UNIVERSITY PLANNING COMMITTEE
Wednesday, January 22, 2020 at 10:30 AM
Michael DeGroote Centre for Learning, (Room 3002)

AGENDA

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7. OTHER BUSINESS

UNIVERSITY SECRETARIAT
• Board of Governors
• Senate

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REPORT TO THE UNIVERSITY PLANNING COMMITTEE
from the
UNDERGRADUATE COUNCIL

a. Establishment of New Programs

i. Honours Bachelor of Applied Science in Sustainable Chemistry and Honours Bachelor of Applied Science in Sustainable Chemistry Co-op

At its December 10, 2019 meeting, the Undergraduate Council reviewed and approved a proposal to establish the *Honours Bachelor of Applied Science in Sustainable Chemistry* and *Honours Bachelor of Applied Science in Sustainable Chemistry Co-op* programs. Details of the proposed programs are contained in Attachment I of the circulated report.

It is now recommended,

that the University Planning Committee, approve the establishment of the *Honours Bachelor of Applied Science in Sustainable Chemistry* and *Honours Bachelor of Applied Science in Sustainable Chemistry Co-op* programs for inclusion in the *2020-2021 Undergraduate Calendar*, as recommended by the Faculty of Science, and set out in the attached.

ii. Honours Bachelor of Arts in Integrated Arts and Honours Bachelor of Fine Arts in Integrated Arts Programs

At the same meeting, the Undergraduate Council reviewed and approved a proposal to establish the *Honours Bachelor of Arts in Integrated Arts* and *Honours Bachelor of Fine Arts in Integrated Arts* programs and corresponding specializations. The proposed programs and supplementary fees were approved by the University Student Fees Committee at its December 17, 2019. Details of the proposed programs are contained in Attachment II of the circulated report.

It is now recommended,

Motion #1:
that the University Planning Committee approve the establishment of the *Combined Honours Bachelor of Arts in Integrated Arts and Another Subject, Honours Bachelor of Arts in Integrated Arts*, *Honours Bachelor of Arts in Integrated Arts (Creative Critical Culture Specialization), Honours Bachelor of Arts in Integrated Arts (Performance Specialization),* and *Honours Bachelor of Arts in Integrated Arts (Studio Specialization)* programs for inclusion in a future

Undergraduate Calendar, **as recommended by the Faculty of Humanities, and set out in the attached.**

Motion #2:
that the University Planning Committee approve the establishment of the *Honours Bachelor of Fine Arts in Integrated Arts, Honours Bachelor of Fine Arts in Integrated Arts (Creative Critical Culture Specialization)*, *Honours Bachelor of Fine Arts in Integrated Arts (Performance Specialization)*, and *Honours Bachelor of Fine Arts in Integrated Arts (Studio Specialization)* programs for inclusion in a future *Undergraduate Calendar*, as recommended by the Faculty of Humanities, and set out in the attached.

University Planning Committee: FOR APPROVAL
January 22, 2020

Attachment I

McMaster University

NEW PROGRAM PROPOSAL
Sustainable Chemistry
October 2019

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1 PROGRAM

1.1 PROGRAM DESCRIPTION

Chemistry is often called the "central science" because it interacts with disciplines from physics and engineering to biochemistry and biology, and drives applications that range from business to the environment. The Department of Chemistry & Chemical Biology currently offers two undergraduate programs in Chemistry and in Chemical Biology. Both offer an intense, focused curriculum with little room for electives, and both are designed to prepare students for graduate or professional schools. By contrast, there is less emphasis on preparation for employment directly upon graduation from these undergraduate degrees, or on interdisciplinary studies that broaden the student experience, allow students to explore options in greater width, and focus on the key interactions of chemistry with other disciplines. This is in spite of extensive evidence that there is much demand for these attributes within the modern student body.

The proposed offering in Sustainable Chemistry aims to address these concerns. We envision a program that allows students to explore chemistry while leaving room for both chemistry-related courses and electives. We foresee (but do not require) that students would focus on either preparative chemistry (organic and inorganic) or measurement subdisciplines (physical, analytical and theoretical). This approach releases twelve units during the first three semesters (prior to co-op) compared to the current chemistry program; in the new program, these units can be used for a range of interdisciplinary courses that are relevant to the private sector employment environment. As well, a suite of Sustainable Chemistry courses will be prepared, which focus on environmental, regulatory and safety issues, matters that have a clear relationship to, but transcend, chemistry, and that are in heavy demand in the employment sector (e.g. government employment). The B.A.Sc. designation aligns with these goals, illustrating the greater breadth and applicability of this program relative to the B.Sc. in Chemistry

We anticipate that this program will not have a limited enrolment. However, participation in the co-op version will as usual require success in the co-op admission process. We believe that co-op students from this program will bring a unique and valuable skill set to employers.

More extensive opportunities for experiential placement, research practicum, workplace integrated learning, and thesis work will also be built into the program, and we will endeavour to assist students wherever possible to seek summer employment within the Department or in the chemistry industry.

PROPOSAL PREPARATION AND CONSULTATION PROCESS

The new program was initially proposed in 2018. Several possible permutations, for example including a business add-on, were extensively discussed by the Department's Undergraduate Curriculum Committee, along with consultations between the Department Chair and the Undergraduate Curriculum Committee Chair with stakeholders within Faculties of Science, Business, and Health Science. By the end of 2018, a final framework for the proposed program had been agreed. Below is timeline for events in 2019 that led from this conceptual framework to the current proposal:

Jan. 2, 2019: Discussions of a program with business separated from current proposed program
Jan. 3, 2019: Program name proposed: Sustainable Chemistry
Jan. 22, 2019: New program sub-committee meets with Associate Dean
Feb. 3-4, 2019: Level I survey developed to gauge interest in program
Feb. 11, 2019: Level I survey executed in CHEM 1AA3 classes
Feb. 21, 2019: Level I survey results show extensive interest in program
Mar. 5, 2019: Department meeting to discuss survey results and program in general

Mar. 7, 2019: Chemistry Chair (GG) meets Dean MacDonald for preliminary discussion
Mar. 20, 2019: Final version of statement of intent ready
Mar. 29 et seq.: Discussions with Kate Whalen re new program and Sustainability minor
Apr. 3, 2019: Statement of Intent circulated to APPC (Academic Planning and Priorities Ctte.)
Apr. 4, 2019: Statement of Intent circulated to Dean MacDonald
Apr. 6, 2019: Statement of Intent signed by Dean MacDonald
Apr. 17, 2019: Statement of Intent signed by Vice-Provost Faculty
May 13, 2019: Preparation for Program Learning Outcome workshop
May 13, 2019: Invitations for Focus Groups
May 24, 2019: Consultation with M. Padden of SGES re impact of new program
May 28, 2019: Program Learning Outcome workshop
May 28, 2019: New course codes confirmed (xSC3)
May 29, 2019: CHEM 2SC3 proposed on Dean's permission for 2019/20 year
May 31-Jun. 1, 2019: Focus Groups meet
June 3, 2019: CHEM 2SC3 approved on Dean's permission for 2019/20 year
June 8, 2019: CHEM 2SC3 added to curse list for Sustainability minor
Aug. 8, 2019: Resources section draft completed and discussed
Aug. 8, 2019: CHEM 3SC3 and 4SC3 outlines completed
Sept. 9, 2019: Consultation with the Dean; request for revision was received
Oct. 24, 2019: Revised document approved by APPC
Oct. 29, 2019: Final approval (unanimous), Department of Chemistry and Chemical Biology
Nov. 7, 2019: Revisions accepted at APPC

1.2 CONSISTENCY WITH MCMASTER'S MISSION AND ACADEMIC PLAN

This proposed program enhances Ontario's vision by providing stronger community engagement and skills development elements to add to the already strong creativity, innovation and knowledge drivers in our current offerings. Aspects such as sustainability, the environment, health and safety, chemical hygiene, regulatory affairs and green chemistry will now be addressed, all areas which are of community concern.

Likewise, this new and innovative emphasis on interdisciplinary studies aligns with McMaster's vision, mission and mandate to "serve the social, cultural and economic needs of our community and our society". We will emphasize job skills together with more practical knowledge of sustainable chemistry, which has developed over the last decades, and continues to evolve to positively impact the environment and contribute to remediation. Moreover, novel chemistry can be effectively translated into new economic growth within the local, provincial and national sectors.

The proposed program will offer enhanced opportunities for students to undertake a sustainable-chemistry focused degree, yet including interdisciplinary study, along with a problem- and inquiry-based approach to learning that aligns with McMaster's signature pedagogies. Emphasis on environmental and green chemistry, for example, aligns with McMaster's aspiration of "advancing human and societal health and wellbeing," while enhanced opportunities for experiential- and self-directed learning will be incorporated in accord with McMaster's approach to innovation in teaching and learning.

By emphasizing jobs and economic development to a greater extent than our traditional programs, the new offering will build graduates who are trained in sustainable chemistry with experience in regulatory affairs, and who will offer an exceptional skill set in this area to potential employers.

This new program offers a significant departure from the traditional approach to teaching chemistry, allowing expanded options and a flexible learning experience for students. This new program aligns with two strengths in areas identified in previous SMAs as areas for growth at McMaster. In particular, expanded opportunities will be provided in this program for experiential and work-integrated learning as well as research.

The proposed program will begin in level II, and will draw students primarily from level I Science. We expect to attract science-oriented students with interdisciplinary interests in areas such as sustainability, environmental science, public policy and governmental regulations, health and safety, and the industrial job market.

The expected outcomes will be focused towards the broad industrial job market where chemical knowledge can be applied to new sustainability challenges in many sectors.

1.3 PROGRAM LEARNING OUTCOMES

Degree Level Expectations for all Programs Offered by the Department

Graduates from the undergraduate programs of the Department of Chemistry and Chemical Biology will be able to:

A.1. Apply chemical principles to the solution of multidisciplinary problems and, in this way, demonstrate that chemistry is a central science that is connected to disciplines as diverse as the life sciences, medicine, physics, geology, astronomy, mathematics, statistics and engineering.

A.2. Combine and apply the principles of Analytical, Inorganic, Organic and Physical Chemistry, to understand contemporary chemical research and solve problems using a combination of methods and principles from various sub-disciplines.

A.3. Predict the structure and properties (physical and chemical) of simple substances based on knowledge of their constituent elements and functional groups.

A.4. Work in a safe manner by assessing the hazards associated with chemicals, reactions and laboratory equipment, and proposing and implementing safe work procedures that include the appropriate use of safety equipment; dispose of chemicals in a safe and environmentally responsible manner.

A.5. Design and execute synthetic routes to target substances using known reagents and methods including solution phase, air-sensitive and solid-state techniques.

A.6. Relate the outcome of a physical or chemical process to the factors that determine its natural direction as well as its speed and the extent to which such change can happen.

A.7. Predict reactivity and mechanisms based on known reactions and a compound's functional groups; illustrate mechanisms using standard conventions such as curly arrows in organic chemistry and reaction co-ordinate diagrams; interpret experimental data, such as rate laws, in terms of these mechanisms; design experimental approaches to identify and quantify reaction products.

A.8. Apply the principles and mechanisms of catalysis to design and execute novel reactions.

A.9. Apply modern spectroscopic techniques such as Infrared, ultraviolet-visible absorption and luminescence, atomic absorption/emission, nuclear magnetic resonance and mass spectrometry for the characterization of substances, and integrate the results in order to establish the identity of unknown species and mixtures.

A.10. Select and apply modern analytical methods such as gas chromatography, high-performance liquid chromatography, and capillary electrophoresis to quantitatively establish the composition of a substance or mixture.

A.11. Interpret experimental data taking into account the limits on the type of information provided by different experimental techniques, as well as the limits of experimental

accuracy and precision; validate quantitative methods and assess the quality of data based on statistical criteria.

A.12. Use databases and other library resources to retrieve chemical information. Assess the quality of information, distinguish primary from secondary sources and use them accordingly to discover and evaluate the current state of research in specific chemistry fields

A.13. Use proper citations to acknowledge others' contributions and employ copyright protection rules.

A.14. Plan and execute the steps necessary to reproduce results from the primary literature.

A.15. Propose original solutions to chemical problems using literature sources and knowledge of experimental methods in chemistry; assess the relative merits and drawbacks of alternative approaches based on the material and labour requirements, effectiveness of the methods, anticipated quality of the data, and cost.

A.16. Design an experimental solution to a problem that includes realistic objectives, critical milestones and an appropriate distribution of tasks within the members of a scientific team.

A.17. Effectively communicate scientific ideas and results both orally and in writing to specialist and non-specialist audiences in records of laboratory work, written reports, posters and lectures.

A.18. Recognize that most chemical theories and models are built from simplifying assumptions and can be subject to updates and revision.

A.19. Recognize the limits of their own understanding, the knowledge frontiers of the discipline and the most significant topics of current research.

A.20. Assess his/her own performance in the completion of an experimental project, appraise his/her own strengths and weaknesses.

A.21. Demonstrate initiative, personal responsibility, accountability, integrity and social responsibility; work effectively with others.

A.22. Conduct work in the chemical sciences in a manner that is ethical, responsible and respectful of the environment.

Degree Level Expectations Specific to Chemistry Programs

In addition, graduates of the Honours Chemistry program will be able to:

B.1. Explain the physical principles that underlie chemical phenomena and apply the corresponding quantitative models to interpret and predict the outcome of chemical and chemistry-relevant physical processes.

B.2. Apply the quantum mechanical model of atoms and molecules to explain the properties of matter.

B.3. Relate the similarities and differences between chemical elements to their positions in families, periods and blocks of the periodic table; examine trends in their properties; assess the feasibility of proposed (not yet observed) forms and combinations of the elements.

B.4. Interpret the results of advanced spectroscopic (e.g. Raman) and structural (e.g. X-ray diffraction) methods used in the characterization of simple substances.

B.5. Contrast alternative models used to account for the reactivity, spectroscopic and magnetic properties of compounds of the transition elements

Degree Level Expectations Specific to Chemical Biology Programs

In addition, graduates of the Honours Chemical Biology program will be able to:

C.1. Integrate their knowledge of chemistry, cell biology, molecular biology, biochemistry and evolution, to investigate and solve problems in Chemical Biology.

C.2. Apply knowledge of the biological counterparts of conventional organic reactions and their common mechanisms to explain biological processes; predict molecules' most likely biosynthetic pathways based on their structure.
C.3. Interpret experimental data in terms of the intermolecular forces that determine biomolecular interactions, particularly those involving macromolecules, and apply that understanding to problems in biology and medicine.
C.4. Apply knowledge of biological catalysts (enzymes and catalytic nucleic acids) to explain catalytic mechanisms and design inhibitors, and apply those principles to design disease treatments and explain biological processes.
C.5. Design and interpret experiments that apply modern analytical methods such as capillary electrophoresis to interactions between small molecules and macromolecules, and to molecular interactions with whole cells and whole organisms.

Degree Level Expectations Specific to the new Sustainable Chemistry Programs

D.1. Assess the short and long term impact of chemical research and industrial activity on society, health, quality of life and the environment by drawing on interdisciplinary knowledge.
D.2. In anticipating their professional activities, apply the principles of green chemistry.
D.3. Design, implement and advocate for sustainable technological solutions to practical problems.
D.4. Design, execute and evaluate processes compliant with applicable regulatory frameworks.

The lists of expectations shown above demonstrate that Sustainable Chemistry is distinct from the programs currently offered by the Department of Chemistry and Chemical Biology. The expectations specific to the proposed program were reviewed and approved by the focus groups described in section 3.1. The B.A.Sc. designation reflects these distinctive elements.

1.4 CONSISTENCY WITH DEGREE LEVEL EXPECTATIONS

McMaster University has adopted the Undergraduate University Degree Level Expectations (UUDLEs) that were developed by the Ontario Council of Academic Vice-Presidents and endorsed by the Council of Ontario Universities in December 2005. These degree-level expectations are classified within six distinct categories, the full descriptions of which are provided in the Policy on Academic Program Development and Review. The following table summarizes the alignment of the Departmental expected learning outcomes with the University's.

Table 1. Alignment of departmental learning outcomes with the McMaster's

McMaster's and Ontario's expectations	Corresponding entries in the list of DLEs
Depth and breadth of knowledge	A.1, A.2, A.6-A.11, B.1-B.5, C.1-C.5, D1-D4
Knowledge of methodologies	A.3-A.5, A.12-A.14, B.2, B.4, C.1, C.4, C.5, D.2-D.4
Application of knowledge	A.1, A.3-A.12, A.14-A.16, B.1-B.5, C.1-C.5, D1-D4
Communication skills	A.17, D3, D4
Awareness of limits of knowledge	A.1, A.2, A.12, A.18-A.20, D.1-D.3
Autonomy and professional capacity	A.4, A.13, A.15, A.16, A.20-A.22, C.5, D.1-D.4

1.5 DEMAND FOR PROGRAM

1.6 EVIDENCE OF SOCIETAL/LABOUR MARKET NEED

Several informal discussions with professional chemists employed externally to the University early in the program development process both revealed unbridled enthusiasm for the proposed program, and helped guide content development. In order to further understand the factors that contributed to the perceived success of the program, two workshops were organized in late May, in which externals including graduates of McMaster's Honours Chemistry program as well as representatives from local industry participated. Several factors were identified as strengths of the proposed program, most notably including the ability to select (a) sub-discipline(s) of focus at an earlier stage, and the development of critical transferrable skills through the new experientially-focused courses in sustainable chemistry. Externals also noted that the proposed skill set would align well with talents that were highly sought in industrial settings such as co-op. There was also discussion about students undertaking shorter experiential placements in industrial settings, for example through single-semester courses such as CHEM 3EP3 (experiential placement), or even shorter components of sustainable chemistry courses. The B.A.Sc. designation emphasizes alignment with labour market need.

I. EVIDENCE OF STUDENT DEMAND

Student demand was quantitatively evaluated first through a survey of students in the level I chemistry course, CHEM 1AA3, in February 2019. Because of McMaster's gateway program structure in the Faculty of Science in level I, at this time students were preparing to select their programs for level II and beyond, so interest in their future careers was high, contributing to an good response to the survey. The survey received 271 responses from a possible total of 1200 students enrolled in this course; of those 271, 80 indicated they already plan to choose a program in Chemistry and Chemical Biology; 90 said NO, they would not choose one of our Department's existing programs; and 96 said they don't know. Next, we asked each of those groups if they would consider enrolling in a Sustainable Chemistry program, if it were available. Here, 70 % of those who chose a CCB program said "yes", and most impressive, 50% of the Not-Chemists said yes, plus 70% of the "I don't know" responders said yes. These results amount to 168 potential applicants from the 271 surveyed, indicating that over 60% of respondents considered the proposed program a contender.

