program and the Dean of the Faculty of Engineering submitted responses to the Reviewers’ Report (January 2017). Specific recommendations were discussed and clarifications and corrections were presented. Follow-up actions and timelines were included.
The Final Assessment Report was prepared by the Quality Assurance Committee to be submitted to Undergraduate Council, and Senate (December 2017).

Strengths

In their report (April 2016), the Review Team highlighted the following strengths of the program:

- The program is in line with the university’s priorities (identified in the President’s letter), and in particular, interdisciplinarity (which is one of the components of the first priority) is one of the main characteristics of the program.
- The program is very popular. Very strong students are admitted to the program (as evident from high admission requirements) and they continue to excel academically (as evident from the Dean’s/Provost’s honor list as well as students’ GPA).
- Within each department (and in particular Computing and Software Department), the professors involved are aware of the program details, as far as their department is concerned.
- The Chair of the Computing and Software Department is familiar with all components of the program (including the courses offered by other departments). The Chair is aware of most of the strengths of the program, and some of its weaknesses.
- Learning outcomes (set by CEAB) are measured in great detail, and the results of all measured attributes are very encouraging.
- The professors teaching the courses are, in general, doing a great job in delivering the course material and motivating the students.
- The program includes some of the most popular courses among the students (especially due to their relevance to the current job market).
- Accessibility of open labs for those students who are interested to work on hands-on projects.
- The Department of Computing and Software has plans to address some of the weaknesses of the program.
- The Computing and Software Department has good initiatives for the students (in all programs), in line with the university’s priorities.

Areas for Improvement and/or Enhancement

The Review Team noted some areas for improvement for the program:

- Some of the courses delivered by different departments overlap significantly.
- A lack of mechanical system design courses was noted.
- Additional foundational software courses, including algorithms and data structures, and supporting foundations for the current operating systems course would be considered very valuable, while the value of the thermodynamics course as students currently have to take it was questioned.

Summary of the Reviewers’ Recommendations with the Department’s and the Dean’s Responses
## Recommendations

<table>
<thead>
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<tr>
<td>1. A committee consisting of the representatives from four departments involved in offering the program should be created to govern the program and address its weaknesses. The Associate Chairs for Undergraduate Programs of the four departments would be the most appropriate representatives to serve on this committee.</td>
<td>The committee of the undergraduate associate chairs exists “automatically” informally; the CAS department is communicating with all involved departments to establish further enhancements to the governance of the Mechatronics programme.</td>
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<tr>
<td>2. The departments involved in mechatronics course offerings should take action to address the overlap between some of the courses.</td>
<td>CAS Chair will work with the chairs of other department to ensure better communication between instructors of mechatronics courses. Also mechatronics curriculum committee will revisit the course description to avoid unnecessary overlap between courses.</td>
<td>CAS Chair and CAS Associate Chair for Undergraduate Studies</td>
<td>September 2017</td>
</tr>
<tr>
<td>3. In order to further grow the program (if such growth is of strategic interest to the university), more resources will be needed in some labs.</td>
<td>CAS Chair submitted a request to the Faculty of Engineering of additional funds of about $309K to renew and expand the labs. An increase by 20 places for Fall 2017 is currently in the works.</td>
<td>Dean’s Office and CAS Chair</td>
<td>September 2017</td>
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</tbody>
</table>
4. A better management of space allocated to the labs, students and professors will become increasingly important in the near future. Therefore, it is recommended that the department revisits its current space allocation priorities.

<table>
<thead>
<tr>
<th>CAS Chair has developed a space allocation policy and is negotiating with the faculty concerning space for the growth in the Mechatronics Engineering programme.</th>
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<tr>
<td>CAS Chair</td>
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</table>

5. It is desirable to have a mechanism in course evaluation process to separate the results obtained from mechatronics students (it would be good to do the same for all different programs whose students attend the same class).

<table>
<thead>
<tr>
<th>Some courses are already split into separate sections (2503) or in the process of being split (MECHENG 2803). We plan to incrementally assign separate course numbers also for courses that are still co-taught.</th>
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<tbody>
<tr>
<td>CAS Associate Chair for Undergraduate Studies.</td>
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</table>

6. To evaluate the effectiveness of some initiatives such as mentorship program and involving the undergraduate students in research activities, it is important to come up with some measurable success criteria.

<table>
<thead>
<tr>
<th>The mentoring program for Computer Science students has not been very successful thus far due to a pronounced lack of participation by the students. A mentoring program for Mechatronics students is desirable, but careful consideration is needed to find ways to better engage the students and to provide effective mentoring given that the Department’s faculty workload is already excessive. We need to develop a successful pilot program for Computer Science before developing such a mentor program for Software Engineering.</th>
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</thead>
<tbody>
<tr>
<td>CAS Chair</td>
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<tr>
<th>It is being discussed with the Faculty of Engineering and the Mechanical Engineering Department.</th>
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</table>

| September 2017 |

| CAS Associate Chair for Undergraduate Studies. |

| June 30, 2017 |
7. There are two specific areas of interest among the students in the program: one is more related to mechanical design and the other related to algorithms and data structure. It would be good to consider two options for the program, with two sets of core courses (and/or elective courses) in focused areas for each. **CAS undergraduate curriculum committee will be considering this suggestion. However, the lack of teaching resources within the department might be an obstacle to implement this suggestion.**

8. It is recommended that the professors explain to the students, in the beginning of the semester, how the content of the course they teach is related to the objectives of the program **The department is working on designating some courses taken by Mechatronics Engineering students as “home courses”, where the instructors have responsibility to communicate programme-level information to the students.**

9. Given the heavy load of collecting and evaluating CEAB attributes, it is recommended that two professors be involved in the process. **Assessing graduate attributes is really part of the duties of the individual instructors. The Associate Chair for Undergraduate Studies is supported by the Continuous Improvement committee in the process of aggregating and interpreting the amassed information.**
10. Plagiarism workshops should be held (perhaps at the university level) upon the admission of students, and serious sanctions should be considered for this type of offence.

We agree.

Associate Dean for Undergraduate Studies

11. It is recommended that the department creates two mailing lists: one for more important messages (such as the ones concerning the program/class updates) and one for less important ones (such as information on social events). The list for less urgent emails should have an opt-out link.

This will be considered as part of the ongoing restructuring of communication with the Mechatronics Engineering students and of the department web offerings. In partnership with CAS student associations, clubs, and societies, we are rethinking how to communicate and better engage students.

Mechatronics Coordinator, Undergraduate Advisor for Mechatronics Engineering, and CAS Chair

December 2016

12. The design and maintenance of the department website needs to be improved.

This will be considered as part of the ongoing restructuring of communication with the Mechatronics Engineering students and of the department web offerings. In partnership with CAS student associations, clubs, and societies, we are rethinking how to communicate and better engage students.

Mechatronics Coordinator, Undergraduate Advisor for Mechatronics Engineering, and CAS Chair

December 2016

Faculty Response:

As detailed in the Chair’s response, the recommendations in the review have led to a series of discussions within the Department focused on inter-departmental co-ordination, course overlap, space considerations for growth, section splitting for some courses, the inclusion of more mechanical design/algorithm courses, and enhanced communication with the students. Many of these initiatives have been addressed or are on-going.
Overall, the dean satisfied with the replies of the Department to the concerns raised by the IQAP reviewers.

**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 an 18-month progress report and a 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
Software Engineering
Undergraduate Program

Date of Review: March 31 – April 1, 2016

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 undergraduate programs delivered by the Department of Computing and Software. This report identifies the significant strengths of the programs, 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 Cyclical Program Review of the Undergraduate Software Engineering Program

In accordance with the Institutional Quality Assurance Process (IQAP), the Department of Computing and Software submitted a self-study in January 2016 to the Associate Vice-President, Faculty to initiate the cyclical program review of its undergraduate 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.

One arm’s length external reviewer from the Ontario and one internal reviewer were endorsed by the Dean, Faculty of Engineering, and selected by the Associate Vice-President, Faculty. The review team reviewed the self-study documentation and then conducted a site visit to McMaster University on March 31 – April 1, 2016. The visit included interviews with the Provost and Vice-President (Academic); Associate Vice-President, Faculty, Dean and Associate Dean of the Faculty of Engineering, Chair of the department and meetings with groups of current undergraduate students, full-time faculty and support staff.

The Director of the program and the Dean of the Faculty of Engineering submitted responses to the Reviewers’ Report (January 2017). Specific recommendations were discussed and clarifications and corrections were presented. Follow-up actions and timelines were included.
The Final Assessment Report was prepared by the Quality Assurance Committee to be submitted to Undergraduate Council and Senate (December 2017).

**Strengths**

In their report (April 2016), the Review Team highlighted the following strengths of the program:

- The attrition rate for students in the program is relatively low
- “The Department has been successful in recruiting a number of new faculty members with diverse backgrounds”
- The newly introduced “practice and experience” courses and the capstone project course contribute to a strong experiential learning experience
- The program provides a strong background in hardware-oriented programming skills
- The students are exposed to large variety of programming languages and platforms
- The class rooms and laboratories are well equipped and maintained
- The technical and administrative staff are providing excellent support for the
- The Department has created a Continuous Improvement Committee for monitoring the Software Engineering and Mechatronics Engineering programs

**Areas for Improvement and/or Enhancement**

The Review Team noted the following areas for improvement in the program:

- The learning outcomes at the program level based on CEAB Graduate Attributes and Indicators are too generic and should be specialized for the Software Engineering program
- The differences between the Computer Science and Software Engineering programs are not clear to students
- Software Engineering students entering Level 2 have less knowledge of programming than Computer Science students entering Level 2. Software Engineering students have noticed that they are thus less prepared than Computer Science students in the courses that combine both groups of students
- The program lacks courses, such as web computing and mobile computing. In the application domain
- The required database course should be moved from Level 3 to Level 2
- It is not clear where software maintenance and re-engineering is covered in the program
- The curriculum map does not distinguish between different levels of design content across the curriculum
- Measurement of teamwork is not adequately addressed
- The co-op program is not utilized in assessing learning outcomes
- The increasing enrolment, very high student to faculty ratio, use of a large number of sessional lecturers, and combining courses with Computer Science and Mechatronics Engineering students have negatively impacted the student learning experience
- There is not sufficient office space for sessional lecturers
• The Department does not have a curriculum committee dedicated to the Software Engineering program

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

Recommendations

<table>
<thead>
<tr>
<th>Recommendation</th>
<th>Proposed Follow-Up</th>
<th>Responsibility for Leading Follow-Up</th>
<th>Timeline for Addressing Recommendation</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. The review team encourages the Department to refine the current program learning outcomes into more program-specific learning outcomes. More specific program learning outcomes will enable the Department to better focus its curriculum development as well as allow students to better understand the differences between different Software Engineering program options and the difference between the Software Engineering program as a whole and other related programs, such as Computer Science and Computer Engineering.</td>
<td>Learning outcomes are addressed on two levels. <em>Learning objectives</em> are the targeted course-level learning outcomes; they are the components of the pre- and post-conditions for individual courses. <em>Graduate attributes and indicators</em> are the targeted program-level learning outcomes; the graduate attributes are the same for all Canadian engineering programs, while the indicators are the same for all McMaster engineering programs. Rather than introducing a third level of program-specific program-level learning outcomes, we need to develop a tighter mapping between the program-level indicators and the course-level learning objectives.</td>
<td>CAS Associate Chair for Undergraduate Studies</td>
<td>June 30, 2017</td>
</tr>
<tr>
<td>2. The Department may consider adding a list of <em>recommended</em> courses in computer technology and</td>
<td>This recommendation is not feasible since students are admitted into the Engineering 1 program from high school and not directly into the Software Engineering program.</td>
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</table>

Final Assessment Report – Software Engineering (UG)
<p>| 3. The Department may consider adding a list of <em>recommended</em> course electives for first year students who are interested in choosing Software Engineering as their degree program, e.g., COMP SCI 1JC3 and COMP SCI 1XA3. | This recommendation is not feasible since Engineering 1 students have no room in their schedules to take technical electives. |
| 4. The Department may consider making the Database course available (as a mandatory course) even earlier than third year, e.g., the second half of Year 2. If this is not feasible, consider integrating a basic introduction to the use of databases in a second year practice and experience course, e.g., SFWR ENG 2XB3. The Database course should remain a mandatory component of the Software Engineering program. | Although it would be desirable to have the required databases course in Level 2, this is not feasible since none of the courses currently in Level 2 can be easily moved to later levels. The suggestion by the reviewers to incorporate an introduction to databases in the SFWRENG 2XB3 (Software Engineering Practice and Experience: Binding Theory to Practice) is the most promising way to move the subject of databases earlier in curriculum. | CAS Associate Chair for Undergraduate Studies | June 30, 2017 |
| 5. The Department may consider adding courses on Web-based and mobile software engineering to the curriculum, while moving some of the advanced hardware-oriented programming courses to electives. | The Embedded Systems program is being eliminated as a separate program. Software Engineering students who are interested in embedded systems will be able to take the current embedded systems courses as electives. As a rule, we are making the specialized Computer Science courses, including COMPSCI 4WW3 (Web | CAS Associate Chair for Undergraduate Studies | June 30, 2017 |</p>
<table>
<thead>
<tr>
<th>(or mandatory courses in the embedded systems option).</th>
<th>Systems and Web Computing), available to Software Engineering students as technical electives.</th>
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<tr>
<td>6. The Department may consider strengthening the treatment of fundamental concepts and methods used in Software Maintenance and Reengineering, e.g., by revising the course description for SFWR ENG 3XA3 to explicitly include this topic.</td>
<td>We agree that the treatment of software maintenance and re-engineering should be strengthened and the best vehicle for doing this is SFWRENG 3XA3 (Software Engineering Practice and Experience: Software Project Management).</td>
<td>CAS Associate Chair for Undergraduate Studies</td>
</tr>
<tr>
<td>7. The Department is encouraged to provide students with opportunities to gain experience with diverse programming languages and platforms in senior program years, wherever possible.</td>
<td>We agree with this recommendation</td>
<td>CAS Associate Chair for Undergraduate Studies</td>
</tr>
<tr>
<td>8. The Department may consider defining more detailed, program specific learning outcomes that refine the general CEAB graduate attributes. A refined curriculum map may indicate what learning outcomes are introduced, further developed, and specialized in which</td>
<td>See recommendation 1 above</td>
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<td>Agenda Item VI</td>
<td>CAS Associate Chair for Undergraduate Studies</td>
<td>June 30, 2017</td>
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<tr>
<td><strong>9. The Department may consider adding assessment strategies for teamwork to project-based courses,</strong> potentially using the tool of an “Engineering logbook” or a similar mechanism for assessing team collaboration and communication.</td>
<td>We agree that the Department should develop better means for assessing teamwork on projects. The suggested logbook idea, that is currently used in courses such as SFWR ENG 3A04, could be implemented by making logbooks an integral part of all Software Engineering courses.</td>
<td>CAS Associate Chair for Undergraduate Studies</td>
</tr>
<tr>
<td><strong>10. The Department may consider the opportunity of assessing the competencies of students participating in the Co-Op program, for example by adding structured questionnaires for work terms supervisors (employers) and students at the exit points of each Co-Op term.</strong></td>
<td>This is a good suggestion, but it needs to be investigated and implemented at the Faculty level.</td>
<td>Faculty of Engineering Associate Dean, Academic</td>
</tr>
<tr>
<td><strong>11. The Department may consider a Design learning outcome for its HCI course.</strong></td>
<td>We agree that the post-condition of SFWR ENG 4HC3 (Human Computer Interfaces) should include a design learning objective.</td>
<td>CAS Associate Chair for Undergraduate Studies</td>
</tr>
<tr>
<td><strong>12. Given the increasing enrolment, upcoming retirements and the need to reduce class sizes, the Department should continue to recruit new faculty members. Specifically,</strong></td>
<td>The Department intends to hire as many faculty members, including teaching professors, as the Faculty will authorize.</td>
<td>CAS Chair</td>
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<td><strong>the</strong></td>
<td><strong>The period of 2017-2019</strong></td>
<td><strong>The period of 2017-2019</strong></td>
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<tr>
<td>Department may consider attaining permission to hire one or two teaching professors, as they can be assigned a higher course load</td>
<td>The Department recognizes that it needs to increase the diversity of its faculty, especially with respect to women. Three of the last five faculty hires in CAS were women. The Department is dedicated to continuing hiring in this direction</td>
<td>CAS Chair</td>
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<tr>
<td>13. The Department is encouraged to continue recruiting faculty members that increase the diversity of its faculty complement, e.g., gender minorities and faculty with diverse backgrounds</td>
<td>As the number of sessional lecturers has increased, the need for space for them has also increased. CAS, and the Faculty as a whole, is very short of space. Nevertheless, we will work to provide our sessional lecturers adequate space for their needs</td>
<td>CAS Administrator</td>
</tr>
<tr>
<td>14. The Department may consider exploring options to increase the availability of spaces for meetings between sessional instructors before and after class. Perhaps a keycard reader can be installed in the shared sessional office, so that sessionials do not depend on a single shared physical key to access the shared office</td>
<td>This facility already exists. See <a href="http://www.cas.mcmaster.ca/support/">http://www.cas.mcmaster.ca/support/</a></td>
<td></td>
</tr>
<tr>
<td>15. The Department may consider creating and communicating a Web site that maintains detailed information on the software and (drop in) laboratories available to students</td>
<td>We agree. Our hiring plan for 2016-2017 includes the hiring of a senior faculty with the</td>
<td>CAS Chair</td>
</tr>
</tbody>
</table>
in recruiting faculty members with scholarly interest in practical / application-oriented aspects of software engineering research and teaching

17. Measures should be taken to reduce class sizes and limit the number of temporary teaching staff (sessionals) in delivering courses

We have reduced the number of required Software Engineering courses combined with required Computer Science or Mechatronics Engineering courses from 13 to 6. This has significantly reduced the average size of the required Software Engineering courses at the cost of increasing the number of courses taught by sessional lecturers. Reducing the intake of students into the Software Engineering program is not an option that the Faculty is able to consider at this time, so the only solution to this problem is to hire more faculty members.

18. The Department is encouraged to expand its current mentoring program (for Computer Science students) to students in Software Engineering

The mentoring program for Computer Science students has not been very successful thus far due to a pronounced lack of participation by the students. A mentoring program for Software Engineering students is desirable, but careful consideration is needed to find ways to better engage the students and to provide effective mentoring given that the Department’s faculty workload is already excessive. We need to develop a successful pilot program for Computer Science before developing such a mentor program for Software Engineering.

19. The Department should develop a

We agree: the Department should develop renewed

CAS Chair

June 30, 2017
<table>
<thead>
<tr>
<th>Mission Statement / Vision Document for its Software Engineering Program, including specific program learning outcomes</th>
<th>Mission and vision statements for each of its undergraduate and graduate programs</th>
<th>CAS Associate Chair for Undergraduate Studies</th>
<th>June 30, 2017</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>20. The Department should develop detailed descriptions for all program courses including course-specific preconditions and postconditions (learning outcomes). These should be mapped to the program specific learning outcomes</strong></td>
<td>This has been done. What remains to be done is to harmonized the pre- and post-conditions across the program and to improve the mapping of the program-based indicators to the course-based learning objectives</td>
<td>CAS Associate Chair for Undergraduate Studies</td>
<td>June 30, 2017</td>
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<tr>
<td><strong>21. Encourage instructors to incrementally incorporate innovative methods for learning and teaching, with an emphasis on multimedia and flip-classroom teaching methods, in order to decrease faculty teaching load and increase classroom attendance</strong></td>
<td>The previous and current CAS chair has been actively encouraging the CAS instructors to work with McMaster’s Paul R. MacPherson Institute for Leadership, Innovation and Excellence in Teaching to improve their teaching and to experiment with new teaching formats</td>
<td>CAS Chair</td>
<td></td>
</tr>
<tr>
<td><strong>22. Establish an Industrial Advisory Board with broad representation from different software engineering related industries to advise the Department on trends, curriculum and strategic planning</strong></td>
<td>The Department is interested in establishing an Industrial Advisory Board with broad representation throughout the computing related industries</td>
<td>CAS Chair</td>
<td>June 30, 2017</td>
</tr>
<tr>
<td><strong>23. The Department may consider strengthening the</strong></td>
<td>We agree</td>
<td>CAS Associate Chair for Undergraduate Studies</td>
<td>June 30, 2017</td>
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<td>Agenda Item VI</td>
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<tr>
<td><strong>24. The Department should create a curriculum committee with dedicated focus on the Software Engineering program and its options.</strong></td>
<td>Our department faculty is too small to support a separate curriculum committee for each of our three undergraduate programs</td>
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<tr>
<td><strong>25. The Department may strengthen the role of employer and alumni feedback to Continuous Improvement Committee and the Continuous Improvement process</strong></td>
<td>See recommendation 23</td>
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<tr>
<td><strong>26. The Department may find a way to make aggregate, anonymized data from course evaluations available to members of the Continuous Improvement Committee</strong></td>
<td>This will require significant care in order to protect instructors’ privacy. It does not appear that per course data can be provided</td>
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<tr>
<td><strong>27. The Department may enhance the way it is communicating software / extracurricular lab services and opportunities to students</strong></td>
<td>Communicating effectively with students is becoming increasingly more difficult. For example, email is not an effective way to reach most students. In partnership with CAS student associations, clubs, and societies, we are rethinking how to better engage and communicate with students</td>
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Faculty Response:

As detailed in the Chair’s response, the recommendations in the review have led to a series of discussions within the Department and Faculty focused on such items as reduction of class sizes, being aware of the differences in level 2 between the Computer Science (CompSci) students and Software Engineering (SE) students combined courses, the enhancement of such items as teamwork and mapping/tracking of learning outcomes, the establishment of an Industrial Advisory Board, and issues with a large number of sessional instructors. The vast majority of the recommendations are currently being addressed by the Department and include such items as the splitting of combined CompSci and Software Engineering courses, the on-going development of a more comprehensive curriculum map, and the hiring of teaching-track faculty. Unfortunately, some of the recommendations, such as increasing the course entry requirements to the Software Engineering program cannot be implemented due to the common Engineering 1 entry year at McMaster.

Overall, the dean satisfied with the replies of the Department to the concerns raised by the IQAP reviewers.

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 an 18-month progress report and a 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
Engineering and Society
Undergraduate Program

Date of Review: March 31 – April 1, 2016

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 undergraduate programs delivered by the Engineering and Society Program. This report identifies the significant strengths of the programs, 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 Cyclical Program Review of the
Engineering and Society Program

In accordance with the Institutional Quality Assurance Process (IQAP), the Engineering and Society Program submitted a self-study in January 2016 to the Associate Vice-President, Faculty to initiate the cyclical program review of its undergraduate 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.

One arm’s length external reviewer from Quebec and one internal reviewer were endorsed by the Dean, Faculty of Engineering, and selected by the Associate Vice-President, Faculty. The review team reviewed the self-study documentation and then conducted a site visit to McMaster University on March 31 – April 1, 2016. The visit included interviews with the Provost and Vice-President (Academic); Associate Vice-President, Dean and Associate Dean of the Faculty of Engineering, Faculty, Chair of the department and meetings with groups of current undergraduate students, full-time faculty and support staff.

The Director of the program and the Dean of the Faculty of Engineering submitted responses to the Reviewers’ Report (January 2017). Specific recommendations were discussed and clarifications and corrections were presented. Follow-up actions and timelines were included.
The Final Assessment Report was prepared by the Quality Assurance Committee to be submitted to Undergraduate Council, and Senate (December 2017).