A second indicator of interest among students comes from enrolment in CHEM 2SC3 during the 2019/20 academic year. As the program planning evolved, it became apparent that there was demand for a sustainable chemistry course within the current student body, even without the proposed program. Accordingly, CHEM 2SC3 was added to our offerings under Dean's permission, albeit too late to be included in the calendar process. Thus, we anticipated that not all students would identify this course as an option, potentially reducing enrolment to allow the instructor to have a manageable class size. In contrast, uptake has been substantial, with 27 students already enrolled (as of Aug. 27, 2019) for the offering in January 2020. We anticipate that this number will only go up as students become aware of the offering, and change their course selections over the Fall 2019 semester.

Both these pieces of evidence point to a strong interest in this area, and suggest that our enrolment estimates (25 in year 1, 50 students/year thereafter) are reasonably conservative.

II. JUSTIFIABLE DUPLICATION

Although several international institutions offer M.Sc. programs aligned with sustainable chemistry (e.g. Valencia, Venice), Bachelor's degrees are less common, although several have emerged in the UK (York has a B.Sc. (Hons.) in chemistry, green principles and sustainable processes; Dublin has Chemistry with Environmental and Sustainable Chemistry). We are not aware of similar programs in Ontario, although some institutions offer courses in sustainable chemistry (e.g. Queen's, McGill). Thus, our approach will offer a unique program in which students can focus on sustainable issues within chemistry, but also learn about sustainability in a broader context such as through taking sustainability courses that are not focused on chemistry, but which are already offered through the sustainability minor at McMaster.

1.7 DEGREE NOMENCLATURE

The program will lead to an B.A.Sc. (Hons.) degree in Sustainable Chemistry. This designation reflects the overall academic rigour and graduation expectations associated with the program, while reflecting the specialization that the graduands have undertaken within chemistry and the breadth of sustainability courses. The applied designation emphasizes the more practical degree level expectations (p.8) and alignment with employment (p.9) within this program

2 ADMISSION & ENROLMENT

2.1 ADMISSION REQUIREMENTS

Like most B.Sc. programs in the Faculty of Science, Sustainable Chemistry will begin in level-II. level-I Science instruction at McMaster is organized in four "gateway" programs: Chemical & Physical Sciences, Environmental & Earth Sciences, Mathematics & Statistics and Life Sciences. Each level I program has its own admission requirements (high school courses and cut-off grade average). This structure is not meant to restrict access to any Bachelor's programs; therefore, all students can apply to level II Sustainable Chemistry as long as they satisfy the admission requirements. Since the implementation of this structure, the Department has drawn students from the Life Sciences and Chemical & Physical Sciences gateways in approximately equal numbers. While it is expected that those will remain the main sources of students for the new program; it is expected that Sustainable Chemistry will be especially interesting to students in the Life Sciences gateway.

Specifically, admission to level II of the Sustainable Chemistry Program will require completion of any level I program (30 units of academic credit, i.e. ten 3-unit courses) with a Grade Point Average of at least 5.0 including:
6 units from

- CHEM 1A03 – Introductory Chemistry I
- CHEM 1AA3 – Introductory Chemistry II
- CHEM 1E03 – General Chemistry for Engineering I

3 units from

- MATH 1A03 – Calculus for Science I
- MATH 1LS3 – Calculus for the Life Sciences I

- MATH 1M03 – Calculus for Business, Humanities and the Social Sciences
- MATH 1X03 – Calculus for Math and Stats I
- MATH 1ZA3 – Engineering Mathematics I

6 units from

- The Science I Course List

Courses in level I will provide the foundation on which the Honours B.Sc. program is built; they also act as the bridge between high school and advanced university courses. As shown in Table 2, the level I courses required for admission to the program directly contribute to fulfilling the departmental learning expectations. Naturally, Chem 1A03 and 1AA3 introduce multiple concepts that will be expanded in later years. Both courses will be updated to introduce topics relevant to Sustainable Chemistry in order to raise awareness of the new program amongst students and contribute to recruitment. One Mathematics course provides the numerical skill sets that are highly desirable to fully understand the physical principles and quantitative models that underlie and explain chemical phenomena; as such the proposed program requires at least one of these courses from level I. Admission to Honours Sustainable Chemistry will require a minimum cumulative average (C.A.) of 5.0/12 but students with at least 4.5 could be admitted under probation and would be expected to attain 5.0 in the subsequent academic year. In any case, the combined average of CHEM 1A03 and CHEM 1AA3 must be at least 6.0.

Table 2. Specific admission requirements for level-II of the proposed program.

Admission Requirements for Honours Sustainable Chemistry	Alignment to Departmental Learning Objectives
CHEM 1A03(or 1E03)	A.1-A.4, A.6, A.19-A.22, D.1-D.3
CHEM 1AA3	A.1-A.4, A.6, A.7, A.19-A.22, D.1-D.3
MATH 1A03 (or 1LS3, or 1M03, or 1X03, or 1ZA3)	A.1, A.18, D.1-D.3
2 Courses from the Science I course list	A.1, variable
5 Elective Courses	

2.2 ENROLMENT PLANNING AND ALLOCATIONS

The following enrolment targets are based on a survey intended to assess interest of current Science students in the new program (see 1.2) as well as current and planned Departmental resources (see 6.1).

Table 3. Expected enrolment in Sustainable Chemistry.

Academic Year	Cohort Year 1	Cohort Year 2	Cohort Year 3	Total Enrolment	Maturity
20-21	**25**			**25**	
21-22	**50**	**25**		**75**	
22-23	**50**	**50**	**25**	**125**	
23-24	**50**	**50**	**50**	**150**	**150**

2.3 ALTERNATIVE REQUIREMENTS

Students already registered at McMaster and applicants who transfer to McMaster from other postsecondary institutions will be eligible for admission to level II of the Sustainable Chemistry Program if they have completed a set of courses equivalent to those in the list of Admission requirements. Course equivalencies will be determined by the Office of the Registrar and the Faculty of Science.

3 STRUCTURE

3.1 ADMINISTRATIVE, GOVERNANCE AND COMMUNICATION

The program will be administered by the Department of Chemistry and Chemical Biology and by the Faculty of Science. The Associate Chair (Undergraduate) will coordinate the program, oversee the curriculum, and provide student and faculty support. The Associate Chair (Undergraduate) will liaise and coordinate with outside experts, many of whom will provide guest lectures and serve as mentors on group projects. The Associate Chair (Undergraduate) will report to the Chair, who will in turn report to the Dean of the faculty. The Associate Chair (Undergraduate) will work in collaboration with the Associate Dean of Science (Academic) and provide information to APPC. Communications related to the program will originate from the Associate Chair or the Associate Dean (Academic).

The Undergraduate Curriculum Committee in Chemistry and Chemical Biology will develop curriculum recommendations for the program. Proposed changes to the Program and curriculum are presented for approval to APPC in the Faculty of Science.

As the program develops, an Industry Advisory Committee will be assembled, and chaired by an external member of industry. We have already taken steps to establish this committee by hosting two industry/government partner focus groups in June, 2019, with participants having agreed in principle to participate in the Advisory Committee. Members of the Industry Advisory Committee will include the Associate Chair (Undergraduate), and senior industry representatives from the chemical industry. The function of the Industry Advisory Committee will be to provide feedback on the Program's objectives and activities as they relate to current industry needs in the sustainable chemistry field and provide updates on technological advances as well as to secure connections to the chemical industry and government. An Industry Advisory Panel consisting of external stakeholders has existed for several years in the School of Biomedical Engineering.

The Department has already taken steps toward establishing the Advisory Committee by hosting two focus groups with potential industry/government partners in June 2019. The event gathered

input and perspectives on the development of the proposed program and invited participation in guest lectures of Sustainable Chemistry courses.

3.2 STRUCTURE AND REGULATION

The Associate Chair (Undergraduate) will be primarily responsible for overseeing the program in collaboration with the Associate Dean of Science (Academic). Each will meet with their respective Curriculum and Policy Committees to assess the program, courses and enrolments. The Associate Chair (Undergraduate) will be responsible for preparation of the documentation required for the cyclic IQAP reviews. Based on student feedback, the curriculum and/or the level of support and guidance will be routinely adjusted to meet the needs of the students, teaching assistants, faculty and the learning objectives of the program.

All students in the Program will take three courses in sustainable chemistry that highlight the sustainability component of the program. These courses ensure that all Program Learning Outcomes for the program, as outlined in Section 1.4, are met. Each course specific to the program is offered at a level that is appropriate to each students' expected knowledge base and provides the necessary content for each student to appropriately advance throughout the program. Regardless of the chosen discipline, enrolled students will have the necessary pre-requisites (from earlier core courses) to meet the learning outcomes for the SC3 core courses.

4 CURRICULUM AND TEACHING

4.1 PROGRAM CONTENT

Requirements

The program will start in level II and require 90 units to be completed over 3 years after level I. Program requirements by academic year will be as follows:

<u>Level II: 30 Units</u>
3 Units from CHEM 2SC3 - Sustainable Chemistry: Green Chemistry
12 Units from Level II Chemistry (Chem 2A03, 2II3, 2LB3, 2OD3, 2OG3, 2P03, 2Q03)
9 Units from elective courses
6 Units from course list 2

<u>Level III, 30 units</u>
3 Units from CHEM 3SC3 - Sustainable Chemistry: Natural Resources and Energy or 4SC3 – Sustainable: Chemistry Analysis and Regulation
12 Units from Level II-IV Chemistry or Chemical Biology (course list 1)
9 Units from elective courses
6 Units from course list 2

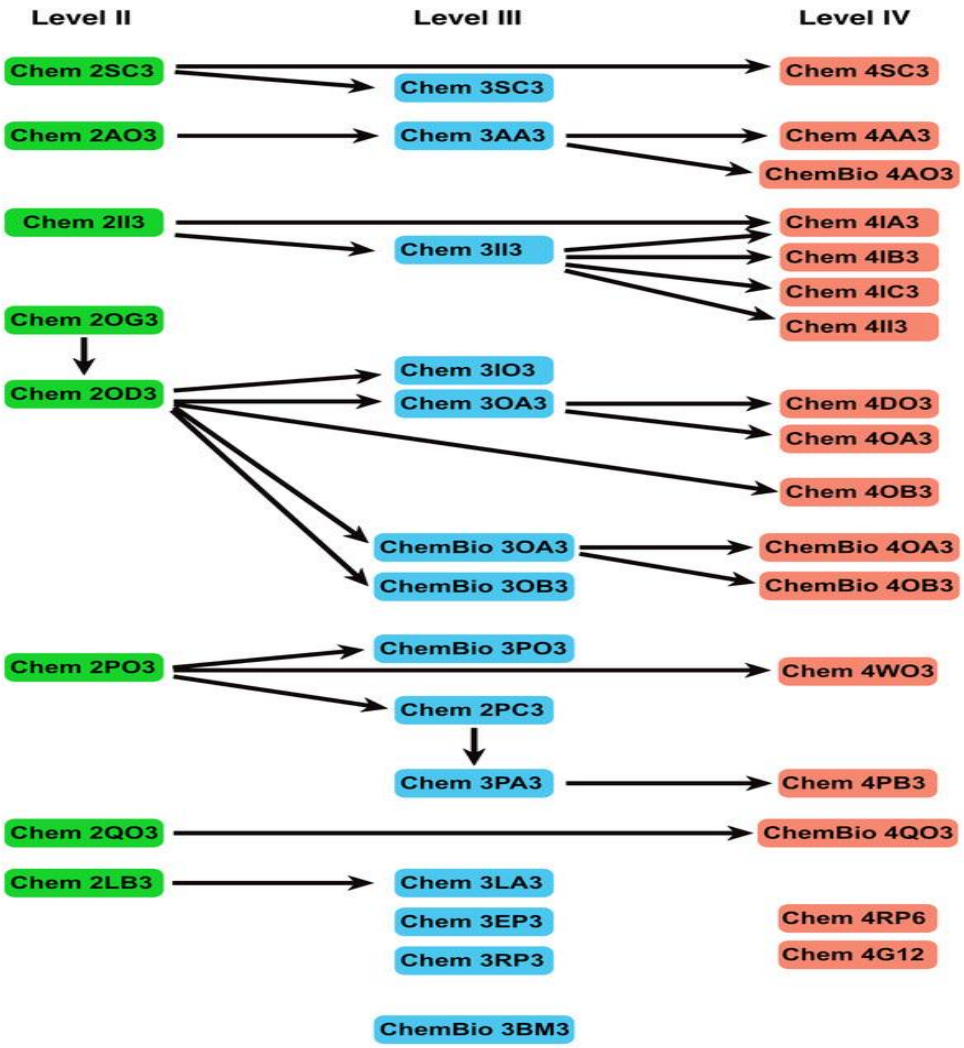
<u>Level IV, 30 units</u>
3 Units from CHEM 4SC3 - Sustainable Chemistry: Analysis and Regulation
12 Units from Level II-IV Chemistry or Chemical Biology (course list 1)
9 Units from elective courses
6 Units from course list 2

In order to fulfill the requirements of Level II, III and IV Chemistry and Chemical Biology, the following courses will be available to students registered in Sustainable Chemistry:

Course List 1:

- CHEM 2A03 - Quantitative Chemical Analysis
- CHEM 2II3 - Introductory Inorganic Chemistry: Structure and Bonding
- CHEM 2LB3 - Tools for Chemical Discovery
- CHEM 2OD3 - Synthesis and Function of Organic Molecules
- CHEM 2OG3 - Structure and Reactivity of Organic Molecules
- CHEM 2P03 - Applications of Physical Chemistry
- CHEM 2Q03 - Inquiry for Chemistry
- CHEM 3AA3 - Instrumental Analysis
- CHEM 3BC3 – Bad Chemistry
- CHEM 3EP3- Advanced Chemistry Placement
- CHEM 3II3 - Introduction to Transition Metal Chemistry
- CHEM 3LA3 - Strategies for Chemical Discovery
- CHEM 3I03 - Industrial Chemistry
- CHEM 3OA3 - Organic Synthesis
- CHEM 3PA3 - Quantum Mechanics and Spectroscopy
- CHEM 3PC3 - Mathematical Tools for Chemical Problems
- CHEM 3RC3 - Radioisotopes in Medicine
- CHEM 3RP3 - Research Practicum in Chemistry
- CHEM 4AA3 - Recent Advances in Analytical Chemistry
- CHEM 4D03 - Organic Structure and Synthesis
- CHEM 4G12 - Senior Thesis
- CHEM 4IA3 - Physical Methods of Inorganic Structure Determination
- CHEM 4IB3 -Bio-Inorganic Chemistry
- CHEM 4IC3 - Solid State Inorganic Materials: Structures, Properties, Characterization and Applications
- CHEM 4II3 - Transition Metal Organometallic Chemistry and Catalysis
- CHEM 4OA3 - Natural Products
- CHEM 4OB3 - Polymers and Organic Materials
- CHEM 4PB3 - Computational Models for Electronic Structure and Chemical Bonding
- CHEM 4RP6 - Research Project in Chemistry
- CHEM 4W03 - Natural and Synthetic Materials
- CHEMBIO 3BM3 - Implanted Biomaterials
- CHEMBIO 3OA3 - Organic Mechanistic Tools for Chemical Biology
- CHEMBIO 3OB3 - Structural Elucidation of Natural Products and Small Molecules
- CHEMBIO 3P03 - Biomolecular Interactions and Kinetics
- CHEMBIO 4Q03 - Peer Tutoring in Chemical Biology or Chemistry
- CHEMBIO 4A03 - Bio-Analytical Chemistry and Assay Development
- CHEMBIO 4OA3 - Natural Products
- CHEMBIO 4OB3 - Medicinal Chemistry: Drug Design and Development

Students will be able to select any of those courses as long as the corresponding pre-requisites are satisfied, as shown in the following map:



The Course List for Sustainable Chemistry includes:

- BIOLOGY 3ET3 - Ecotoxicology
- EARTHSCI 2GG3 - Natural Disasters
- EARTHSC 3CC3 - Earth's changing climate
- EARTHSC 4CC3 - Stable Isotopes in Earth and Environmental Systems
- ENVIRSC 2B03 - Soils and the Environment
- ENVIRSC 2C03 - Environment and Surface Climate Processes
- ENVIRSC 2Q03 - Introduction to Environmental Geochemistry
- ENVIRSC 2WW3 - Water and the Environment
- ENVIRSC 3O03 - Contaminants, Fate and Transport
- ENVIRSC 4EA3 – Environmental Assessment
- ENVIRSC 4N03 - Global Biogeochemical Cycles
- ENVSOCTY 2EI3 - Environmental Issues
- ENVSOCTY 3EC3 - Environmental Catastrophes
- ENVSOCTY 3ER3 - Sustainability and the Economy
- ENVSOCTY 3EE3 - Energy and Society
- ENVSOCTY 4HH3 - Environment and Health
- HTHSCI 4MS3 - Toxic Tales: The Social Lives of Molecules
- LIFESCI 2X03 – Environmental Change and Human Health
- POLSCI 3GC3 - Global Climate Change
- STATS 2B03 - Statistical Methods for Science
- SUSTAIN 2S03 - Evaluating Problems & Sustainable Solutions
- SUSTAIN 3S03 - Implementing Sustainable Change

As in the case of the current Chemistry and Chemical Biology undergraduate programs, there will be a co-op version of Sustainable Chemistry that will include four 16-week work terms. This addition will result in the academic work done during the last two years in the regular program being distributed in three years. The work terms will take place during the winter and summer of the third year, the summer of the fourth year and the fall of the fifth year. Anticipated enrolment for co-op is 10-15 students per year, a level that has been approved by Science Co-op Office.

The Sustainable Chemistry program will require 45 units of chemistry or chemical biology beyond level I but only three such courses will be fixed requirements. These will be the new courses (CHEM 2SC3, 3SC3, 4SC3) that will be established to achieve the learning outcomes specific to the sustainable chemistry program (details are provided in section 4.2). Six units per year will be reserved for a selection of highly relevant courses in sustainability (SUSTAIN), environmental science (ENVIRSC), geography (GEOG), Earth Science (EARTHSC), and Statistics (STATS) which are offered by other academic units within McMaster. Nine units per academic year will be set aside for elective courses. Compared to the Honours Chemistry program, Sustainable Chemistry offers significant flexibility in course selection and leaves plenty of room for studies in other disciplines allowing students to complete a minor if that is of their interest.
The current Honours Chemistry program requires 54-60 units of CHEM or CHEMBIO courses out of the total 90 units required over 3 years. By contrast, the proposed Sustainable Chemistry course will require 45 units of CHEM or CHEMBIO courses.

4.2 PROGRAM INNOVATION

The Department of Chemistry & Chemical Biology at McMaster is known across the country for its creativity in undergraduate education. Key features that make its current offerings stand out amongst the chemical programs available at Canadian post-secondary institutions are:

- A chemical biology undergraduate curriculum with courses specifically designed for this program.
- Sustained access to top-quality resources and modern instrumentation that is relevant to today's world of science.
- An innovative laboratory program featuring experiments that blur the distinctions between classical sub-disciplines and projects that, because of their complexity, must be executed in multiple consecutive sessions.
- Frequent experimentation with new teaching and evaluation methods.
- The widespread use of inquiry as a teaching method. Students in Chemistry and Chemical Biology have a dedicated inquiry course in the first semester of level II which will also be open to sustainable chemistry students.

Establishment of the sustainable chemistry program is the next step in the evolution of chemical undergraduate education at McMaster. A key feature of the curriculum are three new courses in sustainable chemistry, one to be taken each year.

CHEM 2SC3 - Sustainable Chemistry: Green Chemistry. This course will introduce the 12 principles of green chemistry, which provide guidelines for ways to 'reduce the harm' that chemical processes do the planet. Here students will develop a better appreciation of chemical methods used to generate useful molecules and the ways to practice them with more sustainable approaches, by increasing efficiency, using more sustainable starting materials, and forming fewer by-products. Consideration of those principles provides a forum for the discussion of the broader aspects of sustainability related to the introduction and life cycle analysis of chemical processes and products in academia and industry.

CHEM 3SC3 - Sustainable Chemistry: Natural Resources & Energy. Using examples and case studies, this course will apply the principles of green chemistry and sustainability to the life cycles of a major industrial chemical (hydrogen) and a heavily used natural resource (water). The third part of the course will discuss the challenges arising from the use of *endangered elements* (chemical elements projected to be in short supply in the near future, such as Helium and Lithium as well as many rare-earth elements essential for magnets, electric motors and other advanced technologies) in the development of materials for 'sustainable' energy solutions (wind turbines, solar cells, fuel cells, batteries, etc.).

CHEM 4SC3 - Sustainable Chemistry: Analysis and Regulation. This course will provide students with the skills necessary to work effectively in a *Quality System* environment. By the end of this course the student will be able to participate in the design, execution, and audit of processes compliant with regulatory frameworks such as those of the International Organization for Standardization (ISO), the International Conference on Harmonization of Technical Requirements for Registration of Pharmaceuticals for Human Use (ICH), and good manufacturing practice (GMP).

4.3 MODE(S) OF DELIVERY

While the traditional methods (lectures, tutorials) are still used in most courses offered by the Department, most employ multiple teaching methods, including inquiry, problem-based learning, and self-directed projects, methods enabled by modern electronic technologies (e.g. lecture capture, podcasting, etc.) have been implemented across the two currently offered programs. The

new courses in sustainable chemistry (CHEM 2SC3, 3SC3 and 4SC3) will emphasize active learning with specially designed exercises and cap-stone projects.

4.4 EXPERIENTIAL LEARNING

Chemistry is an eminently practical discipline. Experimental training in laboratory work is an essential component of any chemistry curriculum. However, there is a gap between such highly prescripted activities and actual professional practice. The Department offers an opportunity to engage in an experience related to careers in chemistry through the experiential placement course CHEM 3EP3. In this non-traditional course, there is no instructor or class meeting. Instead, the student identifies their own learning goals and spends the course time working 60 hours with a placement supervisor of record to achieve those goals. A McMaster faculty member acts as academic supervisor of record in order to assign a final grade. Placement for students in the proposed program must be relevant to sustainable chemistry.

The opportunities for experiential learning are broad and will likely be more attractive to students than co-op positions (although those will still be possible). Participants in our focus group composed of potential government and industry partners were enthusiastic about developing a "menu" of opportunities for such educational placements and a formal mechanism for connecting students with potential placement supervisors. Such pre-planned 3EP3 projects with these industrial and government partners who are already engaged in the new program will significantly ease the accessibility of this program for interested undergraduates.

4.5 ACCESSIBILITY

McMaster is committed to be fully compliant with the Accessibility for Ontarians with Disabilities Act (AODA) and Ontario Human Rights Code. Corresponding training is mandatory for all McMaster faculty, staff, student-staff, student leaders and volunteers. Additional Accessible Education training is strongly encouraged for all instructional staff. Students with disabilities who require academic accommodation are served by the office of Student Accessibility Services. Academic Accommodation is also possible for Religious, Indigenous or Spiritual Observances in the form of making alternative arrangements for classes, assignments, and tests. McMaster also provides students, staff and faculty access to SensusAccess, an online document conversion system supporting the transformation of text and image-based file types into different formats, including output in audio, Braille, or e-text formats. Renovations of the teaching laboratories included establishment of bench space for students with disabilities.

4.6 RESEARCH REQUIREMENTS (IF APPLICABLE)

Although it is not a requirement, students who are interested in acquiring experience in chemical research have access to three courses. The level-III research practicum in chemistry (CHEM 3RP3) will award 3 units of academic credit for research done for at least 120 h during one semester in an academic research laboratory; completion of the course requires the submission of a written report to the supervisor. In level IV, students can take a 240-h research project (CHEM 4RP6) or the senior thesis course (CHEM4G12). The latter takes a greater time commitment as it is worth 12 units of academic credit and requires the submission of a thesis and a seminar presentation to the Department.

5 ASSESSMENT OF LEARNING

5.1 METHODS FOR ASSESSING STUDENTS

Traditional evaluation methods such as written exams and assignments are the most frequently used in the Department of Chemistry and Chemical Biology. However, our courses emphasize application of knowledge and this typically is the focus of exams and assignments. Rote memorization is seldom enough to succeed in the courses. It is, of course, not possible to probe the full scope of a student's abilities with exams and assignments. Consequently, all courses include additional evaluation methods. Written reports and oral presentations serve not only as an evaluation method, but also as a means to develop communication skills.

In the research courses CHEM 3RP3, CHEM 4RP6 and CHEM 4G12 students conduct research under the supervision of faculty members. Written progress reports are submitted during the first semester; a full thesis report document and a 20-minute oral presentation are required at the end of the course. Evaluation in these courses includes components for the written reports, the oral presentation and experimental performance. Execution of such research projects requires students to apply all the background and skills developed throughout their undergraduate program. This is the prime opportunity for students to demonstrate and apply their breadth and depth of knowledge, familiarity with methodologies, communication skills, and awareness of the limits of their own knowledge and autonomy. It all sums up to a demonstration of their abilities as professionals of the chemical sciences, ready to pursue a career and/or further education.

For students who are unable to secure a position in a research group for the thesis courses, a selection of advanced courses provide alternative options for graduation. These courses provide a good alternative to the capstone experience provided by the thesis courses because they emphasize the application of knowledge to complex problems, in cutting-edge areas of the chemical sciences, usually require some independent research, and include the development of communication skills amongst their objectives.

5.2 CURRICULUM MAP

The following table provides a curriculum map for the sustainable chemistry program. The map demonstrates the alignment of the Learning Outcomes of individual courses with the departmental expectations specific to the proposed program (D.1-4, section 1.4). Naturally each course impacts only a subset of the Learning Outcomes, and to differing extents. The progression towards mastering the learning outcomes is apparent in the map.

Naturally, the specific learning outcomes addressed in the experiential and research courses (CHEM 3EP3, 3RP3, 4RP6, 4G12) will depend on the details of the tasks and research undertaken by the student. The Department will ensure that the activities of the students in sustainable chemistry are relevant to at least one of the learning outcomes of the new program.

Table 4. Curriculum Map

Course Code	Course Name	Sustainable Chemistry LOs			
		D.1	D.2	D.3	D.4
	Required Courses				
CHEM 1AO3*	Introductory Chemistry I	I	I	I	
CHEM 1AA3*	Introductory Chemistry II	I	I	I	
CHEM 2SC3	Sustainable Chemistry - Green Chemistry	I	I	I	
CHEM 2A03	Quantitative Chemical Analysis	I	I	I	I
CHEM 20G3	Structure and Reactivity of Organic Molecules		I		
CHEM 2II3	Introductory Inorganic Chemistry	I	I	I	
CHEM 2P03	Physical Chemistry			I	
CHEM 2PC3	Mathematical Tools for Chemical Problems				
CHEM 2Q03	Inquiry for Chemistry	R	R	R	
CHEM2LB3	Tools for Chemical Discovery	R	R	R	
BIOCHEM 3G03	Proteins and Nucleic acids				
CHEM 2OD3	Synthesis and Function of Organic Molecules		R		
CHEM 3SC3	Sustainable Chemistry - Natural Resources and Energy	R	R	R	R
CHEM 3I03	Industrial Chemistry	R	R	R	
CHEM 3AA3	Instrumental Analysis	R	R	R	R
CHEM 3II3	Transition Metal Chemistry	R	R	R	
CHEM 3PA3	Quantum Mechanics and Spectroscopy			R	
CHEMBIO 3BM3	BioMaterials	R	R	R	R
CHEM 3EP3	Experiential Chemistry Placement	R‡	R‡	R‡	R‡
CHEM 3RP3	Research Practicum in Chemistry	R‡	R‡	R‡	R‡
CHEM 4RP6	Research Project in Chemistry	R‡	R‡	R‡	R‡
CHEM 4G12	Senior Thesis	R‡	R‡	R‡	R‡
CHEM 4SC3	Sustainable Chemistry - Analysis and Regulation	M	M	M	M

Course Code	Course Name	Sustainable Chemistry LOs			
		D.1	D.2	D.3	D.4
	Course List 2				
BIOLOGY 3ET3	Ecotoxicology	R			
EARTHSCI 2GG3	Natural Disasters	R			
EARTHSCI 3CC3	Earth's Changing Climate	R			
EARTHSCI 4CC3	Stable Isotopes in Earth and Environmental Systems	R			
ENVIRSC 2B03	Soils and the Environment	R			
ENVIRSC 2C03	Environment and Surface Climate Processes	R			
ENVIRSC 2Q03	Introduction to Environmental Geochemistry	R			
ENVIRSC 2WW3	Water and the Environment	R			
ENVIRSC 3O03	Contaminants, Fate and Transport	R		R	
ENVIRSC 4EA3	Environmental Assessment	R		R	R
ENVIRSC 4N03	Global Biogeochemical Cycles	R			
ENVSOCTY 2EI3	Environmental Issues	R			
ENVSOCTY 3EC3	Environmental Catastrophes	R			
ENVSOCTY 3ER3	Sustainability and the Economy	R		R	
ENVSOCTY 3EE3	Energy and Society	R	R	R	
ENVSOCTY 4HH3	Environment and Health				
HTHSCI 4MS3	Toxic Tales: The Social Lives of Molecules	R			
LIFESCI 2X03	Environmental Change and Human Health	R			
POLSCI 3GC3	Global Climate Change	R			
STATS 2B03	Statistical Methods for Science	R			
SUSTAIN 2S03	Evaluating Problems & Sustainable Solutions	R		R	
SUSTAIN 3S03 -	Implementing Sustainable Change			R	

I: Introduced, R: Reinforced, M: Mastery * Required for admission. ‡ Depending on the specific project or placement.

5.3 DEMONSTRATING STUDENT ACHIEVEMENT

Definition of Success:

The program will be externally evaluated during cyclical reviews and assessed on an ongoing basis through indicators such as student grades and awards data. Success will be demonstrated by the reputation that the program establishes in education locally, nationally and globally. The ultimate goal is to be recognized as a leader in this field through a cutting-edge interdisciplinary approach that serves as a model for success in higher education. Based on this definition, student success will be determined by: 1) the level of achievement of its students, in-program and five years post-graduation, and 2) their degree of satisfaction with the program, in-program and five years post-graduation. Student achievement and satisfaction will be assessed both during the program as well as beyond graduation.

Documenting and Communicating Evidence of Student Achievement:

The key assessment pieces outlined above combined with the summative measures from all courses in the program will provide the necessary evidence demonstrating that students have met the program learning outcomes. This information will be maintained to provide information for cyclical IQAP reviews.

Determining Success beyond Graduation:

Beyond graduation, we will judge success by assessing the career success and satisfaction of our graduates and thus we will make every effort to maintain contact with our graduates to this end. University advancement maintains contact lists but the program will attempt to maintain a strong post-graduation community. Graduates will be invited to participate in both informal and in-class settings. The efforts to improve the program, whether in content or delivery, in response to the data/feedback will be routine and on-going.

6 RESOURCES

6.1 UNDERGRADUATE PROGRAMS

6.1.1 ADMINISTRATIVE, PHYSICAL AND FINANCIAL RESOURCES

The Department currently serves approximately 200-250 undergraduate students distributed in two programs, Honours Chemistry and Honours Chemical Biology, plus their respective co-op versions. There currently is capacity within existing departmental resources to administer the new program. The financial template submitted to McMaster reflects the true cost of the program (versus identifying incremental costs to the Faculty). We do not anticipate recruiting additional students into the Faculty of Science; instead it is expected that sustainable chemistry will attract students that otherwise would register for Honours Life Science.

The Department has a designated Associate Chair for Undergraduate Studies who oversees the academic administration of the programs, an Undergraduate Advisor that evaluates academic credentials and evaluates requests for academic permission, and an Undergraduate Administrative Assistant who also serves as Academic Program Advisor and is the primary contact for students in all matters related to this program. The proposed program will be served by the same team.

The total number of (3-unit) course sections that need to be filled annually currently sits at ca. 50-55, over all four levels of instruction. The "normal" teaching assignment for full-time faculty in the department is 2 course sections (6 units) of undergraduate and 1.5 units of graduate teaching per year. Our department's faculty complement consists of 29 full-time faculty members. After reduced teaching responsibilities due to joint appointments with other academic units, administrative loads, research fellowships or chairs, or medical issues, and research leaves, the total number of course sections that can in principle be filled by full-time faculty members in a given year is 45-50. The resulting shortfall in assignable teaching units is filled by sessional instructors or (infrequently) by faculty teaching on overload. Currently the Department has initiated the search for three new faculty members, one would be a teaching-track appointment, the other two will be aregular tenure-track professors in Molecular Medicine and Environmental Chemistry. All three of these appointments will be beneficial to the new program.

Six technical staff members in the Department (two PhD- and the rest at the BSc level) focus all or part of their activities on undergraduate education, either as Instructional Assistants (2.0 FTEs) or Technicians (4.0 FTEs). The majority of the TAs employed in our department are Chemistry or Chemical Biology graduate students, supplemented by some level 4 Chemistry and Chemical Biology undergraduate students in the laboratory sections of the level-I courses (all three terms) and the level-II organic chemistry service courses CHEM 2OA3 and 2OB3 (summer term only). With the exception of the "peer mentors" who serve in CHEM/CHEMBIO 2Q03, the TAs for the courses in the Honours programs are Chemistry or Chemical Biology graduate students exclusively. The total number of 65-hour TA positions filled each year varies, but was ca. 302 in 2018-19 and ca. 284 in 2017-18. Roughly 75% of these positions are filled by graduate students while the remainder are filled by senior undergraduates from our Honours programs; the latter are

employed exclusively in the level-I laboratory programs. We consider the employment of our senior Honours students as TAs to be a very valuable and effective way of supplementing and reinforcing the training they receive in our programs. The three new sustainable-chemistry courses would require 6 TA units in total.
Pro-rated costs for all staff members, including the Chair have been included in the budget template. Undergraduate course offerings will be monitored over the next three to five years; unnecessary low-enrolment courses will be discontinued.

Physical Resources. The department uses a total of ca. 27,000 ft^2 of undergraduate laboratory space (see Section 5.3), of which 5850 ft^2 is used for level 1 chemistry (laboratories + level 1 Help Centre), 3600 ft^2 is used by the level 2 organic service courses, and ca. 9000 ft^2 is used by the two Honours programs (3284 ft^2 dedicated laboratory space / program + 4000 ft^2 of equipment or overflow space that is shared between the two). In addition to this, a 540 ft^2 room provides well-used study space for students in the two Honours programs. The level I program occupies the laboratories for 15 sessions / week and the level II service courses 6 sessions / week, whilst the space dedicated to the Honours programs is used for 3-5 sessions per week. The footprints and usage rates of the various laboratory spaces are a reflection of the types and amounts of glassware, small equipment, and instrumentation required by the various programs (high for the Honours programs; low for the level II service courses; very low for the level I courses) and the amount of effort required from our staff members to clean and refit or reconfigure the labs between sessions and/or courses. The Honours laboratories are used in a total of 6 different courses, each with unique materials and equipment requirements, while the levels I and II organic labs are used by a single course per term. Technical space exists on each floor of the undergraduate laboratory wing and in the basement of the building, and totals ca. 4800 ft^2 in combined area, divided roughly equally between equipment storage space and chemical storage and preparation space. Implementation of the proposed program can be achieved within the space currently available to the Department, thus no additional costs for space would be incurred.