**Strengths**

In their report (April 2016), the Review Team highlighted the following strengths of the program:

- The Engineering and Society program appears to play a hidden role in reducing attrition and attracting and retaining female engineering students in particular.
- The real value in the program appears to be the strong community that students feel within Engineering and Society.
- Engineering and Society alumni and students at all levels expressed a high level of satisfaction with the coursework.
- The teaching team is small but made up of a dedicated group of individuals who enjoy teaching their classes

**Areas for Improvement and/or Enhancement**

The Review Team identified the following areas for improvement:

- Students requested targeted feedback on writing assignments
- The curriculum between courses should be differentiated more than it currently is
- The administrative load on the program coordinator is exceptionally heavy

**Summary of the Reviewers’ Recommendations with the Program’s and the Dean’s Responses**

**Recommendations**

<table>
<thead>
<tr>
<th>Recommendation</th>
<th>Proposed Follow-Up</th>
<th>Responsibility for Leading Follow-Up</th>
<th>Timeline for Addressing Recommendation</th>
</tr>
</thead>
<tbody>
<tr>
<td>Develop a better process to aid students in self-selecting the Program</td>
<td>A number of ideas were brainstormed with the review team and the results are included in the Reviewer’s Report. A committee should be struck that includes the core stakeholders of the program to review these ideas and implement new admission policies</td>
<td>Director of the Engineering and Society Program</td>
<td>The policies for admission will have to be reviewed and approved and should be in place for the 2018-2019 academic year</td>
</tr>
<tr>
<td>Training of the undergraduate TAs to better prepare them</td>
<td>Development of a mandatory writing workshop for TAs</td>
<td>Director of the Engineering and Society Program</td>
<td>A student will be hired in the summer of 2017 to work on many tasks</td>
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<tr>
<td>Agenda Item VI</td>
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<tr>
<td>marking and providing feedback to writing assignments</td>
<td>one of which is the development of the material for the writing/grading workshop. The first workshop is to be delivered in September 2017</td>
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<tr>
<td>Differentiating content between courses to remove the overlap</td>
<td>A retreat by the E&amp;S instructors in June 2016 began to address this problem. All of the instructors submitted a synopsis of their course that detailed the topics covered, videos show, assignments, projects and field trips. Some corrections were made immediately but as an ongoing process it was proposed that each instructor provides an annual overview of their course in order to track any changes and avoid duplication.</td>
<td>Director of the Engineering and Society Program Program Coordinator</td>
<td>This process began in the summer of 2016 and is proposed to continue indefinitely</td>
</tr>
<tr>
<td>Increase the Administrative Support</td>
<td>Currently there is one program coordinator for both Engineering &amp; Society and Engineering and Management. Hiring of a half or full-time administrative person to share the load for both of these programs is necessary to ensure the high standards that have already been set</td>
<td>Director of the Engineering and Society Program</td>
<td>I fully support this recommendation by the review team. I have broached this topic with the Director of Administration and Finance as well as the Associate Dean (Academic). It is an ongoing process and I will continue to lobby for more support</td>
</tr>
<tr>
<td>Additional common space for the program would allow for a central space for studying and locating events and speaker series.</td>
<td>With the opening of the Gerald Hatch Centre, the Associate Dean’s office and the Student Support Staff will be moving out of JHE A214 and could allow for</td>
<td>Director of the Engineering and Society Program Program Coordinator</td>
<td>The Director will speak to the Director of Administration and Finance and request more space. The Hatch Centre will be opening in the Summer/Fall of</td>
</tr>
<tr>
<td>Appointing an Assistant or Associate Director to the Program to help support the administrative side of the program</td>
<td>A conversation with the Dean, Associate Dean and Director of Finance will have to occur in order to determine the feasibility of this recommendation and to delineate the responsibilities and compensation if this proposal moves forward</td>
<td>Director of the Engineering and Society Program</td>
<td>This initial meeting with the indicated parties can take place in Spring of 2017.</td>
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<tr>
<td>Support by a Program Committee</td>
<td>The current Program Committee has not been active in over 13 years. The recommendation in the Reviewers report is to bolster the committee with more alumni, industrial partners and members of the university outside of Engineering</td>
<td>Director of the Engineering and Society Program</td>
<td>Recruitment of new members to the Program Committee will occur in the first half of 2017 and the first meeting will be held in the second half of the year.</td>
</tr>
<tr>
<td>Work with Engineering Co-Op and Career Services (ECCS) to articulate the particular values the E&amp;S students bring to the table</td>
<td>Meet with the Manager of ECCS to discuss the E&amp;S brand and how we can differentiate these particular students from other streams of engineering</td>
<td>Director of the Engineering and Society Program</td>
<td>This meeting will take place in the Spring of 2017</td>
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<tr>
<td>Program Coordinator</td>
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</table>

**Faculty Response:**

As detailed in the Director’s response, the recommendations in the review have led to a series of discussions within the program and Faculty focused on developing and encouraging students to self-select the Engineering & Society option, TA training to aid in the assessment of written assignments, reducing overlap between the Engineering & Society inquiry courses, and an increase in the level of administrative support to the program. Actions concerning several of the recommendations are ongoing (e.g. TA training) with the remainder of the recommendations scheduled to be discussed and addressed during the 2017 calendar year, in conjunction with the Dean and Associate Dean (Academic).

Overall, the Dean is satisfied with the replies of the Program to the concerns raised by the IQAP.
reviewers.

**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 an 18-month progress report and a 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
Materials Engineering
Undergraduate Program

Date of Review: March 28 – March 29, 2016

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 undergraduate programs delivered by the Department of Materials Science and Engineering. This report identifies the significant strengths of the programs, 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 Cyclical Program Review of the Undergraduate Materials Engineering Program

In accordance with the Institutional Quality Assurance Process (IQAP), the Department of Materials Science and Engineering submitted a self-study in January 2016 to the Associate Vice-President, Faculty to initiate the cyclical program review of its undergraduate 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.

One arm’s length external reviewer from the United States and one internal reviewer were endorsed by the Dean, Faculty of Engineering, and selected by the Associate Vice-President, Faculty. The review team reviewed the self-study documentation and then conducted a site visit to McMaster University on March 28 – March 29, 2016. The visit included interviews with the Provost and Vice-President (Academic); Associate Vice-President, Faculty, Dean and Associate Dean of the Faculty of Engineering, Chair of the department and meetings with groups of current undergraduate students, full-time faculty and support staff.

The Director of the program and the Dean of the Faculty of Engineering submitted responses to the Reviewers’ Report (January 2017). Specific recommendations were discussed and clarifications and corrections were presented. Follow-up actions and timelines were included.
The Final Assessment Report was prepared by the Quality Assurance Committee to be submitted to Undergraduate Council, and Senate (December 2017).

**Strengths**

In their report (April 2016), the Review Team highlighted the following strengths of the program:

- International reputation, especially in the areas of thermodynamics and phase transformations

**Areas for Improvement and/or Enhancement**

The Review Team provided seven suggestions for improvement. Details of these suggestions are provided in the chart below.

**Summary of the Reviewers’ Recommendations with the Program’s and the Dean’s Responses**

**Recommendations**

<table>
<thead>
<tr>
<th>Recommendation</th>
<th>Proposed Follow-Up</th>
<th>Responsibility for Leading Follow-Up</th>
<th>Timeline for Addressing Recommendation</th>
</tr>
</thead>
<tbody>
<tr>
<td>In order to recruit more talented students, incorporate more challenging and qualitatively advanced topics in the introductory 1M03 class</td>
<td>This topic has been discussed in the past during MSE departmental meetings. We will continue to identify possible topic areas.</td>
<td>MSE Chair and instructors of 1M03</td>
<td>Fall term 2016</td>
</tr>
<tr>
<td>Build on the interdisciplinary nature of Materials Science by offering elective courses from other departments</td>
<td>This recommendation has also been discussed during departmental meetings and efforts are already underway to offer a broader range of electives. For example, a course on photovoltaics from Engineering Physics has recently been added to the list of approved technical electives.</td>
<td>MSE Chair</td>
<td>On going</td>
</tr>
<tr>
<td>Develop a vision for the future of biomaterials within the MSE department</td>
<td>This topic will be addressed in the MSE hiring plan for 2016-17</td>
<td>MSE Chair</td>
<td>August 2016</td>
</tr>
<tr>
<td>Institute a plan to optimize the effectiveness of teaching assistants</td>
<td>The following changes will be implemented: 1) Based on a suggestion from the</td>
<td>MSE Chair and Associate Chair of Graduate Studies</td>
<td>On going</td>
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Agenda Item VI
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<th>Agenda Item VI</th>
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<tr>
<td>IQAP review team, evaluations specific to TAs will be conducted in each course at roughly the midpoint of the term. Any TA who is found to be inadequate will meet with the Chair and Associate Chair for Graduate Studies to discuss plans for improvement. 2) Although we try to align TA expertise with classes, we endeavour to improve this process in the future. 3) Hire more undergraduate TAs by allowing faculty members to transfer fourth year PhD students to RA funding.</td>
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</tr>
<tr>
<td>Develop a clear picture of in-course students’ participation in the co-op program</td>
<td>The IQAP review team noted that the MSE participation in the co-op program was substantially less frequent than in other departments and they suggested this may be affecting our recruiting ability. However, we have researched the participation rate in more detail. For the incoming second year class in 2016-17, 35 students out of 44 total have listed co-op as their degree choice. Further, it appears that many students in MSE participate in internships, but do not officially enrol in the co-op program due to the prohibitively high cost. Thus, we conclude that</td>
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students are well aware of the co-op opportunity, but simply elect not to participate. We will pursue no follow up at this time.

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<th>Agenda Item VI</th>
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<tr>
<td>Enhance the opportunities for structured oral presentations</td>
<td>This topic has been discussed at our recent annual Grad Attributes meeting. With respect to oral presentations, in the future we will provide clear and consistent expectations to our students throughout our curriculum. In addition we will attempt to identify additional courses in which oral presentation can be implemented.</td>
</tr>
<tr>
<td>Make a plan for a new foreign exchange program to replace the one with Grenoble</td>
<td>We are currently investigating an exchange program with the University of Lorraine and Ecole de Mines de Nancy</td>
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</table>

**Faculty Response:**

As detailed in the Chair’s response, the recommendations in the review have led to a series of discussions within the Department focused on TA effectiveness, recruitment into the Materials Science and Engineering program from Engineering I, enhancing the number of technical electives outside of the Department, and development of a strategic vision for biomaterials within the Department of Materials Science and Engineering. At this time, the Department is addressing all of the recommendations made in the report and a significant number have been completed.

Overall, the dean satisfied with the replies of the Department to the concerns raised by the IQAP reviewers.
**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 an 18-month progress report and a 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

Art History

Date of Review:  February 6 – 7, 2017

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 Art History undergraduate programs delivered by the School of the Arts. This report identifies the significant strengths of the programs, 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 Cyclical Program Review of the Undergraduate

Art History Program

In accordance with the Institutional Quality Assurance Process (IQAP), the School of the Arts (Art History) submitted a self-study in December 2016 to the Associate Vice-President, Faculty to initiate the cyclical program review of its undergraduate 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, one from Ontario and one from Pennsylvania and one internal reviewer were endorsed by the Dean, Faculty of Humanities, and selected by the Associate Vice-President, Faculty. The review team reviewed the self-study documentation and then conducted a site visit to McMaster University on February 6 – 7, 2017. The visit included interviews with the Provost and Vice-President (Academic); Associate Vice-President, Faculty, Director of the School and meetings with groups of current undergraduate students, full-time faculty and support staff.

The Director of the School and the Dean of the Faculty of Humanities submitted responses to the Reviewers’ Report (August 2017). Specific recommendations were discussed and clarifications and corrections were presented. Follow-up actions and timelines were included.
Strengths

In their report (March 2017), the Review Team noted that the Art History program is a remarkably strong, dynamic, coherent and intellectually vibrant program with high self-expectations, as serious work ethic, strong commitments to excellence in teaching and research and an impressive reach beyond its core faculty and students enrolled in their courses. The report also notes that faculty and staff outside Art History have high praise for the department and that student and alumni praise is overwhelming. Further highlights identified in the report include:

- Faculty teaching informed by grant-funded research
- Innovative curriculum including pioneering instruction of first year course offered online, and broad offerings of non-western and western courses
- High-quality mentoring of in-course students and considerable success in placing students in well-ranked graduate programs, often with funding, as well as arts-related career trajectories

Areas of Improvement

In their report, the Review Team identified some recommendations for areas of improvement including creating a stronger alignment with the Museum and departments and Schools across campus. Further recommendations are outlined below.

- Continue to strengthen the diverse curricular offerings, in the short term, by drawing from community resources, hiring high-quality Sessional instructors who are a distinct asset to the program
- Continue to foster commitment of alumni and community donors to the Friends of Art History with a longer-term, ambitious goal of raising money to support opportunities for the program

The Dean of the Faculty of Humanities, in consultation with the Director of the School of the Arts shall be responsible for monitoring the recommendations implementation plan. The details of the progress made will be presented in the progress report and filed in the Vice-Provost, Faculty’s office.

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

<table>
<thead>
<tr>
<th>Recommendation</th>
<th>Proposed Follow-Up</th>
<th>Responsibility for Leading Follow-Up</th>
<th>Timeline for Addressing Recommendation</th>
</tr>
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<tbody>
<tr>
<td>Tenure-track hire of a specialist in Contemporary Art and Artistic practices</td>
<td>Request that the Faculty of Humanities consider a tenure-track appointment in Art History of a specialist in Contemporary Art and Artistic practices. This position would result in</td>
<td>Drs. Angela Sheng and Alison McQueen</td>
<td>Submit request March 2018</td>
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<tr>
<td>Task</td>
<td>Responsible Parties</td>
<td>Notes</td>
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<tr>
<td>Develop an Experiential Learning course to heighten visibility of the internships that have previously been taught as Applied Humanities 3W03 and 4W03 courses</td>
<td>Drs. Angela Sheng and Alison McQueen</td>
<td>Submit new course proposal to the School of the Arts in September 2017, for consideration by the Faculty of Humanities Undergraduate Curriculum Committee in fall 2017</td>
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<tr>
<td>Increase to $5,000 departmental funding for outside lectures, student field trips to museums, or academic related purposes</td>
<td>Request an increase to $5,000, prioritizing for visiting speakers and field trips to museums, from the budget allocated to the School of the Arts; and align with amount allocated to Visiting Artists for the Art program</td>
<td>Dr. Angela Sheng</td>
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<tr>
<td>Request, through the Audio-visual needs of</td>
<td>Drs. Angela Sheng and Alison McQueen</td>
<td>November 2017 submit request for the increase to take effect for the 2018-19 budget cycle</td>
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<td>Agenda Item VI</td>
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<td><strong>the Art History program should be met, with adequate budget to ensure there are sufficient classrooms with AV equipment to support the program, which has distinct needs based on its object-based teaching, and that courses in the Art History program are given priority access to the classrooms that have the necessary equipment</strong></td>
<td><strong>School of the Arts, that the Faculty communicate the distinct audio-visual needs of the Art History program to the head of University Technology Services, and request that adequate budget be assigned to keep classroom AV equipment maintained and renewed in a sufficient number of classrooms. Request, through the School of the Arts, that the Faculty communicate to the head of the Registrar’s office that Art History courses be given priority access to those classrooms.</strong></td>
<td><strong>Alison McQueen</strong></td>
<td></td>
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<tr>
<td><strong>Increase to library funding, specifically for database subscriptions and book purchases</strong></td>
<td><strong>Request an increase to library funding for book purchases, particularly for new and recently developed courses in Art History that are being developed with the intent of continuing to foster the western and non-western curriculum in the program. Request the library fund new database subscription access to Hathi Trust.</strong></td>
<td><strong>Drs. Angela Sheng and Alison McQueen</strong></td>
<td></td>
</tr>
<tr>
<td><strong>Introduce an annual undergraduate conference or symposium in Art History and Visual Culture</strong></td>
<td><strong>The Art History faculty appreciate the suggestion, which indicates that the External Reviewers’ regarded the work of Art History students at McMaster as being of a very high calibre,</strong></td>
<td><strong>Not applicable</strong></td>
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<td><strong>assessment of current classroom audio-visual infrastructure, focusing on classrooms in which Art History courses have, historically, most commonly been taught (Togo Salmon Hall B-105, B-106, and B-128) as well as the seminar room in Wilson Hall (1212) that will be replacing the room previously used by the program for its seminars (Togo Salmon Hall 321).</strong></td>
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 worthy of public presentation. The faculty see the potential value of an annual conference or symposium, however due to the limited faculty complement they do not see it as realistic to undertake such a venture, particularly as any such symposium could only be a forum for papers by a select number of students, best developed over the course of more time than a three-unit course allows.

<table>
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<tr>
<th>Take full advantage of the relationship between the Art and Art History programs</th>
<th>Discuss with the Art faculty their willingness to accommodate one or two Art History students in select Art classes (enrolment permitted, and determined in collaboration with Art faculty). With support from faculty in the Art program, develop a new Level III course entitled Inquiry, Art making and Art History. Program students would attend selected Art courses and participate in art making and produce two written papers that would be graded by Art History faculty. The initial paper would focus on a selected art work, examining its context in history, medium, and why the</th>
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<td></td>
<td>Dr. Angela Sheng</td>
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<td>During 2017-18 to schedule discussions to result in a course proposal for curriculum submission in September 2018</td>
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</table>
student is interest in the object and its aesthetics. At the end of the term the student would submit a longer paper that would outline how the experience of art making has informed how they have a deeper analysis of the same art work than they did previously.

| Take full advantage of the relationship between the Art History Program and the McMaster Museum of Art | The Art History faculty have been very forthcoming with support for the museum in various ways, they have offered regular contributions to exhibitions and curatorial expertise, in addition to offering teaching resources including course outlines. The Art History faculty have been disappointed and dismayed over decisions taken without consultation with them and the many ways in which they have had a negative impact on the Art History program and the Faculty of Humanities. The Art History faculty propose: 1) That all future curatorial and directorial appointments to the McMaster Museum of Art include a commitment that the | Drs. Angela Sheng and Alison McQueen request the support of the Office of the Provost and Vice-President Academic, to which the Director of the MMA directly reports. | 2017/18 |
individual hired teach a minimum of one three unit course in Art History every academic year. This opportunity will enrich the curator’s research and ensure their expertise is directly accessible to students in the Art History and other programs across campus.

2) That their expertise be manifest in a voting capacity on any future curatorial, directorial or fellowship positions assigned to the McMaster Museum of Art.

3) That the Provost’s Office patriate to the Art History program the Visual Literacy course that is currently taught by the MMA for the Family Practice program, and that the class be taught by Art History faculty in the future with enrolment credit assigned to the Faculty of Humanities, and that the course continue to enjoy the support of the MMA for students to do direct study of objects at the museum.

Dean’s Response, Faculty of Humanities:

The Dean thanks the Review team, the Director of SOTA and the faculty members in the Art History program for their thorough and constructive approach to the review. Like the reviewers, the Dean was particularly struck by the willingness of sessional instructors, current students and alumni to become actively engaged in the visit of the review team.
The reviewers clearly identify this very small program as surprisingly strong, and as having forged a distinctive identity for itself by encouraging its students to engage with non-western art. The program has had a very good relationship with the Art Gallery of Hamilton, and the increased involvement of their curators in teaching in the program has greatly strengthened opportunities for students. As will be noted in the response, the relationship between the program and our own Museum of Art has been somewhat more strained; the dean notes that he learned from the reviewers that our institution is not alone in facing this kind of situation. Nevertheless, it is to be hoped that the program and the museum can find some opportunities to collaborate in the next few years; the reviewers offer several constructive comments on how such collaborations might be encouraged.

The Dean generally supports the attached response of the School of the Arts and faculty members in the program, and will continue to work to sustain this program.

**Quality Assurance Committee Recommendations**

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 an 18-month progress report and a 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

Economics Program (Undergraduate)

Date of Review: March 20 – 21, 2017

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 undergraduate Economics program delivered by the Department of Economics. This report identifies the significant strengths of the programs, 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 Cyclical Program Review of the Undergraduate Economics Program

In accordance with the Institutional Quality Assurance Process (IQAP), the department of Economics submitted a self-study in January 2017 to the Associate Vice-President, Faculty to initiate the cyclical program review of its undergraduate 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 from Ontario and one internal reviewer were endorsed by the Dean, Faculty of Social Sciences, and selected by the Associate Vice-President, Faculty. The review team reviewed the self-study documentation and then conducted a site visit to McMaster University on March 20 - 21, 2017. The visit included interviews with the Provost and Vice-President (Academic); Associate Vice-President, Faculty, Chair of the Department of Economics and meetings with groups of current undergraduate students, full-time faculty and support staff.

The Chair of the department and the Dean of the Faculty of Social Sciences submitted responses to the Reviewers’ Report (June 2017). Specific recommendations were discussed and clarifications and corrections were presented. Follow-up actions and timelines were included.
**Strengths**

In their report (April 2017), the Review Team acknowledged the program’s “excellent reputation in Canada and internationally”. The Review Team’s report also recognized the balancing act between serving a huge number of level 1 – 2 students from across the University and providing a strong two-track Honours and Specialist Honours program to the majors. Several strengths of the program were highlighted in the report:

- Excellent reputation in Canada and internationally
- Highly qualified and productive faculty and staff
- Large service teaching, good accessibility
- Wide variety of specialized courses in upper years
- Streaming in Honours to prepare students both for graduate school in economics and other options post degree (e.g. employment, other graduate programs)
- Alignment with FWI and University objectives
- Efficient and collegial department administration and staff provide a “great teaching and learning experience”

**Areas of Improvement**

The Review Team’s report identified the following areas for improvement:

- In-program Math requirements
- Admission requirements and procedures for Honours (specifically with regard to Math)
- Expansion of Honours Econometrics requirements
- Introduction of mandatory Communications course (2\(^{nd}\) year)
- Coordination of sections in multiple-section courses and coordination of grades in related courses

The Dean of the Faculty of Social Sciences, in consultation with the Chair of the department shall be responsible for monitoring the recommendations implementation plan. The details of the progress made will be presented in the progress report and filed in the Vice-Provost, Faculty’s office.
Summary of the Reviewers’ Recommendations with the Department’s and Dean’s Responses

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<tr>
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</thead>
<tbody>
<tr>
<td>The Department and Faculty should consider options for softening the GPA requirements for transfer students who have difficulty getting into the Honours program due to low first-year grades</td>
<td>The department currently has in place a mechanism for informal assessment of students who lie marginally below the Faculty of Social Sciences (FSS) cut-off for admission to Honours. The UG Chair reviews their grades and based on performance in six key Economics courses, determines whether they are a good prospect despite an overall GPA that is below the usual cut-off. We will review whether this process is working well by follow-up on the subsequent performance of the students who have been affected by the policy.</td>
<td>Undergraduate Chair</td>
<td>Next 3 years for tracking follow-up</td>
</tr>
<tr>
<td>Grade 12 Calculus should be made an admission requirement for each undergraduate Economics program. Students who do not have that credit should be allowed to satisfy the requirement by taking the university’s high school equivalent Math course in the first term of their second year</td>
<td>The department is considering three responses to this recommendation. First, it could require that Grade 12 Calculus be completed by the end of second year, probably by students taking a McMaster Math course (1F03) that is equivalent. Second, there are close relationships between calculus and marginal analysis in economics. With fairly modest resources, the department could offer an “Introduction to Calculus Applications in Economics” course that could introduce the basics of calculus with examples tailored to the specific learning objectives of our students. Third, it is also investigating the option of Direct Admission into Economics, rather than through first year admission to the FSS. With Direct Admission, the requirement could be implemented at the high school level.</td>
<td>Undergraduate Chair</td>
<td>Next 3 years for discussion and possible implementation</td>
</tr>
<tr>
<td>The in-program Math requirement in the two Honours streams should be strengthened to require at least 3 further units of Math at</td>
<td>The department is considering adding Econ 3G03 to the requirements for the Specialist stream of Honours. It is also investigating other potential Math courses that could be added to requirements. The first best option would be to expand our in-house offerings in introductory mathematical economics and require something like 3G03 for all Honours, given sufficient</td>
<td>Undergraduate Chair</td>
<td>Next 2 years</td>
</tr>
<tr>
<td>university level</td>
<td>Econometrics I (3U03) and Applied Econometrics (3WW3) should both be required courses in the two Honours streams. Econometrics I should be a pre-requisite for Applied Econometrics</td>
<td>The department is first exploring the option of making Econ 4G03 (Econometrics II) a requirement for all these students. Second, to offer 6 units of Econometrics for all Honours students, the department would require additional resources to teach more sections of 3U03. Third, a related issue of heterogeneity of student preparation in 3WW3 could be addressed by offering 2B03 in both terms (i.e., an additional section) and requiring that all Honours take 2B03 (and not SocSci 2J03). This would require a modest amount of teaching resources. In an ideal world, we would undertake all three responses.</td>
<td>Departmental Chair and Undergraduate Chair</td>
</tr>
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</table>

| The department should consider mounting a required Communications course in second year of all Economics programs. Students should be taught both oral communication and writing skills in this course | The challenge of offering a required Communications course is one the department is keen to undertake. It fits with current University initiatives (e.g., the Programming in the Arts & Science Faculties (PASF) Report) and has considerable support within the Department. There is strong sentiment for Economics-related writing, rather than a general Faculty (or Faculties) wide offering. This would require 4 or 5 additional classes (class size 20 – 25) for intensive writing and communication training and could possibly be framed within the department as part of the 2D03 Economic Issues offering. Since existing resources are already stretched to the limit and since such a major new initiative would not be appropriate for Sessionals and/or PhD Students, an adequate response would need new teaching resources over the long-term. | Undergraduate Chair | Next 3 years, depending on resource availability and hiring priorities within FSS. |

| The Department should devise formal methods to ensure that a common set of core topics are taught at an appropriate level in all sections of multi-sectioned courses | As implied by the report, there is already some informal coordination in a number of multi-sectioned courses. As the report proposes, the department will move to more formal coordination. As an immediate first step, the Chair, in collaboration with the UG Chair, will ask the most senior instructor (or the closest full-time faculty member) to serve as coordinator for each such course. The main tasks will be to | Undergraduate Chair and Chair | Immediate, effective Fall 2017 |
section courses. There should be more coordination amongst instructors of different sections of core courses. One approach is to assign one of them to be a course coordinator. Where possible, the coordinator should be a permanent (tenured/tenure-track or teaching stream) faculty member.