6.1.2 LIBRARY, TECHNOLOGY, AND LABORATORY RESOURCES

Instrumental methods are essential to modern chemistry. Undergraduate chemistry and chemical biology students have access to an array of techniques that includes ultraviolet-visible, infrared, fluorescence, nuclear magnetic resonance and Raman spectroscopies, high performance and gas chromatography. The corresponding instrumentation has been acquired thanks to a combination of funds from the University, alumni donations and partnerships with corporations such as Varian Canada and Bruker Canada. That is on top of equipment for synthesis and characterization that includes facilities for handling very reactive materials under inert atmosphere using Schlenk lines and a glove box. The same equipment will be available to sustainable chemistry students. In this regard, no investment is envisioned for the new program beyond the current capital replacement plan. Recent donations to the Department may be utilized if necessary. For example, the Audrey Cameron Estate, which in first instance has been earmarked to support undergraduate research scholarships within the Department.
Operating Expenses. Annual expenditures on undergraduate laboratory supplies (i.e. consumables such as chemicals, etc., glassware, and small equipment) are in the range of ca. $100K / year. Our laboratory coordinators are very conscientious – and quite creative – in finding ways to save money on expenses. For example, purchasing of chemicals, new glassware, and consumables for the laboratory programs is done through bulk orders placed once or twice a year through a competitive bidding process. Glassware accounts for the largest fraction of the supplies budget. We are as frugal as possible with glassware in the undergraduate laboratories, and charge students for the replacement of anything we can establish they had a hand in breaking, up to a limit of $50/item.

When possible, broken glassware is sent for repairs to glassblowers at nearby institutions such as Brock and Western University.

The library resources available provide sufficient scholarly support for the teaching and research needs of the proposed undergraduate curriculum. McMaster University Library's holdings currently total more than 2.2 million volumes, with some 2 million distinct titles. Print books, print journals, and reference resources for students in the existing Chemistry and Chemical Biology programs are housed primarily in the H. G. Thode Library of Science and Engineering. Currently, the McMaster community has access to more than 1.1 million electronic resources, including approximately 90,000 electronic journals and more than 600,000 e-books. Additionally, the Library makes additional e-book titles available through a user-driven "purchase on demand" process. The Library welcomes input from faculty in the program regarding needed information resources and priority of acquisition within the established budget for Chemistry and Chemical Biology. The annual expenditure figures for the acquisition of library materials for Chemistry and Chemical Biology over recent fiscal years are listed in Table 5. In addition to those expenditures specific to the Department, the Library now spends in excess of $6.8 million annually on electronic resources, many of which are multi-disciplinary.

Table 5. Library expenditures in support of Chemistry & Chemical Biology, 2014-2018

FISCAL YEAR	MONOGRAPH	SERIALS	TOTAL	ELECTRONIC RESOURCES
14/15	$6,374	$40,965	$47,340	$5,608,823
15/16	$4,323	$42,283	$46,606	$6,316,841
16/17	$5,554	$46,763	$52,317	$7,005,009
17/18	$2,432	$41,438	$43,870	$7,018,965
18/19	$10,005	$61,375	$71,380	$7,635,996

6.1.3 FACULTY

The department now consists of 29 full-time faculty members, including 2 teaching professors. Four of the faculty members hold joint appointments with the Department of Biochemistry & Biomedical Sciences. There are four Canada Research Chairs.

Table 6.

Name	Class of Appointment
Alex Adronov	Professor
Paul W. Ayers	Professor[b]
Paul J. Berti	Professor [a]
John D. Brennan	Professor[b]
Philip Britz-McKibbin	Professor
Michael A. Brook	Professor
David J.H. Emslie	Professor
Gillian R. Goward	Professor
Adam P. Hitchcock	Professor
William J. Leigh	Professor
Yingfu Li	Professor[c]
Jim McNulty	Professor
Giuseppe Melacini	Professor[a]
Yurij Mozharivskyj	Professor[d]
Gary J. Schrobilgen	Professor
Harald D.H. Stöver	Professor
John F. Valliant	Professor
Alfredo Capretta	Associate Professor
Randall S. Dumont	Associate Professor
Paul H.M. Harrison	Associate Professor
Peter Kruse	Associate Professor
Pippa Lock	Associate Professor[e]
Nathan A. Magarvey	Associate Professor[c]
Jose M. Moran-Mirabal	Associate Professor[d]
Kalaichelvi Saravanamuttu	Associate Professor
Ignacio Vargas-Baca	Associate Professor
Anthony Chibba	Assistant Professor (CLA)
Sharonna Greenberg	Assistant Professor
Ryan Wylie	Assistant Professor

a) Joint appointment with Biochemistry & Biomedical Sciences, with primary undergraduate teaching in Chemistry & Chemical Biology
b) Canada Research Chair (Tier I)
c) Joint appointment with Biochemistry & Biomedical Sciences; no undergraduate teaching in Chemistry & Chemical Biology
d) Canada Research Chair (Tier II)
e) On leave

The standard teaching load in the Department is 7.5 units; i.e. two 1-semester undergraduate courses plus 1 graduate module. Two of the joint appointments carry out all their formal teaching in Biochemistry while the other two have 4.5-unit duties in our department. After teaching relief associated with major awards, and administrative positions is subtracted out, the total number of undergraduate teaching units available to the Department is 136-140. The number of teaching units that must be covered off in a given year to accommodate research leaves ranges from 6 to 18.

6.1.4 ANTICIPATED CLASS SIZE

The strongest indicator of potential enrollment in the new program is given by the number of students (27) already enrolled in CHEM2SC3. Once the program is established, this would likely scale up to 50 in each class.

6.1.5 PROGRAM IMPLEMENTATION

Although this proposal is being submitted to McMaster during the fall of 2019, as noted in 1.5, CHEM 2SC3 is already being offered under Dean's permission. Full approval of the program is expected by the summer of 2020 for the first class of Sustainable Chemistry to start in September 2020. The new courses CHEM 3SC3 and CHEM 4SC3 will be offered for the first time in 2020-2021 and 2021-2022. After that, there will be no need to open any new course for Sustainable Chemistry to be fully established.

7 QUALITY AND OTHER INDICATORS

7.1 ACADEMIC QUALITY OF THE PROGRAM

Evidence of Quality of the Faculty:
Faculty members are assessed based on their research performance through the quality of publications, research funding, supervision of graduate and undergraduate students, teaching evaluations and administrative service to the university or community.

Funding, Publications and Graduate Supervision:
Faculty from Chemistry and Chemical Biology are highly successful, well-funded and recognized in their respective fields. During the 2017 calendar year, the department held $6.2M in research funding, and published 148 articles. Faculty within the program who are either tenured or tenure-track are highly involved in student supervision at all levels, including undergraduate, Master's, Doctoral and Post-Doctoral. In the 2017 time period, faculty supervision of graduate students totalled just under 80 students within Chemistry and Chemical Biology alone.

Undergraduate students in this program will work with graduate students work in state-of-the-art laboratory facilities that have the necessary equipment to conduct cutting-edge and innovative research, which is supported through the various research awards summarized above.

From the student perspective, academic quality will be monitored through means such as enrolment monitoring and student feedback. As indicated in section 5.3, academic success of the student body will be demonstrated through monitoring students throughout the program as well as after graduation. Academic quality and academic success will be monitored carefully throughout the program to ensure strong correlation of the two.

7.2 INTELLECTUAL QUALITY OF THE STUDENT EXPERIENCE

Students will experience a unique combination of rigorous training in chemistry, along with an additional sustainability component that is primarily, but not exclusively, focussed on the role that chemistry plays not just in creating unsustainable human processes, but in correcting them to make them greener. The strong chemistry core will allow students to follow a single sub-discipline of chemistry to the same depth as a student in the regular chemistry program, should they wish: no higher-level chemistry courses will be unavailable to students in this program. At the same time, less focus on other sub-disciplines releases elective space that can be used in each level to complete the core sustainability courses, CHEM 2SC3, 3SC3 and 4SC3, while still allowing space where students might choose a sustainability theme outside the world of chemistry. As such, we fully expect that students will benefit from the greater ability to make choices in their elective courses (a much sought attribute) without losing the rigour of a traditional science component.

McMaster University

SCIENCE

Report to Undergraduate Council for the 2020-2021 Undergraduate Calendar

Approved by the
General Faculty of the Faculty of Science

November 21, 2019

FACULTY OF SCIENCE

REPORT TO SENATE

SUMMARY OF MAJOR CURRICULUM CHANGES FOR 2020-2021

Following, is the summary of substantive curriculum changes being proposed by the Faculty of Science. For a complete review of all changes, refer to the November, 2019, Report of the Academic Planning and Policy Committee for changes to the 2019-2020 Undergraduate Calendar, found at:

https://macdrive.mcmaster.ca/f/1a385ffc308e4ed0b457/?dl=1

1.0 NEW PROGRAMS:

1.1 Honours Sustainable Chemistry (B.A.Sc.)

(The availability of this program is subject to Ministry approval.)
Admission Note:
Students intending to complete CHEM 3PA3 are required to complete one of PHYSICS 1A03 or 1C03 in Level I. Completion of PHYSICS 1AA3 or 1CC3 are recommended.

ADMISSION
Completion of any level I program with a Grade Point Average of at least 5.0 including:
6 units from the following courses, where an average of at least 6.0 (between courses) is required

- CHEM 1A03 – Introductory Chemistry I
- CHEM 1AA3 – Introductory Chemistry II
- CHEM 1E03 – General Chemistry for Engineering I

3 units from

- MATH 1A03 – Calculus for Science I
- MATH 1LS3 – Calculus for the Life Sciences I
- MATH 1M03 – Calculus for Business, Humanities and the Social Sciences
- MATH 1X03 – Calculus for Math and Stats I
- MATH 1ZA3 – Engineering Mathematics I

6 units from

- Science I Course List (See *Admission Note* above.)

Program Notes:

1. In some cases there are Level II and III prerequisites for Level III and IV courses. The prerequisites should be considered when choosing your Level II and III courses.
2. Students are encouraged to seek academic advising from the Departmental Undergraduate Advisor (email: advisor@chemistry.mcmaster.ca).
3. Certain Level IV courses are offered in alternate years. Students are advised to consider course offerings carefully in planning their course selection for Levels III and IV.

Course List 1:

- CHEM 2A03 - Quantitative Chemical Analysis
- CHEM 2II3 - Introductory Inorganic Chemistry: Structure and Bonding
- CHEM 2LB3 - Tools for Chemical Discovery

- CHEM 2OD3 - Synthesis and Function of Organic Molecules
- CHEM 2OG3 - Structure and Reactivity of Organic Molecules
- CHEM 2P03 - Applications of Physical Chemistry
- CHEM 2Q03 - Inquiry for Chemistry
- CHEM 3AA3 - Instrumental Analysis
- CHEM 3BC3 – Bad Chemistry
- CHEM 3EP3- Advanced Chemistry Placement
- CHEM 3II3 - Introduction to Transition Metal Chemistry
- CHEM 3LA3 - Strategies for Chemical Discovery
- CHEM 3I03 - Industrial Chemistry
- CHEM 3OA3 - Organic Synthesis
- CHEM 3PA3 - Quantum Mechanics and Spectroscopy
- CHEM 3PC3 - Mathematical Tools for Chemical Problems
- CHEM 3RC3 - Radioisotopes in Medicine
- CHEM 3RP3 - Research Practicum in Chemistry
- CHEM 4AA3 - Recent Advances in Analytical Chemistry
- CHEM 4D03 - Organic Structure and Synthesis
- CHEM 4G12 - Senior Thesis
- CHEM 4IA3 - Physical Methods of Inorganic Structure Determination
- CHEM 4IB3 -Bio-Inorganic Chemistry
- CHEM 4IC3 - Solid State Inorganic Materials: Structures, Properties, Characterization and Applications
- CHEM 4II3 - Transition Metal Organometallic Chemistry and Catalysis
- CHEM 4OA3 - Natural Products
- CHEM 4OB3 - Polymers and Organic Materials
- CHEM 4PB3 - Computational Models for Electronic Structure and Chemical Bonding
- CHEM 4RP6 - Research Project in Chemistry
- CHEM 4W03 - Natural and Synthetic Materials
- CHEMBIO 3BM3 - Implanted Biomaterials
- CHEMBIO 3OA3 - Organic Mechanistic Tools for Chemical Biology
- CHEMBIO 3OB3 - Structural Elucidation of Natural Products and Small Molecules
- CHEMBIO 3P03 - Biomolecular Interactions and Kinetics
- CHEMBIO 4Q03 - Peer Tutoring in Chemical Biology or Chemistry
- CHEMBIO 4A03 - Bio-Analytical Chemistry and Assay Development
- CHEMBIO 4OA3 - Natural Products
- CHEMBIO 4OB3 - Medicinal Chemistry: Drug Design and Development

Course List 2:

- BIOLOGY 3ET3 - Ecotoxicology
- EARTHSCI 2GG3 - Natural Disasters
- EARTHSC 3CC3 - Earth's changing climate
- EARTHSC 4CC3 - Stable Isotopes in Earth and Environmental Systems
- ENVIRSC 2B03 - Soils and the Environment
- ENVIRSC 2C03 - Environment and Surface Climate Processes
- ENVIRSC 2Q03 - Introduction to Environmental Geochemistry
- ENVIRSC 2WW3 - Water and the Environment
- ENVIRSC 3O03 - Contaminants, Fate and Transport
- ENVIRSC 4EA3 – Environmental Assessment
- ENVIRSC 4N03 - Global Biogeochemical Cycles
- ENVSOCTY 2EI3 - Environmental Issues
- ENVSOCTY 3EC3 - Environmental Catastrophes
- ENVSOCTY 3ER3 - Sustainability and the Economy
- ENVSOCTY 3EE3 - Energy and Society

- ENVSOCTY 4HH3 - Environment and Health
- HTHSCI 4MS3 - Toxic Tales: The Social Lives of Molecules
- LIFESCI 2X03 – Environmental Change and Human Health
- POLSCI 3GC3 - Global Climate Change
- STATS 2B03 - Statistical Methods for Science
- SUSTAIN 2S03 - Evaluating Problems & Sustainable Solutions
- SUSTAIN 3S03 - Implementing Sustainable Change

REQUIREMENTS
120 units total (Levels I-IV), of which no more than 48 units may be level I

Level I: 30 Units
30 Units
(See Admission above)

Level II: 30 Units
3 units
- Sustainable Chemistry - Green Chemistry

12 units from
- CHEM 2A03 - Quantitative Chemical Analysis
- CHEM 2II3 - Introductory Inorganic Chemistry: Structure and Bonding
- CHEM 2LB3 - Tools for Chemical Discovery
- CHEM 2OD3 - Synthesis and Function of Organic Molecules
- CHEM 2OG3 - Structure and Reactivity of Organic Molecules
- CHEM 2P03 - Applications of Physical Chemistry
- CHEM 2Q03 - Inquiry for Chemistry

6 units from
- Course List 2

9 units
- Electives

Level III: 30 units
3 units from
- CHEM 3SC3 - Sustainable Chemistry – Natural Resources and Energy
- CHEM 4SC3 - Sustainable Chemistry – Analysis and Regulation

12 units from
- Course List 1

6 units from
- Course List 2

9 units
- Electives

Level IV: 30 units
3 units from
- CHEM 3SC3 - Sustainable Chemistry – Natural Resources and Energy
- CHEM 4SC3 - Sustainable Chemistry – Analysis and Regulation

12 units from
- Course List 1

6 units from
- Course list 2

9 units
- Electives

1.2 Honours Sustainable Chemistry Co-op (B.A.Sc.)
(The availability of this program is subject to Ministry approval.)

ADMISSION

Enrolment in this program is limited. Selection is based on academic achievement and an interview but requires, as a minimum, submission of the on-line application by the stated deadline, and completion of Level II Honours Sustainable Chemistry with a Grade Point Average of at least 5.0 including:

Level II: 30 units

- CHEM 2SC3 - Sustainable Chemistry - Green Chemistry

12 units from

- CHEM 2A03 - Quantitative Chemical Analysis
- CHEM 2II3 - Introductory Inorganic Chemistry: Structure and Bonding
- CHEM 2LB3 - Tools for Chemical Discovery
- CHEM 2OD3 - Synthesis and Function of Organic Molecules
- CHEM 2OG3 - Structure and Reactivity of Organic Molecules
- CHEM 2P03 - Applications of Physical Chemistry
- CHEM 2Q03 - Inquiry for Chemistry

6 units from

- Course List 2

9 units

- Electives

Information about the program and the selection procedure may be obtained from Science Career and Cooperative Education.

Program Notes

1. This is a five-level (year) co-op program which includes two eight-month work terms that must be spent in appropriate chemistry-related placements.
2. Students must be registered full-time and take a full academic workload as prescribed by Level and by Term.
3. Students are required to complete SCIENCE 2C00 and SCIENCE 3C00 before the first work placement and are strongly recommended to complete SCIENCE 2C00 in Level II.
4. There are Level II and III prerequisites for many Level III and IV courses. The prerequisites should be considered when choosing your Level II and III courses.
5. Students considering postgraduate studies in Chemistry should note that 18 units of Level IV Chemistry or related subjects are required for consideration for admission at McMaster and most graduate schools in Canada.
6. CHEM 4RP6 A/B, 4G09 A/B or 4G12 A/B cannot be taken concurrently with CHEM 3LA3 or 3RP3.

Course List 1:

- CHEM 2A03 - Quantitative Chemical Analysis
- CHEM 2II3 - Introductory Inorganic Chemistry: Structure and Bonding
- CHEM 2LB3 - Tools for Chemical Discovery
- CHEM 2OD3 - Synthesis and Function of Organic Molecules
- CHEM 2OG3 - Structure and Reactivity of Organic Molecules
- CHEM 2P03 - Applications of Physical Chemistry
- CHEM 2Q03 - Inquiry for Chemistry
- CHEM 3AA3 - Instrumental Analysis
- CHEM 3BC3 – Bad Chemistry
- CHEM 3EP3- Advanced Chemistry Placement
- CHEM 3II3 - Introduction to Transition Metal Chemistry
- CHEM 3LA3 - Strategies for Chemical Discovery
- CHEM 3I03 - Industrial Chemistry
- CHEM 3OA3 - Organic Synthesis
- CHEM 3PA3 - Quantum Mechanics and Spectroscopy
- CHEM 3PC3 - Mathematical Tools for Chemical Problems
- CHEM 3RC3 - Radioisotopes in Medicine
- CHEM 3RP3 - Research Practicum in Chemistry
- CHEM 4AA3 - Recent Advances in Analytical Chemistry

- CHEM 4D03 - Organic Structure and Synthesis
- CHEM 4G12 - Senior Thesis
- CHEM 4IA3 - Physical Methods of Inorganic Structure Determination
- CHEM 4IB3 -Bio-Inorganic Chemistry
- CHEM 4IC3 - Solid State Inorganic Materials: Structures, Properties, Characterization and Applications
- CHEM 4II3 - Transition Metal Organometallic Chemistry and Catalysis
- CHEM 4OA3 - Natural Products
- CHEM 4OB3 - Polymers and Organic Materials
- CHEM 4PB3 - Computational Models for Electronic Structure and Chemical Bonding
- CHEM 4RP6- Research Project in Chemistry
- CHEM 4W03 - Natural and Synthetic Materials
- CHEMBIO 3BM3 - Implanted Biomaterials
- CHEMBIO 3OA3 - Organic Mechanistic Tools for Chemical Biology
- CHEMBIO 3OB3 - Structural Elucidation of Natural Products and Small Molecules
- CHEMBIO 3P03 - Biomolecular Interactions and Kinetics
- CHEMBIO 4Q03 - Peer Tutoring in Chemical Biology or Chemistry
- CHEMBIO 4A03 -Bio-Analytical Chemistry and Assay Development
- CHEMBIO 4OA3 - Natural Products
- CHEMBIO 4OB3 - Medicinal Chemistry: Drug Design and Development

Course List 2:
- BIOLOGY 3ET3 - Ecotoxicology
- EARTHSCI 2GG3 - Natural Disasters
- EARTHSC 3CC3 - Earth's changing climate
- EARTHSC 4CC3 - Stable Isotopes in Earth and Environmental Systems
- ENVIRSC 2B03 - Soils and the Environment
- ENVIRSC 2C03 - Environment and Surface Climate Processes
- ENVIRSC 2Q03 - Introduction to Environmental Geochemistry
- ENVIRSC 2WW3 - Water and the Environment
- ENVIRSC 3O03 - Contaminants, Fate and Transport
- ENVIRSC 4EA3 – Environmental Assessment
- ENVIRSC 4N03 - Global Biogeochemical Cycles
- ENVSOCTY 2EI3 - Environmental Issues
- ENVSOCTY 3EC3 - Environmental Catastrophes
- ENVSOCTY 3ER3 - Sustainability and the Economy
- ENVSOCTY 3EE3 - Energy and Society
- ENVSOCTY 4HH3 - Environment and Health
- HTHSCI 4MS3 - Toxic Tales: The Social Lives of Molecules
- LIFESCI 2X03 – Environmental Change and Human Health
- POLSCI 3GC3 - Global Climate Change
- STATS 2B03 - Statistical Methods for Science
- SUSTAIN 2S03 - Evaluating Problems & Sustainable Solutions
- SUSTAIN 3S03 - Implementing Sustainable Change

REQUIREMENTS
120 units total (Levels I to IV), of which no more than 48 units may be Level I
Level I: 30 Units
Completed prior to admission to the program

Level II: 30 Units
- Completion of any Level II Honours Sustainable Chemistry program

1 course

- SCIENCE 2C00 - Skills for Career Success in Science

Level III:
Consists of academic studies (Fall Term), Co-op Work Term (Winter Term), and Co-op Work Term (Spring/Summer Term)
Fall Term: 15 units:
6 units from
- Course List 1

3 units from
- Course List 2

6 units
- Electives

2 courses
- SCIENCE 2C00 - Skills for Career Success in Science (if not already completed)
- SCIENCE 3C00 - Advanced Job Search Skills For Science Co-op Students

Winter Term:
Work Term
1 course
- SCIENCE 3WT0 - Science Co-op Work Term

Spring/Summer Term:
Work Term
1 course
- SCIENCE 3WT0 - Science Co-op Work Term

Level IV
Consists of academic studies (Fall and Winter Terms) and Co-op Work Term (Spring/Summer Term)
Fall and Winter Terms: 30 units:
3 units from
- CHEM 3SC3 - Sustainable Chemistry – Natural Resources and Energy
- CHEM 4SC3 - Sustainable Chemistry – Analysis and Regulation

12 units from
- Course List 1

6 units from
- Course list 2

9 units
- Electives

Spring/Summer Term:
Work Term
1 course
- SCIENCE 4WT0 - Science Co-op Work Term

Level V
Consists of Co-op Work Term (Fall Term) and academic studies (Winter Term)
Fall Term:
Work Term
1 course
- SCIENCE 5WT0 - Science Co-op Work Term

Winter Term: 15 units:
3 units from
- CHEM 3SC3 - Sustainable Chemistry – Natural Resources and Energy
- CHEM 4SC3 - Sustainable Chemistry – Analysis and Regulation

6 units from
- Course List 1

3 units from
- Course list 2

3 units
- Electives

Co-op Program Chart

	FALL TERM (September to December)	**WINTER TERM (January to April)**	**SPRING/SUMMER TERM (May to August)**
Level III	15 units from Academic Level III + SCIENCE 2C00 (if not completed) and SCIENCE 3C00	Work Term SCIENCE 3WT0	Work Term SCIENCE 3WT0
Level IV	15 units from Academic Level III	15 units from Academic Level IV	Work Term SCIENCE 4WT0
Level V	Work Term SCIENCE 5WT0	15 units from Academic Level IV	

Justification (1.1 & 1.2):

To complement the Honours B.Sc in Chemistry and Chemical Biology programs – both providing an intense, focused curriculum designed to prepare students for graduate or professional school - the Department is introducing the Honours B.A.Sc. in Sustainable Chemistry. The flexible curriculum and interdisciplinary nature of this program will allow students to explore areas of study in greater breath and focus on key interactions of chemistry with other disciplines and relevant to the private sector. As well, a suite of Sustainable Chemistry courses CHEM 2SC3, 3SC3, and 4SC3 form a cohesive core to the program. These offerings focus on environmental, regulatory and safety issues, matters that have a clear relationship to, but transcend, chemistry, and that are in heavy demand in the employment sector (e.g. government employment). A Co-op option is available and will have an enrolment limit. It is believed that Sustainable Chemistry students, especially those in the co-op option, will bring a unique and valuable skill set to employers.

New Undergraduate Program or Existing Program Undergoing Major Changes (more than 30%)
Details of Resource Implications and Financial Viability **Faculty:** Science
Program Name: Sustainable Chemistry

A. FINANCIAL SUSTAINABILITY OF PROGRAM

Complete New UnderGraduate 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)

REVENUE	2020/21	2021/22	2022/23	2023/24	2024/25
Program Generated Gross Undergraduate Revenue - University	$211,548	$633,679	$1,043,935	$1,262,195	$1,291,734
Less Tuition to Other Faculties for Service Teaching	-$22,496	-$66,407	-$108,068	-$128,314	-$128,314
Add Residual Tuition Allocation to Lead Faculty (Estimated)	$0	$0	$0	$0	$0
Less SAG Obligation Contribution	$0	$0	$0	$0	$0
Tuition Revenue - Lead Faculty	**$189,053**	**$567,272**	**$935,867**	**$1,133,881**	**$1,163,419**
Gross Grant Revenue - Lead Faculty	**$197,501**	**$582,831**	**$948,891**	**$1,127,123**	**$1,127,123**
Other Revenue (Specify)	$0	$0	$0	$0	$0
Total Gross Undergraduate Revenue to Lead Faculty	**$386,554**	**$1,150,103**	**$1,884,758**	**$2,261,004**	**$2,290,542**
University Fund / Research Infrastructure Contribution	-$28,599	-$85,090	-$139,444	-$167,281	-$169,466
Total Support Unit Allocations (Indirect Costs)	-$342,740	-$544,917	-$737,101	-$829,925	-$829,087
Net Revenue	**$15,214**	**$520,095**	**$1,008,214**	**$1,263,799**	**$1,291,989**
Total Teaching Costs	-$368,832	-$775,654	-$1,224,969	-$1,480,318	-$1,494,491
Total Admin Salaries & Benefits	-$63,350	-$65,250	-$67,208	-$69,224	-$71,301
Total Student Support (From operating)	$0	$0	$0	$0	$0
Total Capital/Equipment Costs	-$21,667	-$22,750	-$23,888	-$25,082	-$26,336
Total Other Direct Expenses - Supplies/Services/Travel etc	-$14,700	-$19,058	-$21,233	-$21,437	-$21,646
Total Share of Faculty's Central Expenses	**$0**	**$0**	**$0**	**$0**	**$0**
PROGRAM EXPENSES	**-$468,549**	**-$882,712**	**-$1,337,297**	**-$1,596,061**	**-$1,613,774**
IN-YEAR (Surplus/ Deficit)	**-$453,334**	**-$362,616**	**-$329,083**	**-$332,262**	**-$321,784**

*Note: In assessing total revenue to the unversity, the "Tuition to other Faculties"line should be added back in to surplus/deficit line

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.

This template has been developed for the Sustainable Chemistry Program, which will be a stream of the current undergraduate Chemistry Program (i.e. content change is less than 30 percent). Enrolment in the Honours Chemistry Program has decreased, enabling the department to launch a new stream within current expenditures (i.e. no net new space, faculty, or staff will be required).This template has been developed to reflect the "true cost" of operating this program (vs incremental costs to the faculty). 312K support unit allocation costs already exists within Chemistry. Incremental costs to the Faculty includes the mounting of 3 new courses, the associated incremental teaching assistants (approx 6., during steady state), and some small operating costs (e.g. marketing)

B. NUMBER OF STUDENTS

	FT	PT		
Intended Steady-state annual intake	50		Year achieved:	2021
Intended Steady-state total enrolment	143		Year achieved:	2023
Number of International Students included in steady state	14.3	0		

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.) 0

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

Target audience is Faculty of Science Year 1 students

C. FORMAT OF INSTRUCTION

	Fall	Winter	Summer (May-June)	Summer (July-August)	Annual program units?
During which terms will the program run?	XX	XX			30

Is there a co-op or internship as part of the program? Yes Describe: **Both options will be available to students**

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

If either is greater than zero please provide information:

D1. PROPOSED TUITION FEE

reference: http://www.mcmaster.ca/bms/student/pdf/fees_included.pdf

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

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

Proposed Tuition Fee:

	Domestic		International	
	Full Time	Part Time	Full Time	Part Time
Per Year :				
Per Term (if applicable):				
Per Course (if applicable):				

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

reference: http://www.mcmaster.ca/bms/student/pdf/fees_included.pdf

Will regular Mandatory Supplementary Fees apply? Full Time **Yes** Part Time **Yes** Modified only **No**

*If no, please contact **Assistant Dean, Student Affairs x27633** 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?) Yes

Describe & Approximate amounts: *Coop or Internship fees, if the students choose this option*

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.

	Onetime	Ongoing	Value $	Details
Donations		*x*	*50K*	*Audrey Cameron Estate; offset instrumentation and scholarships available to Chem and ChemBio UG students*

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 Faculty: **N/A** Faculty: **N/A** Faculty: **N/A**

Incremental FTEs required:	**Science**	**N/A**	**N/A**	**N/A**	**Comments**
Faculty - Tenure Track					
Faculty - Sessional and CLAs					
Staff					
Teaching Assistants					**Note: 6 half TA s will be required at steady state**
Additional Non-salary costs in other Faculties					

Increases in FT faculty are for modeling purposes only and does not imply approval to hire. Normal approval pracesses apply.

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.*

Please indicate the likely space resource implications of the proposal	**Impact**	**New Sq Ft Required**	**Approx Existing Sq Ft required**	**Comments (include location and for new space, plans to fund and acquire apace)**	**If major new central budget req'd, estimate $**	
Faculty space- Offices,Labs,seminar rooms, student space, etc	None	-	619.0	**A third UG instructional space, already existing**		*Facilties*
Other space (excluding registrar controlled classrooms)	None					*Facilties*

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

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

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

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

4. OFFICE OF THE UNIVERSITY REGISTRAR - *Please contact the **Registrar** for assistance in determining impact if needed.*

Please indicate the likely resource implications of the proposal	Impact (Select)	Support required	Area Responsible	If Major, estimate $	
Admissions/Recruitment	None	Admission and recruiting services not required	Registrar		*Registrar*
Student Record Support (maintaining records, transcripts, grades, student card, etc)	None	No student record support required			*Student Affairs*
Class Scheduling Services	None	Managed by Dept/Faculty			*Student Affairs*
Classrooms	Minor	Requires less than Qty 5 classes of max 140 seats			*Student Affairs*

5. STUDENT SUPPORT - *Please contact **Assistant Dean, Student Services x27633** for assistance in determining impact if needed.*

Please indicate any other possible resource impacts	Impact	Please Describe any impacts on the support areas	If Major, estimate $	
Student Services - International Student support	None			*Student Affairs*
Student Services - Athletics & Rec, Health/Counselling, Career	None			*Student Affairs*
Residences	None			*Ancillaries*
Scholarships/Bursaries* *(Contact SFAS for more information)*	None			*Scholarships*

**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.*

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

7. OTHER

Please indicate any other possible resource impacts	Impact	Please Describe any impacts on the support areas	If Major, estimate $	
Financial Services	None			*Financial Affairs*
Human Resources	None			*HR*
Advancement	None			*UA*
Research Services Office	None			*Research Support*
Other (Please specify)	None			

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

		Check box
Department Chair/ Area Director	Alex Adronov, Interim Chair, Chemistry and Chemical Biology	X
Faculty Dean or Director of Administration	Kathleen Blackwood, Director of Finance and Administration	X
Executive Director , Finance & Planning (Academic)	Linda Coslovi, AVP Finance & Planning	X

Submitter Salina Jaffer, Administrator, Chemistry and Chemical Biology

Attachment I

McMaster University

NEW PROGRAM PROPOSAL

Integrated Arts (iArts)

September 2019

TABLE OF CONTENTS

1 PROGRAM

1.1 PROGRAM DESCRIPTION

The Integrated Arts (iArts) programs presented here re-envision undergraduate arts pedagogy at McMaster. The innovative curricula prepare arts students for a variety of careers and significantly increase access to and engagement with arts research practices across campus. New and more broadly accessible programs have been designed to put the arts in every corner of campus and to encourage and support the inclusion of arts research in interdisciplinary collaborations across the university.

The programs integrate practice and critical theory to different degrees at every level and in every class, and train artist researchers for the ever-changing landscape of the contemporary arts economy and community arts practice. They also prepare students to bring arts insight and leadership to cross-disciplinary collaborations in other fields of study or areas of business. The curriculum is designed to produce artists and graduates ready to impact society in multiple ways, and to contribute to the resolution of the key problems we face today.

In 2018, the Provost's office released a statement promoting a new alignment of arts programming at McMaster "with the expansion of new opportunities in the University and in the City of Hamilton." He described his vision for "an integrated and interdisciplinary program in the creative and performing arts that makes the most of McMaster's unique commitment to student-centered curriculum. In keeping with the spirit of those programs, McMaster will offer students a distinctive educational experience that will prepare them to excel in the arts and performance worlds of the twenty-first century."
https://dailynews.mcmaster.ca/worthmentioning/keeping-the-arts-strong-at-mcmaster/

The School of the Arts proposes a BFA and a BA Honours in Integrated Arts (iArts), two programs that offer core knowledge in multiple disciplinary practices while encouraging students to expand beyond traditional arts practice to engage with one another and with the University and community at large. The redesigned programs are built on the more than fifty years of arts programs at McMaster, and challenge its students to consider more critically arts practice as research. The table below introduces the possible degrees of the programs – including three possible pathways called specializations. Further description follows.

Program	Perspectives Courses	Investigations Courses	Investigations Courses in Area of Specialization	Project Courses	Courses in Other Subject	Modules & Electives
BA	12 units	45 units (including optional 6-unit thesis project)				63 units
BA with Specialization	12 units	12 units	30 units			66 units
BA Combined Honours	12 units	30 units (including optional 6-unit thesis project)			36 units	42 units
BFA	15 units	45 units		30 units (including 12-unit thesis project)		30 units
BFA with Specialization in CCC	15 units	15 units	30 units	30 units (including 12-unit thesis project)		30 units
BFA with Specialization in Studio or Performance	15 units	18 units	27 units	30 units (including 12-unit thesis project)		30 units

The new curriculum is planned with an eye to issues of social justice, equity, and inclusion. We are committed to de-centering the western canon both in the material that we select for study and in the ways that we approach research and teaching. Students will develop their arts research practice through the integration of practical, studio-based explorations, with the study of arts histories and critical theory. We will strengthen our collaborations with departments across campus to ensure our artistic investigations have the broadest reach. We will continue to partner with the wider Hamilton community to build lasting engagements between our students and the city in which they live and work.

This proposal represents Phase One of the Provost David Farrar's grander vision to integrate arts practice across campus. The first phase involves an amalgamation of the current programs in Art History, Studio Art and Theatre and Film Studies, but the iArts curriculum has been designed to enable potential future integrations with Music and Multimedia, should our colleagues be interested in this at a future date (see 6.1.5)

The current Studio Art BFA and the BA Hons. in Theatre and Film Studies already teach multidisciplinary arts using interdisciplinary research and teaching methods. Art History treats a wide range of cultures by means of an impressive array of critical perspectives. Together they are the natural pioneers of Integrated Arts on campus. Through these new programs students at McMaster will have access to professional development in theatre and performance practice, and arts curation, in addition to the visual arts training offered by the current BFA.

Future phases of the iArts curriculum will be defined under the leadership of the new director and in accordance with the wishes of fellow faculty across campus. We envision some possible cross-campus collaborations in section 6.1.5 of this document, but understand that these things take time, and that a major administrative commitment will be needed to fully integrate the arts at McMaster.

Phase One is designed to be resource neutral in terms of current faculty complement teaching hours. (Sessional teaching support may be necessary to support the old programs as they close down.) The programs do require investment in physical resources that allow for collaborative creation space: a lecture/demo classroom, and three labs located adjacent to the studio workshop, that will be essential to facilitate interdisciplinary collaboration between faculty, technical staff, and students (see further description below, section 6.1.1).

The School of the Arts is also entering a cycle of faculty renewal, and it is assumed that the Faculty of Humanities will commit to tenure-stream hires for all lines currently assigned to the School, in order to provide the stability and creative-intellectual resources to realize the ambitious program design.

Self-directed student learning is a key element in our program design. Students can choose to commit to a full interdisciplinary degree from the outset, or declare a specialization in Creative Critical Culture, Performance, or Studio. These options are designed to offer a balance for incoming students between familiar disciplinary arts practice and the interdisciplinary heart of our iArts curriculum. The programs are structured using four types of courses: Perspectives Courses, Project Courses, Investigations Courses, and Modules.