| An effort should be made to keep grade distributions of related sections of courses from becoming excessively different from one another. While for small courses, this may be possible, for large courses with similar students there is no reason to expect them to diverge significantly. | The department agrees that grade distributions should not be excessively different within courses at the same level (1 – 4). It will strengthen existing measures to improve outcomes in such cases. There is currently a policy in place that publishes (to all instructors) grade distributions for the preceding academic year by level. The Chair and UG Chair will further monitor submitted grade distributions prior to approval and, when necessary, meet with individual instructors to discuss reasons for any grade distributions that depart significantly from the norms. | Undergraduate Chair | Immediate, effective Fall 2017 |

| All Honours students should have tutorials in one level 3 Econometrics courses | The department already offers tutorials in all level 3 Econometrics courses | | |
Dean’s Response:

The reviewers emphasized that the program has an excellent reputation nationally and internationally and that it provides students with an excellent teaching and learning experience. The report also emphasized that the program faces challenges teaching large numbers of first and second year students from outside its program while simultaneously meeting the needs of program students majoring in economics. It endorsed the department’s recently adopted two-stream approach within the Honours program that allows greater customization to address the distinct needs of those students planning to pursue graduate study in economics or a related field and those seeking employment directly after completion of their degree. The reviewers provided a number of concrete recommendations to further improve the program, most of which are consistent with changes already underway within the program.

The ideas embodied in some of the recommendations are already in place in some form (e.g., softening GPA requirements for promising transfer students with low first-year grades outside economics, tutorials in third-year econometrics), though perhaps they are not as explicitly developed as they can be. A number of the recommendations have no meaningful resource requirements (e.g. common set of core topics in multi-section courses, more coordination among instructors in core courses, ensuring greater consistency in grade distributions among multi-section and/or related courses), and the department indicates in its response that it is moving quickly to implement these recommendations for the coming academic year.

Implementation of a number of recommendations; however, require resources and/or working with the Faculty to change policies/regulations within its undergraduate program. The department’s undergraduate program resource requirements are distinct within the FSS given the large amount of out-of-faculty teaching performed by the department. Resource challenges are particularly acute at the moment because of an unusually large number of recent retirements and resignations, some planned but others unexpected. The FSS has worked with the department to address these challenges through new hires in each of the last two years and further hires planned for the coming year (2017-18). These efforts, however, do not fully address the resource challenges and the FSS will continue to work with the department on these issues within the context of the FSS’s own resource constraints.

For each of the recommendations that would create resource demands or require changes to program policies (e.g. Grade 12 calculus program requirement; requirement of 3 additional units of math for honours students; additional econometrics requirement for honours students; a new required communications course), the departmental response offers multiple options to address the underlying issue raised by the reviewers, options that have graduated requirements for resources or policy changes (in each case, the first best option is most resource intensive but it is possible to make some progress without large resource investments). The
Dean’s office will work with the department to assess how best to use existing and available new resources to achieve the underlying program improvement prompting the recommendations.

Quite apart from any resource requirements, this set of recommendations raises a few issues for the program and other changes to undergraduate programs. First, full implementation would create 9 new units of required courses within the honours program. This is a non-trivial change to the undergraduate program requirements whose implications have to be carefully assessed. Second, the overall direction of the recommendations is to increase prerequisites, which is in tension with the overall thrust of the Warner and PASF reports, which strive to create greater flexibility. The recommendations, however, do reflect the evolution of the discipline and the expectations certainly at least for students continuing on to graduate school. The department will want to continue to assess the differing needs and goals of the students in the two streams of its honours’ program. Finally, the recommendation for a required communications course is consistent with the recommendations of the PASF report, though the IQAP reviewers stress the need for a course specifically about writing economics. This reflects a broader theme of ensuring that students gain greater writing abilities in the context of their specific areas of study.

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 an 18-month progress report and a 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
Physician Assistant Education Program

Date of Review: February 16 - 17, 2017

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 Physician Assistant Education Program. This report identifies the significant strengths of the programs, 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 Cyclical Program Review of the Physician Assistant Education Program

In accordance with the Institutional Quality Assurance Process (IQAP), the Physician Assistant Education Program submitted a self-study in January 2017 to the Associate Vice-President, Faculty to initiate the cyclical program review of its undergraduate 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 one from Ontario and one from Manitoba and one internal reviewer were endorsed by the Associate Vice President, Academic, Faculty of Health Sciences and selected by the Associate Vice-President, Faculty. The review team reviewed the self-study documentation and then conducted a site visit to McMaster University on February 16 – 17, 2017. The visit included interviews with the Provost and Vice-President (Academic); Associate Vice-President, Faculty, Dean of Faculty of Health Sciences, Associate Vice-President, Academic, Faculty of Health Sciences, Associate Dean, Faculty of Health Sciences and meetings with groups of current undergraduate students, full-time faculty and support staff.
The Assistant Dean of the program and the Dean, Faculty of Health Sciences, submitted responses to the Reviewers’ Report (May 2017). Specific recommendations were discussed and clarifications and corrections were presented. Follow-up actions and timelines were included.

**Strengths**

In their report (March 2017), the Review team highlighted that the Canadian Medical Association Conjoint Accreditation Service visit in October 2016 awarded a full program accreditation, indicating that the program met all the criteria, requirements and measures involved in delivering the CanMEDS-PA National Competency Profile. The reviewers report also acknowledged a number of program strengths including the admissions process, high pass rate on the national certification exam, curriculum development, and program emphasis on interprofessional collaborative learning.

**Areas of Improvement**

The reviewers’ report identified some potential areas for improvement, including support for students in second year clinical placements, increasing pharmacology teaching, and protection of confidential applicant information.

The Dean, Faculty of Health Sciences, in consultation with the Assistant Dean of the program shall be responsible for monitoring the recommendations implementation plan. The details of the progress made will be presented in the progress report and filed in the Vice-Provost, Faculty’s office.
### Summary of the Reviewers’ Recommendations with the Program’s and Dean’s Responses

<table>
<thead>
<tr>
<th>Recommendation</th>
<th>Proposed Follow-Up</th>
<th>Responsibility for Leading Follow-Up</th>
<th>Timeline for Addressing Recommendation</th>
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</table>
| The PAEP should investigate if the Admission Application’s Statement of Intent, review process is fair and ensures confidentiality where possible. Reviewing the subjective nature of application statement for candidate selection is recommended. | The PA program respectfully questions this recommendation as misinformation was passed along by the 1st year students. We have re-reviewed our process to ensure no breaches of confidentiality and have made the students aware during our most recent admissions process that confidentiality is protected (to reassure 1st year students). It should be reasserted that all confidential information (all identifiers) is removed from each applicant’s supplemental application. | Assistant Dean, Kristen Burrows  
Program Manager, Nancy Weller  
Chair of Admissions, Dr. Michelle MacDonald | N/A |
| Posting an Admission Bulletin indicating that 98% of successful applicants hold degrees on admission. This notice may reduce the application numbers to a more manageable level, as Faculty indicated 700 applications for the 24 positions. | The program hosts an annual information night (also available online). The previous GPA class averages for admissions is disclosed to potential candidates. Consideration will be given to publishing GPA averages on the admissions bulletin, or disclosing class statistics on the programs website. | Assistant Dean, Kristen Burrows  
Program Manager, Nancy Weller | To be completed and available online by February 2018. |
| Attention to the diversity of the program’s student body and administrative tracking should be made to address the Ontario Equity and Inclusion Education Strategy. Including diversity demographics would be of value to the Ontario Government as the role Physician Assistants play in healthcare is studied. | Admissions information is collected by OUAC. Disclosure of diversity information is collected as part of the programs admissions process. One other Canadian PA program has done a diversity survey of its incoming graduates, which could be adapted to our program. The Ministry of Health and Long Term Care works closely with our program and only requests basic demographic information, such as age and gender. | Assistant Dean, Kristen Burrows  
Program Manager, Nancy Weller | N/A |
The PAEP is a strong academic and clinical program using the recognized and respected Problem Based Learning approach. Several of those interviewed reported that the PBL cases were taken directly from the Undergraduate Medical Education Program. Students, PAEP graduates, and instructors suggested there is room to adapt some of those cases for the specific role PA play in Healthcare.

Medical Foundations cases are reviewed cyclically. Student and tutor feedback is reviewed annually regarding individual PBL cases. Tailoring cases to be more specific to the PA role will be integrated during the next review period for each medical foundations unit (MF1-MF3).

The program continues to support and encourage faculty development. Tutors are also expected to pursue lifelong learning, and are made aware of PBL orientations. Consideration will be given to making orientation mandatory. There are no new tutors for the upcoming academic year. Current faculty are familiar with the PBL curriculum and involved in updates and changes.

Implement increased use of large group sessions to support the Pharmacology curriculum and knowledge. This is a common issue identified in undergraduate medicine and PA education programs. This is a PBL curriculum, and pharmacology is integrated into each tutorial. The program has offered pharmacology large group sessions in this past, and the reviews are variable. We will continue to work with faculty trained in pharmacology to see if this process can be improved.

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Assistant Dean, Kristen Burrows
Academic Coordinator, Nancy Aza

MF1: August 2017
MF2: December 2017
MF3: April 2018

*will be integrated when new tutors are recruited to the program.*

Trial new large group sessions for the 2017-2018 academic year.
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| **PAEP Faculty members should perform Clinical Sites visits or connect with students more frequently during the Clerkship year.** | 2nd year clerkship students have access to program faculty every 4 months when they are on campus for workshops. In addition, students can call or email at any time. Student-staff meetings are held after each campus visit (i.e. when students are on site for medical simulations).

Clinical site visits do not occur frequently as our students are placed with McMaster faculty as a condition of their core rotation requirements. Site visits and consultations are done when an issue is identified by student, faculty or site staff. | Assistant Dean, Kristen Burrows  
Academic Coordinator, Nancy Aza | Ongoing |
| **Reinforce information related to accessing wellness and mental health services for PAEP students.** | A website link will be created through the students medportal account to ensure students have 24hr access to mental health and wellness information when not on campus. A paper handout will also be provided to students during their clerkship orientation session. | Administrative Assistant, Danielle Laffan | To be in place for class of 2018 (will start clerkship in September 2017). |
| **The Program Reviewers support the need for a Medical Director to be recruited in support of the Program Director and program curriculum. This position is unique to the nature of the PA-MD model and provides support for site development, ensuring current material, and provides quality assurance.** | Consideration has been given to a Medical Director position. Due to the political nature of the PA profession in Ontario, this position must be strategically staffed. A job description has been created and will be submitted for approval when the role is required. | Assistant Dean, Kristen Burrows  
Associate Dean of Education, Dr. Alan Neville | Pending HR and program staffing requirements. |
Dean’s Response, Faculty of Health Science:

The Dean submitted a letter expressing his strongest support for the McMaster Assistant Education Program. The Dean’s letter acknowledged that the Physician Assistant Education Program is among the Faculty of Health Sciences’ most elite offerings and that the program trains an exceptionally talented group of students who upon graduation enter the workforce expertly equipped to support physicians in a range of health care settings and alongside physicians, nurses and other members of interprofessional health care teams.