Perspectives Courses are mandatory for all iArts students and have seats open to the university community at large. They foreground contemporary critical theory as it pertains to the history and practice of the arts. Co-designed and team taught by a specialist in the studio arts and a specialist in performance, the courses are structured around specific theories, and use case studies from a range of arts disciplines and cultures to illuminate the ways arts contribute to cultural perceptions and social structures.

Project Courses involve all BFA students, who will arrive in the program with a range of strengths from a selection of traditional arts silos. Working in shared space and through a series of exercises and workshops, students will be given the freedom to deepen their knowledge of familiar disciplines but working side by side with other artists will learn to appreciate the knowledge embodied in and emerging from different arts practices.

Investigations Courses provide insight into a particular aspect of arts practice and its relation to contemporary culture. Their scope is more limited, but research-creation methodologies are the cornerstone of their pedagogy. Many of these courses may teach practice arising from traditional disciplines but will be open to the interdisciplinary influence of the Perspectives and Project courses.

Modules are short one or two unit courses that might teach a specific technical-material practice, or explore a specific topic related to contemporary events, or study a particular idiosyncratic arts practice, or assemble interdisciplinary groups of students and scholars in content-based clusters, bringing their disciplinary knowledge to bear on a shared social or material issue. Modules are an opportunity for students to add even greater variety to their experience in the program, and for students not in iArts to experience arts research in easily digestible units. Since they may be taught by visiting artists and local community artists, modules also increase student exposure to different approaches to creative practice, and to different styles of learning.

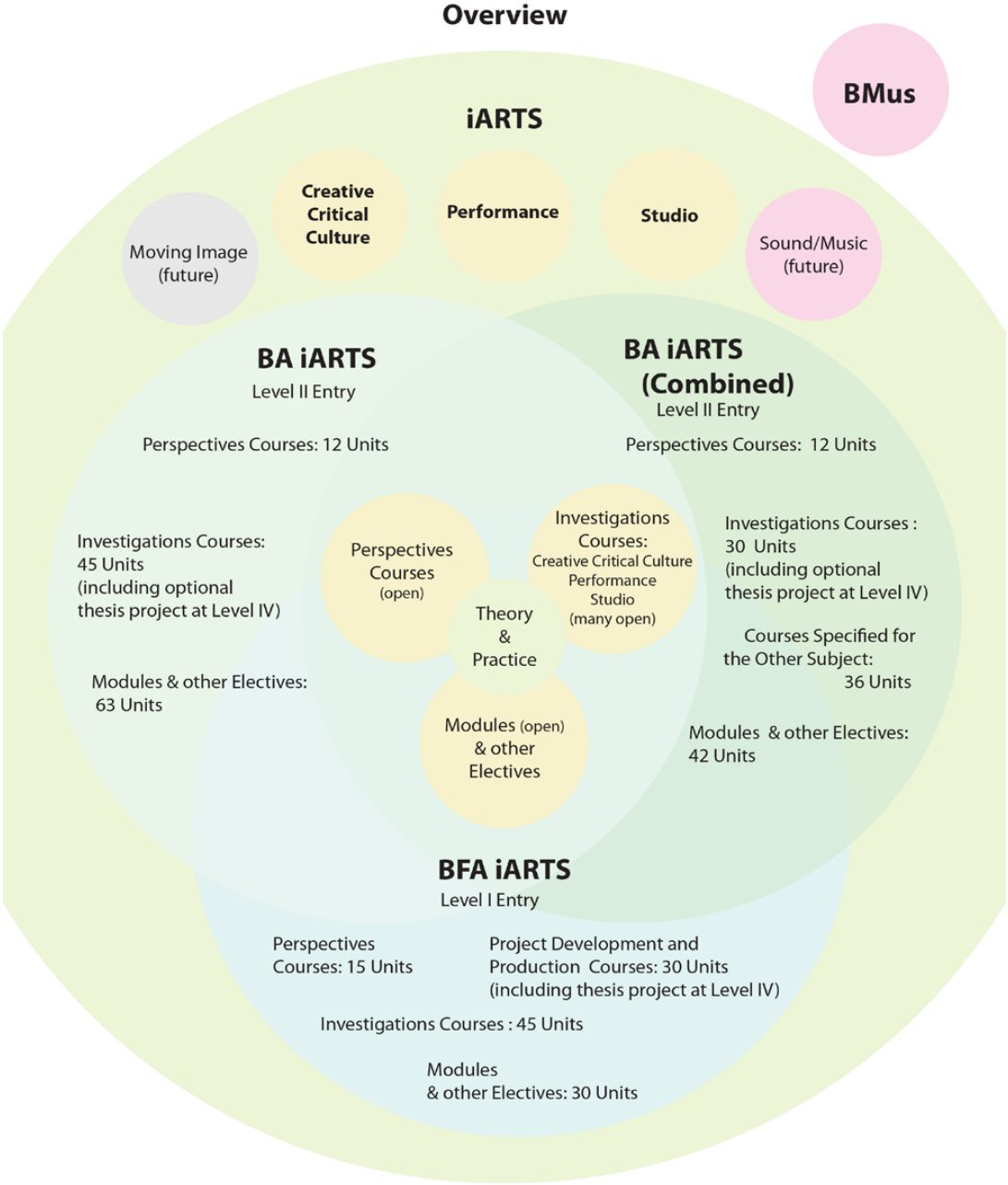
In addition to these program courses, iArts will continue to offer general interest courses to the university at large. Some students in other Faculties who are interested in hands-on experience with arts practice have expressed that they are hesitant to put themselves in competition with dedicated arts students. Using an innovative combination of lecture-demos and lab tutorials, iArts will provide experiential & self-directed arts courses for large numbers of non-iArts students who can complement their learning in other programs and Faculties. Our first-year Investigations courses are also designed on this model to increase accessibility to the arts on campus, to provide a pathway into the BA Honours program for Humanities I students, and to

offer an opportunity for non-iArts students to find their way into upper level iArts courses as pre-requisites allow.

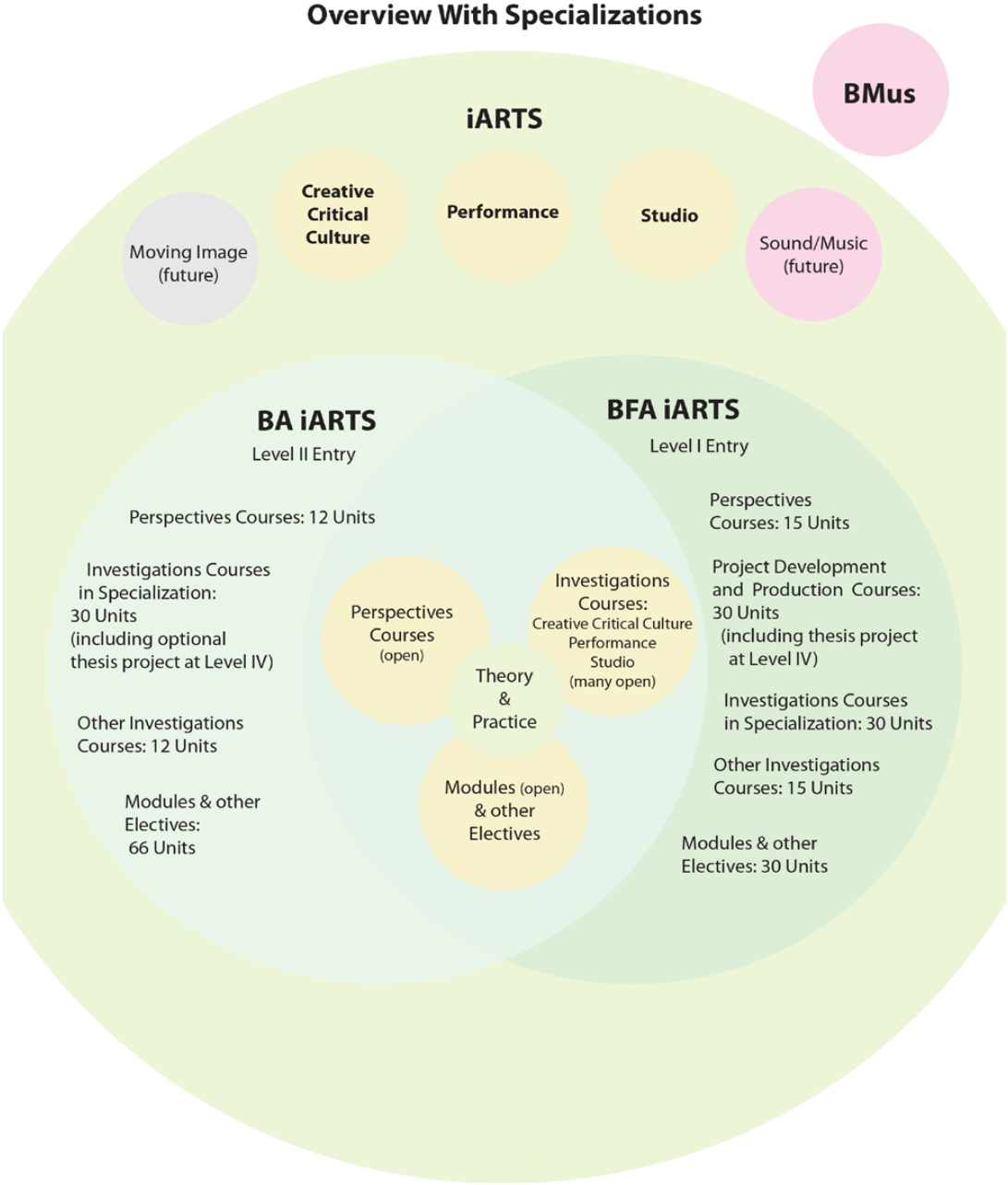
The first of two diagrams below represents the requirements of the iArts BFA, iArts Honours BA, and combined iArts Honours BA. The second diagram illustrates the requirement for students wishing to declare specializations in Studio, Performance and Creative Critical Culture.

[See Appendix 1 for the full set of calendar copy and course descriptions]

Overview


BMus
iARTS
Creative Critical Culture
Performance
Studio
Moving Image (future)
Sound/Music (future)
BA iARTS
Level II Entry
Perspectives Courses: 12 Units
Investigations Courses: 45 Units (including optional thesis project at Level IV)
Modules & other Electives: 63 Units
BA iARTS (Combined)
Level II Entry
Perspectives Courses: 12 Units
Investigations Courses : 30 Units (including optional thesis project at Level IV)
Courses Specified for the Other Subject: 36 Units
Modules & other Electives: 42 Units
Perspectives Courses (open)
Investigations Courses: Creative Critical Culture Performance Studio (many open)
Theory & Practice
Modules (open) & other Electives
BFA iARTS
Level I Entry
Perspectives Courses: 15 Units
Project Development and Production Courses: 30 Units (including thesis project at Level IV)
Investigations Courses : 45 Units
Modules & other Electives: 30 Units

Overview With Specializations



1.2 PROPOSAL PREPARATION AND CONSULTATION PROCESS

Since the fall of 2018, the faculty of the School have been intensely engaged in reconceiving the School's programs, led by the Director of the School and an Executive Council, comprised of an elected representative of each program: Theatre and Film (HonBA THTRFLM), Studio Art (BFA ART direct entry); Music (BMus, direct entry) and Art History (HonBA AH). Apart from the BMus program faculty, who have developed and continue to pursue their own program proposal, the remaining faculty (hereafter the SOTA transformation team) have engaged in an intense series of workshops, outside consultations and ongoing discussions regarding the changing role of the arts in contemporary society and alternative arts models across Ontario specifically, and Canada more generally.

The SOTA transformation team has also been engaged in ongoing discussions and consultations with various existing campus collaborators, such as the Museum of Art, Communications Studies and Multimedia, and members of the Gender Studies and Feminist Research Program, drawing upon McMaster's remarkable innovative programming in the consideration of the design of our curriculum. Conversations about future convergences have begun or are continuing with:

Arts and Science, Jean Wilson, Director
Business/IBH, Emad Mohammad, Director
iSci, Sarah Symons, Director
Life Sciences, Kim Dej, Director Acting AV Provost for 2019/20
Communications Studies & Multimedia, David Ogborn, Andrew Mactavish, Chris Myhr, Christina Baade, Paula Gardner, Christine Quail, Andrea Zeffiro, Sara Bannerman, Robert Hamilton
Centre for Networked Media and Performance (CNMAP), David Ogborn
Linguistics, Magda Stroinska
McMaster Museum of Art, Carol Podedworny, Rhéanne Chartrand and Pamela Edmonds
MacPherson IQAP office, Erin Aspenlieder, Associate Director
Faculty of Humanities, Faculty Office, Dean Pamela Swett, Academic Associate Dean Sean Corner, Financial Office Jeff Chuchman, and staff members Antoinette Somo, Andrea Perco and Phoebe Hu
Faculty of Humanities Student Advising Office, Jackie Osterman and Elizabeth Williams
Patrick Brennan, Operations Manager, Faculty of Humanities Office, LRW Hall Concert Hall & Black Box
Indigenous Studies Program, Chelsea Gabel, Interim Director
McMaster University Library, Vivien Lewis, University Librarian and Anne Pottier, Associate University Librarian
Lewis & Ruth Sherman Centre for Digital Scholarship, Andrea Zeffiro, Academic Director and Jay Brodeur, Administrative Director

External consultations have included:

Dr. Ron Burnett (President Emeritus, Emily Carr University), who has consulted with us on three separate occasions
Dr. Laura Levin (Performance Studies, York University)
Ryan Rice (Chair of Indigenous Visual Culture, OCAD)
Meagan Troop (Sheridan College)

We surveyed the changing visual and performing arts landscape in Canada, the United States and abroad. The survey revealed the degree to which our own sense of renewal is being mirrored in major educational institutions elsewhere. "Negotiating with tradition: Curriculum reform and institutional transition in a conservatoire,"
Celia Duffy https://journals.sagepub.com/doi/full/10.1177/1474022212473527
mirrors our ongoing discussion about the preservation and breaking down of "silos". Other studies focus on the so-called fourth Industrial Revolution and the nature of work in the global future. http://www3.weforum.org/docs/WEF_Future_of_Jobs.pdf.

1.3 CONSISTENCY WITH MCMASTER'S MISSION AND ACADEMIC PLAN

The proposed iArts program adheres to the guiding strategy of President Patrick Deane's 2001 open letter *Forward with Integrity* concerning Student Experience, Research, Community Engagement and Internationalization.

Drawing on the pedagogy of McMaster's celebrated programs iSci, ArtsSci, and HealthSci, iArts is committed to multidisciplinary approaches to solving the social and material problems of our contemporary worlds. Judy Major-Girardin's Designing Paradise project, aimed at addressing lost wetlands on the McMaster campus, incorporates studio and performance artists, earth scientists, biologists, and creative writers, and models the kind of content-based interdisciplinary clusters that will be a feature of our new iArts programs.

The iArts curriculum is designed to allow students to find their own learning pathway. The mandatory Perspectives courses provide them with the critical theory, grounding arts history, and contact with a diverse range of arts practices, that will ready them for personal exploration as artist scholars. If they choose a specialization, then the program still provides ample opportunity to explore other fields of study or areas of arts practice. If they do not, they are free to integrate different disciplines in any way they see fit.

Humanities advisors have reported that Studio Art and Theatre and Film Studies courses are already proving attractive to students in other faculties, including international students on campus, and our new programs will build on this noted strength. Examples presented in our classes will be drawn from artists that represent local and global diversity. Insisting on the importance of visual, embodied, and haptic learning also challenges colonial culture's emphasis on the written word.

Furthermore, the proposed iArts programs are directly aligned with the four major priorities identified by the *Strategic Mandate 2017-2018*: Innovation in Teaching and Learning Excellence; Access and Equity; Research Excellence and Impact; Innovation, Economic Development and Community Engagement.

Innovation in Teaching and Learning Excellence

Different models of course delivery such as modular learning, lab-model arts courses, research-creation collaborations, and collaborative student-led project courses are supported by theoretical research on sustainability, diversity, equity, and social justice in arts practice. These innovations draw upon scholarship of teaching and learning, incorporating peer-to-peer learning, problem-based (or project-based) learning, self-directed learning, and student-faculty partnerships. The programs adopt inventive approaches to the use of space in order to increase access to resource-heavy, arts-practice courses.

The new specialization in Creative Critical Culture (CCC) develops the critical, conceptual, and writing skills necessary to foster productive relationships between artists and public. Students in the CCC specialization will invest more time in history, written theory, and analysis while maintaining engagement in arts practice in other media, producing high quality writing about art. CCC students will also conceive of and develop community projects, work in collaboration with students from other specializations to develop research projects, and engage in curatorial and dramaturgical work, finding new modes of combining artistic production, inquiry, and critique by building bridges between artists and potential publics and developing rich historical/critical contexts for their work.

Access and Equity

The School of the Arts is committed to inclusivity, equity, and accessibility in hiring and recruitment, in curriculum design, and in pedagogical and research practices. iArts will provide spaces that facilitate inclusive and accessible education. We believe that collaborating within diverse groups leads to artistic depth, complexity, and innovation, and that the arts can be a powerful means to address issues of social justice. Commitment to the arts as an important driver of social change is integrated at every level of our curriculum. It manifests in the critical

contexts through which we approach the arts, and in the inclusive, collaborative processes we establish as the foundation of integrated arts-research practice.

Embedded in the program's ambitions and curriculum development is a deep commitment in both theory and practice to the university's priorities around sustainability, global ethics, human cultures and creativity. The direct entry level I BFA program is based in studios that are unique in their commitment to environmentally sustainable practices, while both the BFA and the BA degrees insist on an ongoing conversation around the arts throughout the four years. This is exemplified by the Perspectives courses, required for program students and open to the university. The two level I Perspectives courses are Arts in Society: Constructions of Race and Gender, and Technology and the Environment. The dialogue continues in level II with Arts in the Community and Arts Across Disciplines.

Research Excellence and Impact

Research and community engagement go hand in hand in iArts. The new programs are research-driven and their pedagogy is aligned with the research-creation practices of the faculty in the School. Students learn how artists approach social and material problems by engaging in the cycles of research, creation, and critique by which arts research moves towards deeper complexity in understanding. Current interdisciplinary and community-engaged research projects include

- Judy Major-Girardin's collaboration with campus and community experts on re-envisioning the west campus (*Designing Paradise*)
- Catherine Graham and Christina Sinding's interdisciplinary partnership development project with community advocates and social service organizations (*Transforming Stories, Driving Change https://transformingstories.mcmaster.ca/*)
- Peter Cockett's collaboration with Melinda Gough from English and Cultural Studies *(Engendering the Stage https://engenderingthestage.humanities.mcmaster.ca/about-the-project/*)
- Carmela Laganse and Briana Palmer's community-based Art[4]Change research in collaboration with Centre 3 (Defying Barriers; Reception https://socrates.mcmaster.ca/events/quantopia-by-dj-spooky/).
- Angela Sheng's international collaboration on knowledge transmission and nomadic societies in Central Asia: *Reading Textiles.*

Economic Development and Community Engagement

In consultation with McMaster's Office of Community engagement, the School is committed to developing iArts curricula that sustain strong ties to our local community. Our modular courses

provide an opportunity for community artists to teach at McMaster, exposing our students to a diversity of artistic perspectives. Students will also have the opportunity to collaborate with faculty working in the Hamilton community, and to develop their own research-creation projects in the community under faculty supervision. Students will be encouraged to hold an internship/residency with community organizations, fostering the relationship between iArts and the wider arts community established through local artists, faculty and former students.

1.4 PROGRAM LEARNING OUTCOMES

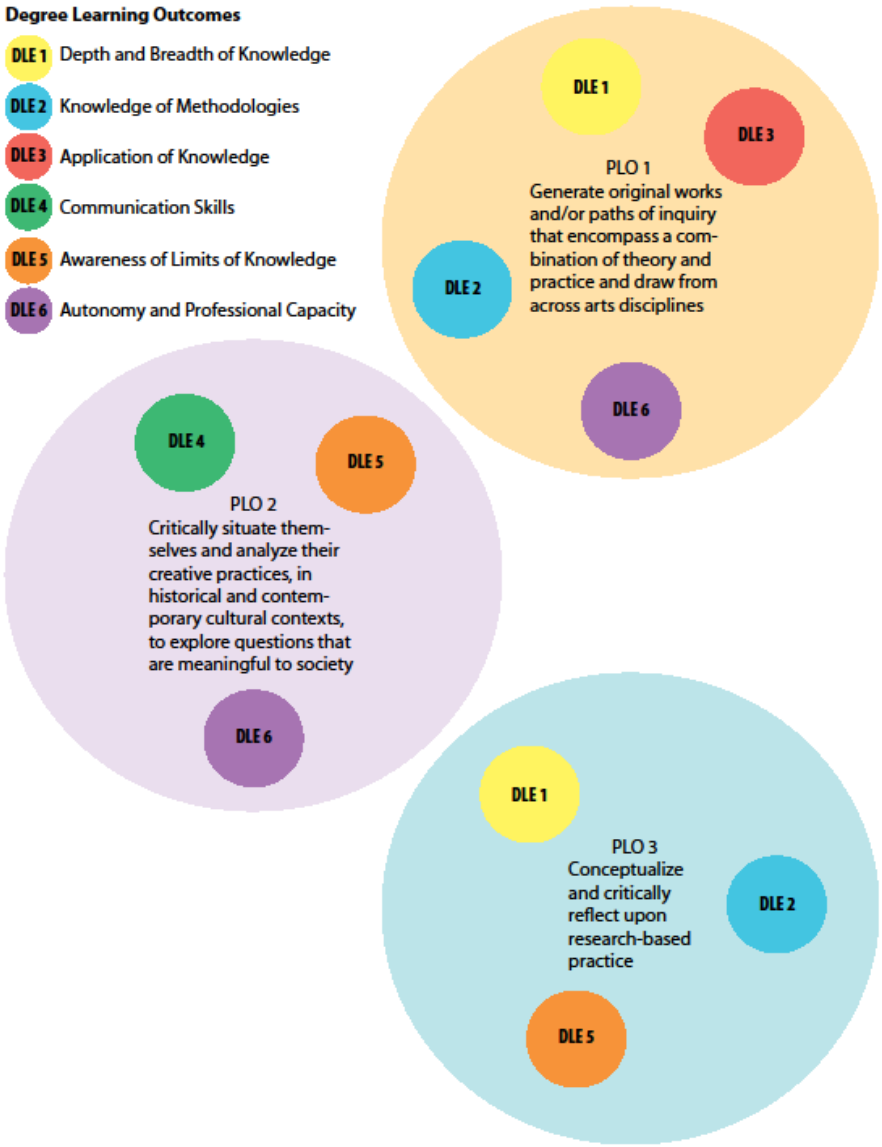
iArts IQAP Program Learning Outcomes

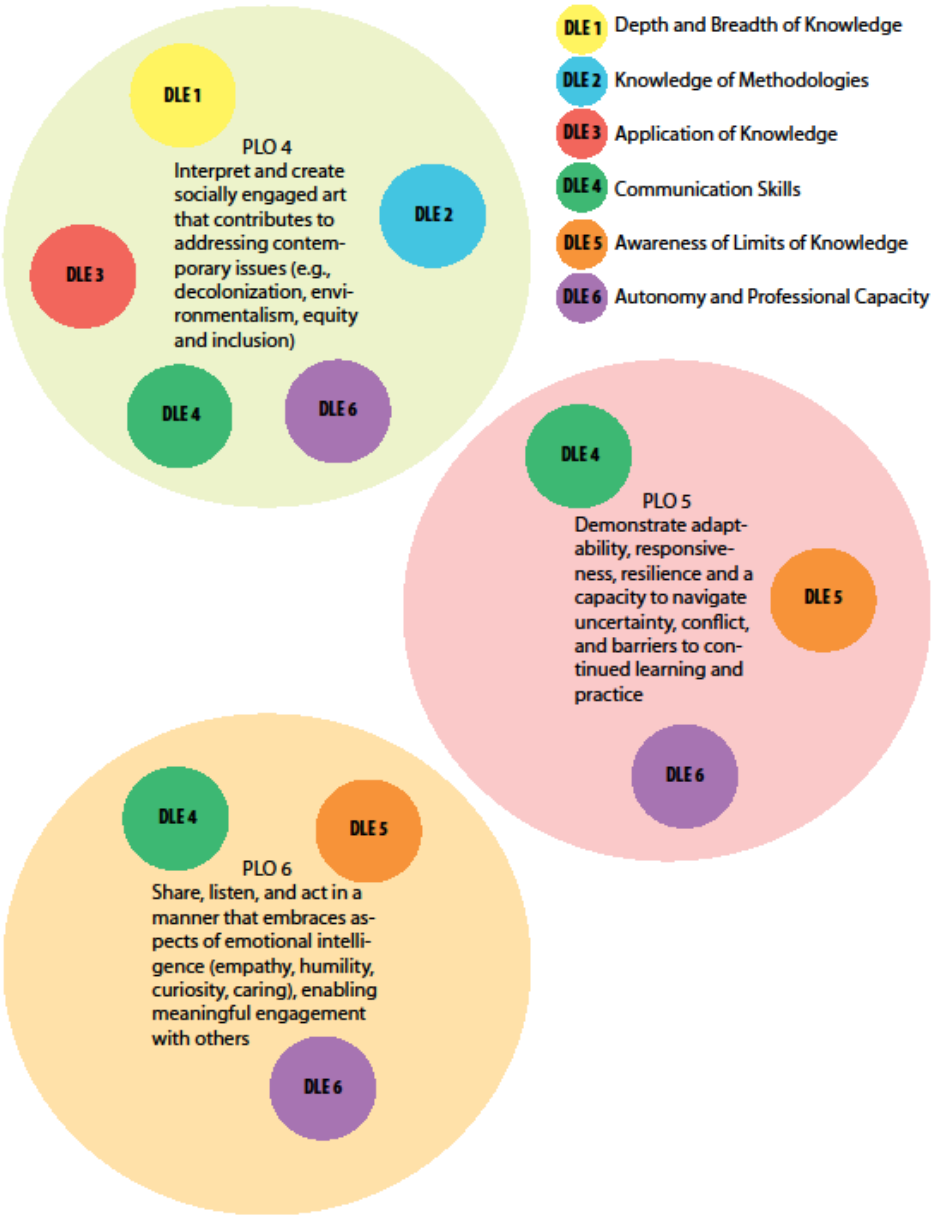
"Cultivating skills and strategies for life-long research supporting creative contributions to society"

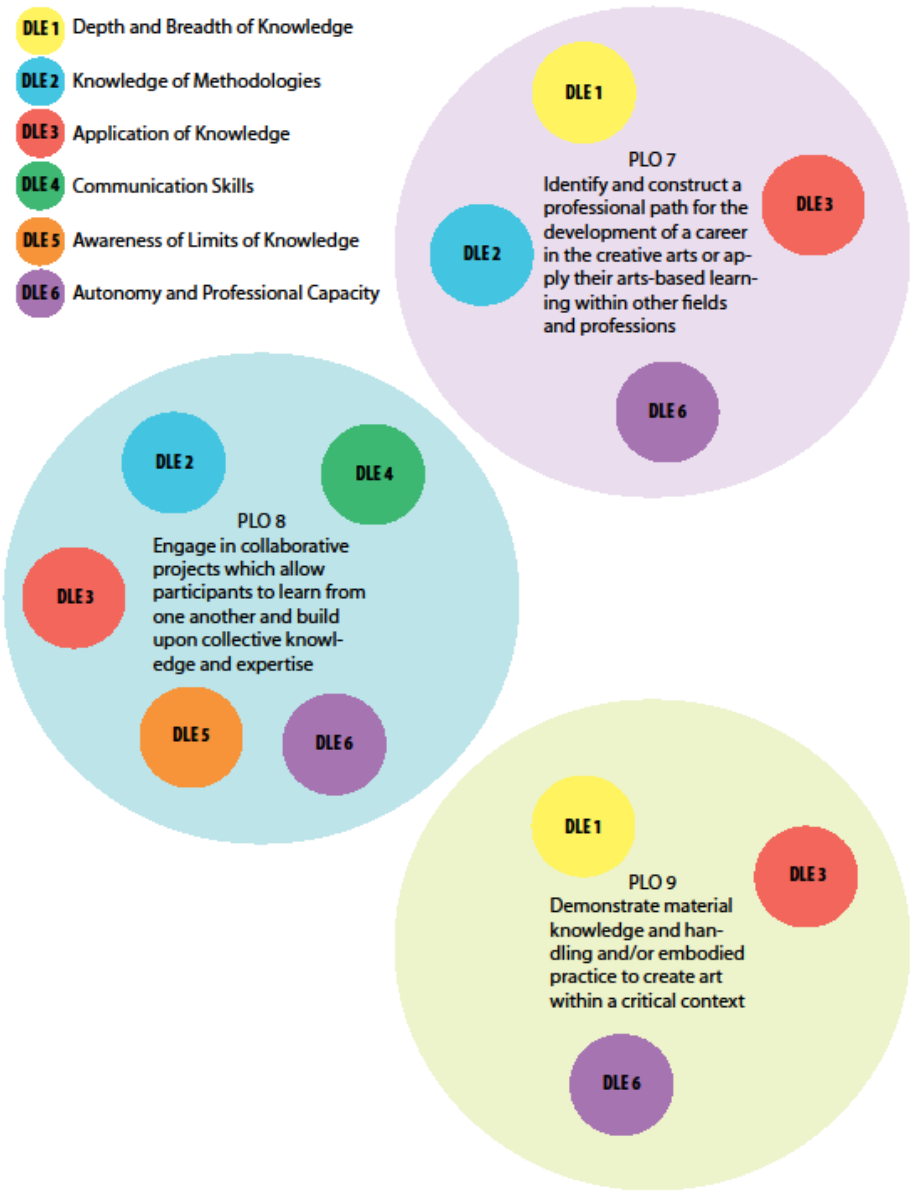
By the end of this program, successful students in the BFA and BA programs will be able to:

1. Generate original works and/or paths of inquiry that encompass a combination of theory and practice and draw from across arts disciplines;
2. Critically situate themselves and analyze their creative practices, in historical and contemporary cultural contexts, to explore questions that are meaningful to society;
3. Conceptualize and critically reflect upon research-based practice;
4. Interpret and create socially engaged art that contributes to addressing contemporary issues (e.g., decolonization, environmentalism, equity and inclusion);
5. Demonstrate adaptability, responsiveness, resilience and a capacity to navigate uncertainty, conflict, and barriers to continued learning and practice;
6. Share, listen, and act in a manner that embraces aspects of emotional intelligence (empathy, humility, curiosity, caring), enabling meaningful engagement with others;
7. Identify and construct a professional path for the development of a career in the creative arts or apply their arts-based learning within other fields and professions;
8. Engage in collaborative projects which allow participants to learn from one another and build upon collective knowledge and expertise;
9. Demonstrate material knowledge and handling and/or embodied practice to create art within a critical context.

1.5 CONSISTENCY WITH DEGREE LEVEL EXPECTATIONS




DLE 1 Depth and Breadth of Knowledge
DLE 2 Knowledge of Methodologies
DLE 3 Application of Knowledge
DLE 4 Communication Skills
DLE 5 Awareness of Limits of Knowledge
DLE 6 Autonomy and Professional Capacity
PLO 4
Interpret and create socially engaged art that contributes to addressing contemporary issues (e.g., decolonization, environmentalism, equity and inclusion)
DLE 1
DLE 2
DLE 3
DLE 4
DLE 6
PLO 5
Demonstrate adaptability, responsiveness, resilience and a capacity to navigate uncertainty, conflict, and barriers to continued learning and practice
DLE 4
DLE 5
DLE 6
PLO 6
Share, listen, and act in a manner that embraces aspects of emotional intelligence (empathy, humility, curiosity, caring), enabling meaningful engagement with others
DLE 4
DLE 5
DLE 6


DLE 1 Depth and Breadth of Knowledge
DLE 2 Knowledge of Methodologies
DLE 3 Application of Knowledge
DLE 4 Communication Skills
DLE 5 Awareness of Limits of Knowledge
DLE 6 Autonomy and Professional Capacity
DLE 1
PLO 7
Identify and construct a professional path for the development of a career in the creative arts or apply their arts-based learning within other fields and professions
DLE 3
DLE 2
DLE 6
DLE 2
DLE 4
PLO 8
Engage in collaborative projects which allow participants to learn from one another and build upon collective knowledge and expertise
DLE 3
DLE 5
DLE 6
DLE 1
PLO 9
Demonstrate material knowledge and handling and/or embodied practice to create art within a critical context
DLE 3
DLE 6

1.6 DEMAND FOR PROGRAM

1.6.1 *SOCIETAL/LABOUR MARKET NEED*

As then Provost David Farrar noted in his 2018 Daily News statement, "technological advances, especially in digital fields, and the emergence of new forms of performance and display, have considerably blurred the boundaries between individual art forms. Video art, performance art, installations, projections, soundscape design, conceptual art and many more art forms challenge more traditional approaches; so has the rise of virtual reality, internet art/drama, smart-phone filmmaking, interactive arts, among others. Health professionals and corporate leaders have come to realize that the arts are essential to an individual's wellbeing and performance in life and career. These developments have challenged more classical modes of training and analysis of the arts." https://dailynews.mcmaster.ca/worthmentioning/keeping-the-arts-strong-at-mcmaster/

As such, the social and economic demand for arts graduates has also changed, requiring cultural and art workers to be multi-skilled critical thinkers employing a wide range of abilities and literacies in interdisciplinary pursuits. The arts economy of today demands that artists be both self-driven, independent operators, and committed, creative collaborators. They must be flexible and adaptable.

The iArts programs will produce critical thinkers and makers able to contribute to social discourse in a variety of modalities. They will bring new perspectives to current social structures, informed by the past, but always looking forward to ways of imagining, organizing, and structuring future social interaction. The ability to operate between and beyond traditional disciplinary boundaries will align our graduates with the cutting edge of contemporary arts practice. Expertise developed in a multiplicity of disciplines will enable them to pursue a wider range of employment opportunities in the arts.

In a 2018 study undertaken for the Higher Education Quality Council of Ontario (*Minding the Gap? Ontario Postsecondary Students' Perceptions on the State of Their Skills*), students testify to a disconnect between their studies and future work.
http://www.heqco.ca/SiteCollectionDocuments/Formatted_%20Student%20Skills%20Survey_FINAL.pdf

In October 2019, a search of the Ontario job bank of the Government of Canada under "Integrated Arts" prompted a return of 1,314 entries. Among them, graphic arts designers, art instructors, technicians, art gallery directors, teachers at all secondary and post-secondary

institutions, production coordinators for film and theater, 2D and 3D animation artists, library, museum and gallery directors. More surprising might be the postings for personal trainers, industrial and manufacturing engineers, therapists and managers, retail sales. These listings suggest that those who have interdisciplinary applications may position them for careers in other fields with high growth, such as Health, Education, and Business (Source: https://www.jobbank.gc.ca/home)

This selection of current studies supports the iArts programs' attention to issues of access, diversity and social justice that prepare our students to work effectively in a variety of community settings and aligns our graduates' work with the current priorities of arts funding bodies and institutions. Students will be able to apply their arts-based research techniques to collaborations within a wide range of industries and social organizations, including arts institutions, administrative positions, educational settings, community development and social planning projects, therapeutic settings, and a variety of other industries. The emphasis on arts practice in multiple work-related studio and laboratory settings will enable BFA and BA graduates to maneuver the job market with considerable flexibility. Graduates from the BFA and BA Hons. programs will also be well positioned to pursue post-graduate studies, either through MFA programs or MA programs in the arts and related fields.

1.6.2 *EVIDENCE OF STUDENT DEMAND*

The structure of the new iArts programs addresses gaps already identified in current programming, permitting interdisciplinary courses of study, access to a wider range of courses (both for iArts students and students from other faculties), collaborative programming with other faculties, and defined relationships and opportunities with the GTHA arts community.

In preparation for the construction and discussion of a new set of curriculum, the SOTA transformation team initiated a number of student-focused surveys. The first was in 2018 for 3rd and 4th year students in all four SOTA programs, followed by a focused discussion with 40-50 3rd and 4th year BFA students. (see Appendix 2 for both). In September-October 2019, an online survey of level I students prompted 280 responses from three large level I classes in Multimedia (MM1A03), Art (Art1UI3) and Theatre and Film (THTR/FLM 1TU3) Results from these surveys are inconclusive.