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 an 18-month progress report and a 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
Studio Art

Date of Review: March 9 - 10, 2017

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 Studio Art undergraduate programs delivered by the School of the Arts. This report identifies the significant strengths of the programs, 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 Cyclical Program Review of the Undergraduate Studio Art Program

In accordance with the Institutional Quality Assurance Process (IQAP), the School of the Arts (Studio Art) submitted a self-study in December 2016 to the Associate Vice-President, Faculty to initiate the cyclical program review of its undergraduate 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, one from Ontario and one from Ohio and one internal reviewer were endorsed by the Dean, Faculty of Humanities, and selected by the Associate Vice-President, Faculty. The review team reviewed the self-study documentation and then conducted a site visit to McMaster University on March 9 - 10, 2017. The visit included interviews with the Provost and Vice-President (Academic); Associate Vice-President, Faculty, Dean and Associate Dean of the Faculty of Humanities, Director of the School and meetings with groups of current undergraduate students, full-time faculty and support staff.
The Director of the School and the Dean of the Faculty of Humanities submitted responses to the Reviewers’ Report (August 2017). Specific recommendations were discussed and clarifications and corrections were presented. Follow-up actions and timelines were included.

**Strengths**

In their report (May 2017), the Review Team noted that the Studio Art program is distinct and differentiates itself by its promotion of stewardship and environmentally responsible teaching practices; that the program embeds environmental responsibility into all of its pedagogy and research and presents an impressive convergence of research and life skills through ecological concerns. Further highlights identified in the report included:

- McMaster’s position as one of only three Ontario Universities with an Art foundry
- Good retention rates directly related to faculty efforts to undertake individual, in-person portfolio interviews of all applicants
- Support received from the School of the Arts’ Pieczonka fund to purchase new kiln and support of Faculty of Humanities and Facilities Services to upgrade infrastructure of room housing kiln
- Experiential and collaborative learning opportunities
- Close affiliation with Multimedia
- Strong ties to the community
- Civic consciousness and recognition of diversity (mindful and responsive to gender parity and inclusivity)
- Shared critiques open to community and commitment to peer-to-peer learning
- Well planned progression in course development from Level 1 to Level IV
- Well considered, newly renovated workspaces
- Commitment and attention to health and safety
- Highly qualified art faculty and high level of student satisfaction with faculty
- Curriculum provides students with skills in research, materials, digital media and theory
- Commitment to material-based learning and digital skill building
- Program is strategic and forward thinking in responsiveness to its own history and environment
- Significant increase in enrolment since creation of the BFA program (66.2%)
- Significant increase in service exposure to art raising the Art profile across the University potential of proposed Certificate Program
- Rigor of Level IV is in line with best programs in Art on an international level

**Areas of Improvement**

In their report, the Review Team identified some recommendations for areas of improvement and enhancement as outlined below.
• The imminent termination of the 2.5 CLA and CLA technologist position and resulting destabilization is a matter of urgent concern
• Address the high workload demands on technologists and secure permanence of the second technologist position (currently a CLA contract ending in November 2017)
• Enhance faculty potential for research/creation by instituting regular artist in residence appointments, each lasting a term, with some teaching duties, to allow course release for faculty on a rotating basis
• Increase funding for the Visiting Artist program to $6000 in order to raise the stature of the artists invited
• Improve the program’s web presence
• Improve storage facilities, particularly in the sculpture area
• Improve communication with technologists regarding limits of assisting vs teaching and include them in policy making decisions
• Provide mentorship of faculty to move towards Full Professor
• Commit to improving the accessibility of facilities in any future renovations
• Continue to build greater synergy between art and the department of Communication Studies and Multimedia
• Address the physical constraints of the sculpture studio which are not well aligned with high enrolment caps for materials-based courses
• Improve student access to technical supervision (uneven response and difficulties with appointment booking system in sculpture)
• Provide access to small power hand tools outside of supervised hours
• Assess contact hours
• Acquire space to allow the entire Level IV cohort to have studios in one location
• Address the high teaching and administrative load currently placed on one of the permanent faculty
• University should provide matching funds for student fundraising for the SUMMA exhibition

The Dean of the Faculty of Humanities, in consultation with the Director of the School of the Arts shall be responsible for monitoring the recommendations implementation plan. The details of the progress made will be presented in the progress report and filed in the Vice-Provost, Faculty's office.
**Summary of the Reviewers’ Recommendations with the Department’s and Dean’s Responses**

<table>
<thead>
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</tr>
</thead>
<tbody>
<tr>
<td>Abandon idea of a Masters program for now</td>
<td>abandon idea of a Masters program for now</td>
<td>all faculty and Director of SOTA</td>
<td>effective immediately</td>
</tr>
<tr>
<td>Establish a Certificate in Studio Art for Non-Majors (increase courses for non-majors)</td>
<td>Judy Major-Girardin is currently working to develop a certificate in Art for the School of the Arts as a whole. She and Sally McKay will begin work towards a Studio Art specific Certificate as well, with additional support from Briana Palmer.</td>
<td>Judy Major-Girardin Sally McKay Briana Palmer</td>
<td>Present Certificate in Studio Art as part of curriculum submission for fall 2017 to be Implemented in fall 2018.</td>
</tr>
<tr>
<td>Consider a non-degree 1 yr. post BFA program (Special Student or Post-Baccalaureate)</td>
<td>While we have explored similar options in the past, we discovered that the Ministry of Education will not fund a 5th year. Nevertheless, we will continue to explore ways of creating opportunities for BFA graduates.</td>
<td>All faculty</td>
<td>On-going</td>
</tr>
<tr>
<td>Increase funding for Visiting Artist program</td>
<td>We will inquire with the Director about possibilities for increasing funding for the existing visiting artist program</td>
<td>Judy Major-Girardin</td>
<td>Request 2017-2018</td>
</tr>
<tr>
<td>Increase support for faculty release time for creative activity and research</td>
<td>We welcome the reviewers’ suggestion to develop an artist-residency position that would enhance our Visiting Artist program and provide course release for faculty (as outlined in the report). We will begin analysis and develop a draft proposal for consideration by faculty, staff, Director and Dean.</td>
<td>All faculty and the Director of SOTA</td>
<td>if deemed feasible, implement plan in 2019-2020</td>
</tr>
<tr>
<td>Develop a stronger website presence and, if possible develop an independent Studio Art</td>
<td>We will initiate a discussion with Nathan Nash (Faculty of Humanities Recruitment Co-ordinator), Rita Crespo (School of the Arts Administrative assistant), faculty and the Director to assess institutional requirements for web presence, possibilities</td>
<td>Sally McKay</td>
<td>improvements to existing site by 2017-2018, new site established (if feasible)</td>
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<tr>
<td>topic</td>
<td>description</td>
<td>responsible</td>
<td>timeline</td>
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<tr>
<td>website linked to institutional website</td>
<td>moving forward, and responsibilities for faculty and staff re: website implementation and maintenance</td>
<td>Judy Major-Girardin Agata Derda</td>
<td>by 2018-2019</td>
</tr>
<tr>
<td>Upgrade computer and software</td>
<td>A request for Piezoncka funding for a new computer and software was made to Executive Council in April 2017 by John Ford.</td>
<td>Judy Major-Girardin</td>
<td>Funding approved June 2017 and new equipment anticipated for fall term 2017.</td>
</tr>
<tr>
<td>Address imminent termination of CLA faculty position</td>
<td>Propose a permanent faculty appointment to build on the investment and achievements in art service offerings.</td>
<td>Judy Major-Girardin in consultation with full-time faculty and the SOTA Director</td>
<td>Proposal in 2017/18 for implementation in 2018/19</td>
</tr>
<tr>
<td>Permanent hire for 2nd studio technologist</td>
<td>Faculty is actively pursuing the request for permanent hire for 2nd studio technologist</td>
<td>Judy Major-Girardin, Rose Mannarino, and the SOTA Director</td>
<td>November 2017</td>
</tr>
<tr>
<td>Secure more physical space for storage of student work</td>
<td>Faculty and staff are currently working to maximise effective use of existing space. We will also make a request for additional storage space based on the fact that during the renovation of our space we lost two storage sheds from the studio area, and our previous storage space in T-18 has recently been eliminated due to construction the new Living and Learning Centre. As noted in the report, our current lack of storage space is infringing on our pedagogy.</td>
<td>Judy Major-Girardin Carmela Laganse</td>
<td>if feasible, implementation in 2017-2018</td>
</tr>
<tr>
<td>Improve communication with technologists regarding limits of assisting vs teaching and include them in policy making consultation</td>
<td>We have put new procedures in place to improve communication between faculty and staff, including bi-weekly meetings at which staff will be present when issues relevant to them arise</td>
<td>all faculty, technologists, and administrative coordinator</td>
<td>effective immediately, with ongoing commitment</td>
</tr>
<tr>
<td>Provide mentorship of faculty to move towards Full Professor</td>
<td>An initiative to explore promotion of one studio faculty member to full professor is already in progress</td>
<td>Director of SOTA</td>
<td>A decision on whether or not this case should proceed to the Faculty of Humanities at this</td>
</tr>
<tr>
<td>Agenda Item VI</td>
<td>Commit to accommodating the disabled in future facilities enhancements</td>
<td>While reviewers did not indicate specific concerns in the report, we recognize the importance of accessibility as a priority. Several accessibility issues were addressed in our recent renovation: an elevator was installed, the main entrance is at grade level and our new washrooms are wheelchair accessible and gender neutral. In addition, we commit to enhancing accessibility of the physical space at every opportunity. Actions include a commitment to keep the entrances to the elevator clear, a request that the button access to doors to TSH east tower is maintained in good working order, and the prioritizing of accessible internal doorways and key swipe stations in any future enhancements to the facility.</td>
<td>all faculty and staff</td>
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<td></td>
<td>Create greater synergy between Art and the department of Communication Studies and Multimedia</td>
<td>We will continue to build on collegial relations instigated by Chris Myhr in his previous cross-appointed CLA position bridging Art and MM. While this faculty member now holds a tenure-track research position in Communication Studies and Multimedia he will be teaching Studio Art students and Multi-Media students in some cross-listed courses. Chris has volunteered to continue to act as a liaison between Art and Multimedia, and we welcome his contributions.</td>
<td>Chris Myhr</td>
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<tr>
<td></td>
<td>Address physical constraints in sculpture studio, class sizes too large for materials-based learning</td>
<td>We recognize the validity of this comment. While there is great pressure to maintain high enrolment caps, faculty and technologists are currently working to effectively maximize our use of space and equipment</td>
<td>Carmela Laganse Michael Syms</td>
</tr>
<tr>
<td></td>
<td>Improve student access to technical supervision</td>
<td>Faculty, technologists and the administrative coordinator are currently establishing new protocols to address this issue, including better communication between faculty, students and technologists around available assistance and more transparent scheduling processes</td>
<td>all faculty, technologists and administrative coordinator</td>
</tr>
<tr>
<td>Provide access to small power hand tools outside of supervised hours</td>
<td>Sculpture faculty and technologist will compile a set of tools that are deemed low risk and can be signed out by students for use outside of supervised hours and establish a protocol for access to these tools</td>
<td>Carmela Laganse Michael Syms</td>
<td>2017-2018</td>
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<tr>
<td>Acquire space to allow the entire Level IV cohort to have studios in one location.</td>
<td>Studio space for Level IV students is assessed annually based on the size of the cohort. Our priority is to keep the cohort together in one space whenever possible.</td>
<td>faculty teaching Level IV critique classes</td>
<td>immediate and ongoing</td>
</tr>
<tr>
<td>Address the high teaching and administrative load currently place on one of the permanent faculty.</td>
<td>The hands-on nature of an art program involving materials, processes, health and safety and time-intensive contact can create heavy teaching and administrative pressures. This is particularly evident with the Permanent Teaching Track appointment in Studio Art and is magnified in a program with only a handful of tenured faculty. The Director is currently working with the Teaching Track faculty member to explore reduced teaching (18 units)</td>
<td>Director of SOTA with Briana Palmer (supported by studio colleagues)</td>
<td>Reduced load of 18 units secured for 2017/18</td>
</tr>
<tr>
<td>University should provide matching funds for student fundraising for SUMMA</td>
<td>We will ask the director to consider a request to the Dean for matching funds.</td>
<td>Judy Major-Girardin</td>
<td>if feasible, to be implemented for Summa Exhibition scheduled for spring 2019</td>
</tr>
</tbody>
</table>
Dean’s Response, Faculty of Humanities:

The Dean thanks the Review team, the Director of SOTA and the faculty members in the Studio Art program for their thorough and constructive approach to the review.

The review team clearly identify the core strengths of this program and recognize its great value to students, the Faculty, university and community. The Dean noted that he appreciated in particular that they point to the way in which this program has created a distinct place for itself, by focusing on sustainable art practices, and by sustaining student access to the foundry.

The Dean supports the attached response of the School of the Arts and faculty members in the program, and will continue to work to strengthen this program, and to extend some of its benefits to students beyond the program.

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 an 18-month progress report and a 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
French M.A.

Date of Review: April 6 – 7, 2017

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 in French. 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

The French program submitted a self-study to the School of Graduate Studies February 2017. The self-study presented the program descriptions and learning outcomes, an analytical assessment of the program, and program data including the data collected from a student survey along with the standard data package prepared by the Office of Institutional Research and Analysis. Appended were the CVs for each full-time faculty member in the Department.

Two arm’s length external reviewers and one internal reviewer were endorsed by the Dean of the Faculty and selected by the Dean of Graduate Studies. The review team reviewed the self-study documentation and then conducted a site visit to McMaster University on April 6th and 7th, 2017. The visit included interviews with the Provost and Vice-President (Academic); Associate Vice-President and Dean of Graduate Studies, Dean of the Faculty, Chair of the department and meetings with groups of current students, faculty and support staff.

Strengths

The reviewers note the “very high satisfaction levels among its students”, the strength and innovative focus of the curriculum and diverse research activities which challenge and offer to students opportunities to enhance their learning of French/Francophone cultures and literatures while deepening their professional capacity. The program was grateful for the Consultants’ high praise for our M.A. program’s 100% completion rate.
Here are other specific strengths of the program, highlighted in the report:

1. Diversity in the curriculum: various theoretical approaches (post-colonialism, psychoanalysis, queer theory, reader-response theory, Indigenous studies, women’s studies, structuralism and poststructuralism, among others), and diverse reading materials from the francophone world (France, French-Canada and Quebec, the Caribbean, North Africa and Sub-Saharan Africa and Asia).

2. Interdisciplinarity in literary studies (interconnections between literature and animal studies, science, arts, philosophy, among others).

3. FRENCH 705 — Introduction to Literary and Critical Theory: innovative, team-taught course in theory, textual analysis and research methods.

4. Career training (in accordance with the guidelines of the Tri-Agency and the OCGS Taskforce on Professional Skills): organizing special events and workshops, advising M.A. students in terms of scholarship and grant writing, encouraging publications and participation in conferences, and building relationships between graduate students and MacPherson Institute for Leadership, Innovation and Excellence in Teaching.

5. Annual graduate students colloquium creating a space to present progress and results of their current research, share conclusions and practice professional skills.

6. Research, technological and pedagogical resources (an excellent French collection at Mills Library, the Lyons New Media Centre, the Lewis and Ruth Sherman Centre for Digital Scholarship, the MacPherson Institute for Leadership, Innovation and Excellence in Teaching).

7. Quality of mentoring and training, as well as of the supervision of Teaching Assistants provided by dedicated Faculty members.

8. Inclusive system of governance.

• **Areas for Enhancement or Improvement**

In their report, the Reviewers identified areas for enhancement of improvement:

1. Hiring new Faculty members to compensate for retirements and thus to allow for offering more elective courses.

2. Expanding the use of technology in teaching.

3. Introducing more formative and less summative assessments of graduate students' work.

4. Providing greater funding for international students.
5. Providing M.A. students with access not only to teaching assistantship but also to research assistantship opportunities
Summary of the Reviewers’ Recommendations with the Department’s and Dean’s Responses

<table>
<thead>
<tr>
<th>Recommendation</th>
<th>Proposed Follow-Up</th>
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</table>
| Senior Administration Support for Departmental Mission and Faculty Resourcing | External reviewers acknowledged the key role the Department of French plays not only at the university but also as a French presence in a designated city required to offer services in French. Whereas it is at times a challenge to have the second official language given its due place within the university, it is often more difficult to do so with a reduction of close to 50% in faculty resources and this within the last three years. As the reviewers themselves noted, since 2014-15 the Department has been “drastically” reduced and is in need of new tenure-stream faculty or hires (p. 8, 10, 14). The Department has been very mindful of succession planning, and it has reinvented itself at both the undergraduate and graduate levels, and we have strengthened both our mission and our focus. We now need senior administrative support to allow the Department to address effectively the following recommendations.  

a) **Heavy workload.** External consultants affirmed that our 15-unit workload contrasts with 12 units in the majority of other French Departments of Ontarian Universities, all of whom recognize the French as a Second Language (FSL) factor. They also acknowledged the additional faculty contribution to the very successful team-taught course | Chair of the Department | 2017-2020 |
(FRENCH 705) for which we receive no credit.

b) **Faculty Research Activities and Community Outreach.**
The Department has excellent faculty and many would like to contribute to community organizations and build strong ties with Francophone West African, Vietnamese and Indigenous communities, while others would like to contribute to research institutes and interdisciplinary programs at the University. With all hands on deck strictly to mount our required courses, these opportunities have had to be set aside.

c) **Course electivity.** The Department is acutely aware of our graduate students’ strong request for more electives. It is their major complaint. Cognizant of the budgetary situation, we have introduced more undergraduate/graduate courses but this formula is limited by SGS and it doesn’t appeal to our Master and PhD students who wish for a more robust graduate experience. A new hire would enrich our curricular offerings at the undergraduate and graduate levels.

Building on our strengths and strategic focus on French/Francophone literatures and cultures and cultural diversity, the Department will continue to request hires in the following fields in order to address the gaps in our graduate and undergraduate curricula: French Literature (from Medieval to 19th Century); French/Francophone Cultural Studies and Teaching French as a Second Language. In response to greater collaboration with other Departments and Institutes across the Faculty, we see potential with the
Department of English and Cultural Studies. We share many common interests in the areas of World Literatures (African, Asian and Caribbean), Indigenous literature, as well as European literatures written in French/English. Greater cross-disciplinary institutional structure that would encourage more interaction would not only be unique in Canada, but it would also send a very clear message that McMaster University not only recognizes bilingualism but also truly embraces cultural diversity within its community and beyond.

### Curricular Improvements and Enhancements

<table>
<thead>
<tr>
<th>a) <strong>Major Research Paper (MRP) length</strong>: The Department of French is willing to increase the number of pages for our MRP requirement from 25-35 to 35-45 as this reflects our current practice in many cases.</th>
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<tr>
<td>b) <strong>Assessments</strong>: We appreciate the External Consultants’ interview with students and the suggestion that we place more weight on formative assessments rather than summative assessments. Given its importance for students, we shall include this issue at our Departmental meetings and retreat. We shall consult best practices and find ways to ensure a proper balance.</td>
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<td>c) <strong>Technology</strong>: The Department will look at diversifying and increasing our use of technology.</td>
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<td>d) <strong>Website</strong>: We plan to work on updating and improving our website within the next academic year.</td>
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<tr>
<th>Chair of the Department and Chair of Graduate Studies, with the participation of Faculty Members and Graduate Student Partners (the second phase of the Student Partners Program sponsored by the MacPherson Institute).</th>
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<td>starting in September 2017, with the goal of introducing changes into 2018-2019 curriculum.</td>
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### Graduate Recruitment, Professionalization and a) **French Liaison Officer**: The Department is exploring the possibility of a French/Francophone liaison officer in

<table>
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<th>Chair of the Department and Chair of Graduate</th>
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<td>2017-2019</td>
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<tr>
<td>b)</td>
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### Research and Travel Funding & Related Opportunities

**a) Funding support to enhance recruitment.** We concur with the External Consultants’ recommendation that the Department would benefit from more funding support to attract strong candidates who might not only garner scholarships and awards but also consider applying for our doctoral program.

**b) International Scholarships, Bursaries and Awards for the French Graduate program.** Additional funding for international students from SGS or other Offices (Research or Provost) would be greatly welcome all the more so because the Department receives many applications from West Africa and these students often require more financial support. With such an investment, the reputational gain of the institution would be seen over time.

**c) M.A. Research Assistantships.** We welcome this suggestion and hope that there is funding available to offer these opportunities to our graduate students.

### Departmental Structure

The Department is keen on creating an Academic Planning Committee, the terms of which will focus on strategic planning, hiring, budgets and fundraising. Plans are already underway to draft the terms of this Committee and discuss them at our next Departmental Retreat and meetings, so that we can implement it as early as next year.

<table>
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<th>Agenda Item VI</th>
<th>Wilson Building.</th>
<th>Chair of the Department and Chair of Graduate Studies</th>
<th>2017 – 2019</th>
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<td>2017 - 2018</td>
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**Dean’s Response, Faculty of Humanities**

The review team clearly identify the core strengths of the program, particularly the high quality of the student experience, and the commitment of faculty members. The Dean supported the response of faculty members in the Department.

He added one comment about the Department’s response. The Department focuses a little too much of its response on the need for additional tenure track faculty hires. In his reading of the report, the reviewers actually do not make such a recommendation, although they are concerned about future retirements. They do note the dramatic loss of faculty complement and some its impact. In terms of the graduate program, the reviewers note that the current supervisory assignment per faculty member is sustainable, and might even allow for some growth of the graduate program.

The Dean would not be so concerned with the focus on hiring, except that he would hope the Department would consider some other suggestions made by the reviewers for dealing with the current faculty complement:

1. That the Department offer more 600 level seminars to students, to offer students more choice. Any limit set by SGS focuses only on the proportion of courses that students can take as part of their degree, not the number that the Department can offer. The Department has small undergraduate and graduate enrolments: other Departments offer many of their fourth year/MA seminars in this format, so as to give students at both levels more choice. As it stands, my understanding is that the Department has created only two 600-level courses, neither of which appears to be on offer in 2017-18.

2. That the Department explore collaborations with other Departments in the area that have small graduate programs, to look for potential opportunities to share supervisory resources in a reciprocal manner. Other Departments have at least involved individual faculty members from other institutions in their graduate programs.

3. That the Department explore collaborations with Linguistics and Languages, in the hopes of supporting a visiting professor or even a cross appointment in applied French linguistics.

The Department has been responding effectively to the review of its undergraduate programs, and the Dean looked forward to working with them to enhance their high quality MA program.

**Quality Assurance Committee Recommendations**

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 an 18-month follow-up report and a subsequent full external cyclical review to be conducted no later than 8 years after the start of the last review.
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 undergraduate and graduate programs delivered by the School of Labour Studies. This report identifies the significant strengths of the programs, 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 Cyclical Program Review of the Undergraduate and Graduate Programs in the School of Labour Studies

In accordance with the Institutional Quality Assurance Process (IQAP), the School of Labour Studies program submitted a self-study in February 2017 to the Associate Vice-President, Faculty to initiate the cyclical program review of its undergraduate 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, one from Ontario and one from British Columbia and one internal reviewer were endorsed by the Dean, Faculty of Social Sciences, and selected by the Associate Vice-President, Faculty and Associate Vice-President and Dean of Graduate Studies. The review team reviewed the self-study documentation and then conducted a site visit to McMaster University on March 30 - 31, 2017. The visit included interviews with the Provost and Vice-President (Academic); Associate Vice7 President, Faculty, Associate Vice7 President and Dean of Graduate Studies, Associate Dean, Grad Studies and Research, Dean, Faculty of Social Sciences, Director of the School of Labour Studies and meetings with groups of current undergraduate students, full-time faculty and support staff.
The Director of the School and the Dean of the Faculty of Social Sciences submitted responses to the Reviewers’ Report (May 2017). Specific recommendations were discussed and clarifications and corrections were presented. Follow-up actions and timelines were included.

Strengths

In their report (May 2017), the Review team stated that they found the School of Labour Studies to be a vibrant centre of innovative teaching, productive faculty, dedicated support staff and enthusiastic students. The reviewers highlighted the following strengths of the program:

• This is a Program that has healthy and steady enrolments for their BA and MA degrees; and the PhD has a good number of applications for the first year.
• There is a good record of student success at BA and MA levels; student placements seem to have gone well.
• There is a positive record of completion rates.
• The faculty all have good all-round records: teaching, publications, research, funding, administration, supervision, and engagement in current issues.
• There is a continuing and positive alumni connection thanks to the administrative staff in the School.

Areas of Improvement

The review team had no major concerns but did identify some minor suggestions for alterations and a few observations on the program as a whole.

Undergraduate:

As we expected, the Reviewers had suggestions to make regarding our course offerings. We welcome such suggestions from these seasoned researchers and teachers and we are already in the process of addressing them. At our mini retreats at the beginning of May, we discussed our undergraduate program from top to bottom, and, as a start, have agreed to change the titles, content and scheduling of our first year courses for the 2018-19 academic year. (It is too late to make such changes for the 2017-18 academic year.) Moreover, with regard to their suggestions regarding offering courses – existing and new – with more labour studies content, e.g., collective bargaining, employment standards, and the like, we are very enthusiastic about the possibilities that such courses hold for us in terms of meeting student interest and in terms of how they could assist students in later employment.

In making such recommendations the Reviewers were aware of the difficulties we have in providing our students with a rich and diverse range of courses. Speaking to an issue that also has profound implications for our graduate programs, the Reviewers note our faculty complement is such that we are strained to offer even the bare minimum of required courses at each level, each year. As the Reviewers write: “Some students noted they were doing joint majors not single majors in Labour Studies, precisely because they did not feel there were enough course options for a single major.” One of their “solutions” to this set of problems, they write, “is the addition of courses taught by other units to the Labour Studies list of courses.” While this “solution” is worthy of discussion, we would point out that our
undergraduate students already have this option, hence, it is not clear if the Reviewers, in making this suggestion, were contemplating that we reduce the number of required courses of our degrees. To date we have not considered this to be a desirable fix for this ongoing issue which in some ways produces a chicken and egg situation: we can not increase the number of our undergraduate courses because we do not have the student enrolment numbers but we do not have the student enrolment numbers because we do not attract enough students. At bottom, we are an interdisciplinary program and would welcome, with open arms, pedagogical and institutional/administrative arrangements with other Departments and Faculties if such arrangements promised to strengthen and deepen our programs without weakening and/or watering down our core mission to study and understand the changing worlds of work.

Graduate:

While our MA in Work and Society was also reviewed very positively, as with our undergraduate programs, there were a number of suggestions regarding changes to our course content and offerings. Consistent with comments from our undergraduate students, our graduate students spoke of their desire for courses with more ‘labour studies’ content. The Reviewers wonder if this comment stems from students having “fairly traditional definitions of labour studies.” Regardless, they recommend that any revisions/additions to our graduate curriculum include “the development of a graduate ‘foundation’ course, with more material on existing labour problems, policies, and legislation.” With regard to this recommendation, we can reply that the Reviewers seem to have missed the change we made last year that increased the number of required Work and Society courses from three to four precisely to expose our MA students to more “labour studies” content. That said, we will keep this recommendation in mind when we next refresh our course offerings.

The biggest issue raised by the Reviewers was, as with the undergraduate programs, the rather limited number of courses offered each year. For the Reviewers, this problem, like the similar problem noted for the undergraduate programs, stemmed directly from the too few faculty members available to offer more courses. Their primary solution to hire more faculty will be addressed below. Additional fixes, they wrote, could possibly be found in developing courses, e.g., methods courses, with other Departments within and outside Social Sciences. Labour Studies faculty discussed this option at our May retreat and it is one option that will pursued. Another possibility, the Reviewers wrote, was to become involved with online courses.

We are prepared to investigate each of these options. With regard to online courses, we believe that the online option is more applicable to undergraduate education. That said, we are generally quite skeptical of such courses given the research that shows poor completions rates. With regard to being able to offer our graduate students a wider range of graduate courses, we cannot do so with our present faculty complement. This leaves adding courses from outside Work and Society. This is something that we already do – both at the MA and in our new PhD program. As the Reviewers write, however, “the problem with this recommendation in terms of electives is that other units have course caps which means that LS MA students sometimes cannot secure spaces in them, and they do not know this until a couple of weeks into the term.” This is not a new problem for our Work and Society students and
requires a solution. The Reviewers rightly note that the “solution should come at the chair and administrative level.”

The Reviewers make other recommendations geared toward augmenting the richness and attractiveness of our MA and PhD programs. One is to open our supervisory roles and responsibilities to faculty beyond Labour Studies. This would, the Reviewers argue, serve to expose our students to the knowledge and expertise of such faculty while simultaneously lessening the burden of supervision at both the MA and PhD levels. The other recommendation was to give some thought to the development of an “Executive program, credit and/or non-credit, for trade unionists and perhaps others in various social movements.

The first of these recommendations has already been a subject of discussion among Labour Studies faculty. We continue to wonder about the perception of an academic unit that farms out PhD supervisory responsibilities to other faculty members. With regard to the development of an “Executive MA in Labour Studies, we, like the Social Sciences as a whole, need time to further discuss what would constitute a major departure from our established mandates.

Finally, the Reviewers indicate that the relative controversy regarding the name of our program should be resolved by changing the MA in Work and Society to MA in Labour Studies. In our May retreat we decided to follow that recommendation.

The Dean of the Faculty of Social Sciences, in consultation with the Director of the School of Labour Studies shall be responsible for monitoring the recommendations implementation plan. The details of the progress made will be presented in the progress report and filed in the Associate Vice-President, Faculty’s office.
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<tbody>
<tr>
<td>Review 1st year courses for topical interest and content</td>
<td>Issues discussed at May mini retreat and recommended changes will be implemented</td>
<td>First year course instructors; Undergraduate Committee Chair; Director</td>
<td>Fall 2017</td>
</tr>
<tr>
<td>Add “labour studies” content to current courses at both undergraduate and graduate levels</td>
<td>Issues discussed at May mini retreat and recommended changes will be implemented</td>
<td>Undergraduate and Graduate Committee Chairs</td>
<td>Fall 2017; Winter 2018</td>
</tr>
<tr>
<td>Add new courses with “labour studies” content, e.g., labour policy</td>
<td>Issues discussed at May mini retreat and recommended changes will be implemented</td>
<td>Undergraduate and Graduate Committee Chairs</td>
<td>Fall 2017; Winter 2018</td>
</tr>
<tr>
<td>Change name of MA in Work and Society to MA in Labour Studies</td>
<td>Issue discussed at May mini retreat and recommended change will be implemented</td>
<td>Graduate Chair; Director</td>
<td>Fall 2017</td>
</tr>
<tr>
<td>Expand space to accommodate School of Labour Studies</td>
<td>Issues discussed with Dean of Social Science and new space has been allocated to School of Labour Studies</td>
<td>Director; Staff</td>
<td>Summer/Fall 2017</td>
</tr>
<tr>
<td>Senior Administration and School of Labour Studies enter discussions to promote Labour Studies</td>
<td>Forward this recommendation to Senior Administration</td>
<td>Director</td>
<td></td>
</tr>
<tr>
<td>Additional Faculty Resources</td>
<td>Forward this recommendation to Senior Administration</td>
<td>Director</td>
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</table>
Dean’s Response, Faculty of Social Sciences:

Overall, the reviewers provided a resounding endorsement of the programs, while noting some areas for improvement and recommending some specific actions to undertake in response. The reviewers emphasized the pioneering nature of Labour Studies’ educational programs both nationally and internationally, and that the school continues to enjoy a leadership role internationally within labour studies. They also noted the dedication and commitment of faculty and staff in the School, which has been instrumental to maintaining strong programs over the last few years during which the School has experienced the loss of senior faculty through resignations and retirements. This commitment is exemplified by its openness to the recommendations of the reviewers and the speedy implementation of a number of them, which were discussed and approved at the School’s May retreat.

The response by the School makes clear that it is taking the recommendations seriously and developing concrete, feasible plans for responding as soon as is feasible to those recommendations that are under its full control, and that it will work with the Faculty of Social Sciences (FSS) and the university on those recommendations that require broader consideration and action. The Dean’s response focuses on those observations and recommendations in the reviewers’ report that call for consideration and action by the Faculty of Social Sciences.

Recommendation: The School and McMaster recruitment officials should discuss how to acquaint high school students with the degree because labour studies is not a ‘teachable’ subject in high schools.

This past year, with support from the Provost, the FSS (joint with Humanities) hired a recruitment coordinator, for which high school outreach is a central element of the Faculty’s recruitment strategy. Beginning this fall, the Dean would encourage Labour Studies to work with the recruitment coordinator to develop ways to highlight the program and the kinds of career opportunities it offers graduates as part of the high school outreach.

Recommendation: With the new PhD program there will be a need for more TAships; these provide invaluable experience for graduate students at both the MA and PhD levels.

The FSS recently adopted a new, needs-based approach to allocating TA resources to departments and schools. Labour Studies’ TA allocation for 2017-18 explicitly took into account the new Ph.D. program, and in the future the TA allocation will automatically adjust to reflect the enrolment of graduate students in the MA and Ph.D. graduate programs.

Recommendation: Labour Studies might consider adding “adjuncts with dissertation/MRP supervisory privileges” to its list of faculty, although the listed ‘Associate members’ of the School may serve this purpose; the parameters to these privileges can be listed elsewhere.

The FSS is happy to work with Labour Studies to examine the role such appointments could play in strengthening the MA and Ph.D. programs.

Recommendation: There is a request for more physical space for the program, particularly in light of the coming Ph.D. program. It was not clear to us that a final decision had been made on the use of seemingly available space on the 7th floor. We would encourage this expansion so that the Ph.D.
program can begin with the possibility of more space for graduate students and perhaps a lounge and meeting room that comes under Labour Studies’ jurisdiction.

With good reason, a number of observations and recommendations in the report centre on the theme of faculty resources. The School is small ---even in 2014 the total faculty complement was 5.35 FTE faculty members; further, it has experienced losses and turnover in the last few years as senior faculty have retired or resigned to take up positions at other institutions. This challenge will continue into the future – within the next few years it is expected that the two remaining senior faculty with roots dating back to the founding of the School will retire. This creates challenges of both quantity and historical continuity.

Since its founding, the School has had a strong preference for its faculty to hold joint appointments between Labour Studies and a disciplinary department in the FSS. Indeed, last year marked the first full-time appointment to the School. Because most Labour Studies faculty hold joint appointments, discussion of the faculty complement can be quite confusing when using headcounts, as the review did. For the sake of clarity, here is the recent history of the FTE faculty complement for the School:

2014-15: 5.35 FTE (4.35 tenure stream; 1.0 teaching stream)
2015-16: 4.85 FTE (2.85 tenure stream; 1.0 teaching stream; 1.0 CLA)
2016-17: 5.55 FTE (3.55 tenure stream; 1.0 teaching stream; 1.0 CLA)
2017-18: 5.30 FTE (4.30 tenure stream; 1.0 teaching stream)

This coming year, therefore, the FTE faculty complement is only 0.05 FTEs below it size in 2014. So the faculty complement effectively has been restored to its 2014-15 level. This situation is not accurately represented in the report, which relies on faculty headcounts rather than FTE counts.

This is not to deny that Labour Studies faces legitimate challenges with respect to faculty resources. It does face real challenges offering courses beyond those required for program completion and, as the review notes, the proposal for the Ph.D. program called for an increase of faculty FTEs as the Ph.D. program grows, which will be a challenge in the current fiscal environment. The FSS will continue to work with Labour Studies to address these challenges within the constraints it faces.

**Recommendation:** University Advancement should be involved in a significant effort to promote and aid Labour Studies as the new Ph.D. program is launched. Advancement should work with the Labour Studies program to develop a plan for raising funds for specific projects that would highlight the international leadership of McMaster in the study of work. While an endowed chair might be too expensive, other projects could be entertained: a post-doctoral fellowship, specific graduate scholarships, or a visiting professorship for a global scholar, who would come to McMaster on a sabbatical and receive office space and a research allowance (a similar research fellowship at McGill is worth $25,000) annually. All such efforts would raise the profile of Labour Studies, aid the recruiting of graduate students, and also potentially add to the curriculum if a post-doctoral fellow or visitor taught a course.

This reflects a broader theme that the university administration needs to be aware of the international calibre of the School, and to work with the School to promote it. With respect to this specific recommendation, the re-organization of University Advancement, under which the Faculty of Social Sciences has an advancement officer dedicated to FSS alone, should create greater scope to highlight
and promote advancement opportunities associated with the School of Labour Studies. The Dean notes that he will work with both the advancement officer and the School on such initiatives.

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 an 18-month progress report and a subsequent full external cyclical review to be conducted no later than 8 years after the start of the last review.