The 2018 survey of SOTA students indicated that the majority were not craving access to SOTA courses outside their degree programs. This is understandable, as the programs are currently siloed and students have been encouraged to specialize in their chosen areas of study. The

survey did not include any description of an alternative model, nor explain the potentials of interdisciplinary exploration. By contrast, Studio Art students participating in the 2018 focus group indicated a strong desire for SOTA courses outside their degree program.

The 2019 online survey of level I students produced interesting results. 280 students responded, of which 252 completed the entire survey. 35.71% indicated that if the iArts program was offered at McMaster, they would not apply for enrollment, 39.68% indicated that they were unsure, while 24.6% indicated that they would apply. While these numbers are not persuasive, the structure of the survey was such that students were confused about the speculative nature of the question. For example, in the comments, many indicated that they would not apply because they are already enrolled in another program. In addition, the option to specialize was not effectively conveyed, and many students mistakenly thought they would be forced to abandon their chosen discipline in order to participate in the iArts program.

By contrast, student comments in the 2019 online survey provide excellent information and feedback that will help us design effective focus groups moving forward. Of the 24.6% students who indicated that they would enroll in iARTS, the reasons they gave were particularly instructive. For example, one student expressed desire for interdisciplinary training “in an age of growing automation, in which market demand for creative and critical thinking will grow,” while another indicated, “I have always felt that the creative industries are something I fit better in and not many top universities such as McMaster focus on that.” Another student indicated, “I love art and think creatively and lots of people don't see this to be as academic as math or science [...] Different ways of being smart are important.”

When asked what courses they would like to see in an iArts program, students indicated desire for courses that “explore the intersections between art and activism,” “provide an intercultural and historical context for arts making in Canada/Turtle Island” and an “integrative approach with modern life, providing information as to how the course relates to the world at present.” Many students asked for courses examining the impacts of technology, and many indicated a strong interest in hands-on learning, with a desire for “Applied learning opportunities, that allow you to be ready for the workplace.”

The iArts program is truly new, and our focus has been on articulating the structure of the program to colleagues within the university, rather than to students. As we move forward, we are now able to more clearly communicate what the program has to offer in language that students will understand. We believe that focus-groups are more effective than surveys, because they allow for in-person explanations, and the opportunity to answer students’

questions as they try to envision interdisciplinary opportunities that do not currently exist. Moving forward, we intend to run focus groups comprised of students, alumni and local arts organizations from January-March 2020 to explore further evidence of student interests.

1.6.3 *JUSTIFIABLE DUPLICATION*

Our research indicates that undergraduate programs like iArts are still relatively rare. Three aspects of iArts combine to make it a unique and innovative program: 1) our focus on the arts and social justice, equity, diversity and inclusion; 2) our focus on interdisciplinary practice; and 3) the fact that interdisciplinarity is embraced within core courses as well as within the program as a whole.

There are universities in the region with excellent arts programs offering BA and BFA programs, such as: The Marilyn I. Walker School of Fine and Performing Arts at Brock University; the School of Fine Art and Music at the University of Guelph; Western; the University of Toronto; OCADU; York University, and Waterloo, but such programs do not foreground an explicit focus on interdisciplinarity or social justice. While it is common that Studio Art and Art History are combined in Visual Arts programs, iArts is unique in combining Critical Creative Culture with both Studio Art and the Performing Arts. As we move forward with the program we hope to also incorporate music, sound and moving image within the sphere of iArts interdisciplinary practice.

The University of Toronto, Scarborough offers programs in Arts Management and Arts and Media Management, both of which are interdisciplinary. iArts meanwhile has a strong focus on social justice, collaboration and creative practice, but is centred on artistic creation with interdisciplinary practice woven into the core courses.

The Ontario College of Art and Design University (OCADU) offers a minor in Art and Social change. In iArts however, questions of social justice and cultural context are woven into almost every course, and embedded in interdisciplinary practice.

In summary, we are confident that iArts provides a unique set of learning opportunities that will serve students in Ontario, with the potential to also attract students nationally and internationally.

1.7 DEGREE NOMENCLATURE

iArts offers three degrees:

- Honours in Integrated Arts (B.A.)
- Combined Honours in Integrated Arts and Another Subject (B.A.)
- Honours in Integrated Arts (B.F.A.)

In addition, students pursuing a B.A. or a B.F.A. program may opt to specialize within a particular iArts discipline:

Honours in Integrated Arts (B.A.) with a Specialization in Creative Critical Culture
Honours in Integrated Arts (B.A.) with a Specialization in Performance
Honours in Integrated Arts (B.A.) with a Specialization in Studio
Honours in Integrated Arts (B.F.A.) with a Specialization in Creative Critical Culture
Honours in Integrated Arts (B.F.A.) with a Specialization in Performance
Honours in Integrated Arts (B.F.A.) with a Specialization in Studio

The B.A. designation is appropriate to a four-year, Level II entry program of study designed to provide students with transferrable skills, competence in research methodologies and skills in self-directed inquiry, as well as creative thinking, critical thinking, problem solving, professional skills and a breadth and depth of knowledge in the creative arts.

The B.F.A. designation is appropriate to a four-year, Level I entry program of study designed to provide students with the professional skills and critical methodologies of history and context. B.F.A. students complete a 12-unit thesis capstone project in their final year, preparing them for a self-directed career in the creative arts, or entry into an M.F.A program.

The program title, Integrated Arts, reflects the fact that our program pathways reinforce interdisciplinary study, encourage collaboration and the integration of various practices and critical approaches within the creative arts. Even students who opt to specialize will be taking courses outside their area of specialization. The Perspectives courses, which are mandatory for all iArts students at every level, have an interdisciplinary mandate at their core.

2 ADMISSION & ENROLMENT

2.1 ADMISSION REQUIREMENTS

Our aim is make iArts accessible to as many different kinds of student as possible. Observation of students in our current SOTA programs indicates that they often more successfully build and express their understandings of the world through non-verbal means. Following this observation, we do not want to create barriers to admission for future students by over-emphasizing grades from courses that do not allow them to complete assignments using their preferred modes of communication. We do, however, wish students to express some level of aptitude within the iArts and so we are asking for a minimum grade of C in one of the Level I investigations courses, most of which have a more hands-on focus than the perspectives

courses. In order to facilitate student success in the iArts programs we are asking for a *Grade Point Average of at least 5.0 in Level I.*

Admission Requirements: Honours Integrated Arts (B.A.)

Completion of any Level 1 program and a Grade Point Average of at least 5.0 including successful completion of either IARTS 1PA3 or IARTS 1PB3, *and a minimum grade of C in one course from the following list*: IARTS 1HA3, IARTS 1SW3, IARTS 1CR3, IARTS 1TO3, IARTS 1BD3, IARTS 1SS3

Admission Requirements: Honours in Integrated Arts (B.A.) with a Specialization in Creative Critical Culture

Completion of any Level 1 program and a Grade Point Average of at least 5.0 including successful completion of either IARTS 1PA3 or IARTS 1PB3, *and a minimum grade of C in one course from the following list*: IARTS 1HA3, IARTS 1SW3.

Admission Requirements: Honours in Integrated Arts(B.A.) with a Specialization in Performance

Completion of any Level 1 program and a Grade Point Average of at least 5.0 including successful completion of either IARTS 1PA3 or IARTS 1PB3, *and a minimum grade of C in one course from the following list*: IARTS 1CR3, IARTS 1TO3.

Admission Requirements: Honours in Integrated Arts(B.A.) with a Specialization in Studio

Completion of any Level 1 program and a Grade Point Average of at least 5.0 including successful completion of either IARTS 1PA3 or IARTS 1PB3, *and a minimum grade of C in one course from the following list*: IARTS 1BD3, IARTS 1SS3.

Admission Requirements: Combined Honours in Integrated Arts and Another Subject (B.A.)

Completion of any Level 1 program and a Grade Point Average of at least 5.0 including successful completion of either IARTS 1PA3 or IARTS 1PB3, *and a minimum grade of C in one course from the following list*: IARTS 1HA3, IARTS 1SW3, IARTS 1CR3, IARTS 1TO3, IARTS 1BD3, IARTS 1SS3.

Admission Requirements: Honours in Integrated Arts (B.F.A.)
See section 2.3 below.

2.2 ENROLMENT PLANNING AND ALLOCATIONS

A financial analysis is currently underway.

Academic Year	Cohort Year 1	Cohort Year 2	Cohort Year 3	Cohort Year 4	Cohort Year 5	Cohort Year 6	Cohort Year 7	Total Enrolment	Maturity
2021/22	40							40	41
2022/23	40	51						91	49
2023/24	40	61	46					147	49
2024/25	40	61	55	41				197	49
2025/26	40	61	55	49				205	49

2.3 ALTERNATIVE REQUIREMENTS

For the B.F.A. program (Level I entry), we are asking students to demonstrate an aptitude for creative practice. Because this is an integrated arts program, we are open to many different kinds of creative practice. Students will present evidence of their creative work during one-on-one interviews, at which we will assess their dedication to creative practice, their self-motivation and their skills in applying creative-thinking to creative output — foundational skills which are transferrable across media and across discipline in the arts.

Admission Requirements: Honours in Integrated Arts (B.F.A.)

> Students wishing to enter this program must complete an entry interview tailored to the applicant's interests, and provide evidence of their artistic practice, which may include: an art portfolio, audition, performance pieces, compositions, creative writing, spoken word poetry, videos, or any other evidence of their creative work. *Enrolment in this program is limited.* Selection is based on a consideration of academic achievement, assessment of the evidence their artistic practice provided, and a successful interview. In instances of long-distance application, an electronic submission will be accepted

3 STRUCTURE

3.1 ADMINISTRATIVE, GOVERNANCE AND COMMUNICATION

From the current School of the Arts, Art History, Music and Theatre & Film Studies Programs Administrative Structure revised 2016 (see Appendix 3 for full document).

"The primary function of the Administrative Structure that governs the School is to support and foster a collegial setting for the areas of Art, Art History, Music and Theatre & Film Studies to co-exist in an environment where each is encouraged to recognize and build on its strengths and to realize new potential through the combined creative expertise of the disciplines. Through governance committed to equity and consultative, transparent processes, the School strives for excellence, innovation and distinction."

3.2 STRUCTURE AND REGULATION

The School is run by a Director, who functions largely as a Chair of a department overseeing four separate programs. The director convenes meetings of the School at least once a term. Each program selects a representative who serves on an Executive Council which meets once or twice a term to discuss such common matters as the distribution of discretionary funds.

Each year, one member of the fulltime faculty (teaching and tenure-track) is elected to assist largely with cpm, appointments and tenure and promotion when appropriate. For further details, see Appendix 3. *It is assumed that a new director and a new curriculum would require at the very least a review of the SOTA governance.*

4 CURRICULUM AND TEACHING

4.1 PROGRAM CONTENT

Increasingly, arts workers and arts practitioners are abandoning traditional attachments to specific media or genres, instead drawing on multiple skill sets and conceptual frameworks relevant to their projects on a case-by-case basis. In 1999, art critic Rosalind Krauss identified this shift as a "post-medium condition." At the same time, arts institutions are reconfiguring their mandates embarking on strategic plans to decolonize, resulting in practices of repatriation, shifts in programming, governance and community outreach with equity and inclusion as top priorities.

With a focus on research-creation and interdisciplinary practice, the iArts program prepares students to operate within the post-medium environment of the 21st century. Students will be exposed to a wide range of practices and research resources and they will be given the skills in independent research and self-directed learning required for participation in contemporary art discourse. iArts explicitly values diversity in the classroom; diversity among faculty and diversity among students. We recognize and work to dismantle the systemic barriers that can prevent some students from fully expressing themselves in an academic environment. As an ongoing element of contemporary research-creation, students in iArts will be encouraged to explore their own cultural backgrounds and lived experiences, and will be provided with skills for self-expression and reciprocal communication across cultural differences. These include practical methods for communicating across language barriers to ensure that international students are participating fully, as well as providing projects, research assignments and class discussions about the ways that the arts both inform and are impacted by cultural difference. With a focus on social justice, community engagement and collaborative practice, iArts curriculum reflects material and theoretical concerns currently taken in arts discourse and arts institutions. By

decentering the Western canon and addressing colonialism through a critical lens, iArts courses will provide students with the historical frameworks and access to the contemporary debates and relevant research tools needed to make effective contributions in the arts today.

4.2 PROGRAM INNOVATION

The iArts program is innovative in its focus on research-creation. The Social Sciences and Humanities Research Council (SSHRC) defines research-creation as follows,

"An approach to research that combines creative and academic research practices, and supports the development of knowledge and innovation through artistic expression, scholarly investigation, and experimentation. The creation process is situated within the research activity and produces critically informed work in a variety of media (art forms)." http://www.sshrc-crsh.gc.ca/funding-financement/programs-programmes/definitions-eng.aspx#a22

In iArts we recognize that research can also be situated within the creation process. For this reason, most iArts courses include hands-on creative practice. Even the theory-based courses in Creative and Critical Culture recognize that all students in the program are involved in creative production, and so the theory and research are grounded in the study of material objects and experiential practices. This holistic approach allows students to explore the concepts that arise when working with materials and creating performances in a critical context, while at the same bringing that hands-on knowledge to bear in their theoretical research and analysis. At McMaster, the Multimedia program also has a research-creation focus. We currently have some courses that are shared between the two programs, and as iArts develops we hope to work closely with Multimedia faculty to find even more ways that our students can come together.

The unique learning opportunities of research-creation are enhanced by integrating the arts. In iArts, students are not siloed into disciplines and may move freely between various media and arts practices. Even those students who choose to specialize in Creative Critical Culture, Performance or Studio are encouraged to take courses outside their chosen field, and are required to take the interdisciplinary Perspectives courses that bring everyone in iArts together, providing exposure to the full range of practices and critical concepts arising in the arts today. We have been inspired by the interdisciplinarity of the iSci program and the Arts and Sciences program at McMaster. Many iArts courses, including the interdisciplinary Perspectives courses, will be open to students across campus allowing for cross-pollination across a wide range of disciplines.

Because of the hands-on nature of iArts courses and our commitment to community engagement and professional practice, students will gain experience in presenting exhibitions, installations, performances and critical writing in public contexts.

The aim of iArts is to be as open and accessible as possible, fostering success for students of all abilities. McMaster's Equity, Diversity and Inclusion (EDI) Strategy has informed the design of the iArts program from the bottom-up. Our modes of delivery are so diverse that course material will be broadly accessible to a range of learning styles. Because questions of identity, ability, gender, culture, class and religion are key concerns in the theory and practice of the arts, we explicitly welcome diversity and encourage open and supportive discussion of difference on an ongoing basis. Students registered with Student Accessibility Services will be individually accommodated to meet their requirements. The Fitzhenry Studios have even floors, accessible washrooms, entrances and an elevator. The washrooms have gender-neutral signage. Please see section 4.5 below for more information on accessibility.

4.3 MODE(S) OF DELIVERY

iArts combines many diverse modes of delivery at all levels including skills-based demonstrations and supervised in-class exercises, intensive peer and faculty feedback on projects and performances, lectures, readings, field trips, site visits, community engagement and communal learning in our active making-spaces. Based on the fundamental premise that iArts students will learn through doing, all assignments — including written assignments — are themselves are considered modes of delivery as well as methods of assessment. Perspectives courses at all levels combine hands-on learning with lectures, readings and written assignments. Some of the Investigations courses are lecture-based and some are creation-based.

Demonstrations and In-class exercises

Specific studio skills and performance-based techniques are taught through a combination of demonstrations and supervised, hands-on, in-class assignments. During class-time, students will receive both group instruction and individualized attention. Our faculty will maintain office hours and frequently meet with students outside of class to provide further mentorship and training as needed. Instructional Assistants are available during class time and are also available to students by appointment.

Studio Critiques and Faculty Feedback

At all levels, students in creation-based courses present their work for feedback and group discussion. The pedagogical structure of studio critique is central to the art courses, while creation-based performance courses involve concentrated feedback from faculty and

community experts. While faculty and peer feedback function as methods of assessment (see section 4.1 Methods of Assessment), they are also a key modes of delivery. Presenters learn professional methods of performance and display. They also learn to articulate their ideas publicly and critically situate their art practices within cultural and historic contexts. They develop professionalism through receiving and processing feedback from their peers and faculty. All participants learn to critically assess projects in the arts, and to publicly articulate their responses within a broader cultural context. Our student body is diverse, and the critique structure facilitates visual and verbal communication skills across social boundaries such as gender, culture, and religion. The faculty participate actively, helping students to process feedback by broadening and extending the discussion, while indicating further areas of improvement and research.

Lectures, Readings, Presentations, Discussion

Our students will learn effectively by integrating theory and practice to develop knowledge that applies within and extends beyond the discipline. Theory is delivered and reinforced through a combination of formal lectures, assigned readings, student research presentations, structured class discussions, and informal conversations that emerge as students work together in our communal spaces. Lectures and reading lists are designed around the principle that history will become relevant when understood through the lens of contemporary issues. We aim to address students where they are currently situated, providing historical and critical cultural context for key issues arising in the arts today.

Field Trips, Site Visits and Community Engagement

Many of our courses will incorporate field trips and site visits. Pedagogically, these excursions break down into two categories. First, students are given access points to the contemporary arts scene through visits to local galleries and performances. Second, students are taught how to conduct field research, creating artworks and performances on-site in a range of diverse locations and environments. Off-campus partnerships and associations with public institutions and individual artists/collectives within Hamilton's creative community enhance pedagogical experience, broaden current contemporary discourse, establish professional connections, as well as demonstrate and practice community engagement.

Communal Learning

We foster a collegial atmosphere in our classrooms and work-spaces and encourage peer-to-peer learning in addition to faculty tutelage. While students receive a great deal of individual attention from faculty and instructional assistants, they also learn by working alongside one another, both during class and outside of class-time. Some assignments are group projects and

many are individual, but both modes of learning and practice take place in a collaborative context of shared inquiry.

Space and Facilities as Methods of Delivery

Because the program develops and facilitates integrated conceptual and material practices, our active creation spaces are an integral part of iArts pedagogy. Our pedagogical practices include ongoing, instruction on the safe, professional use and responsible maintenance of all our spaces and facilities, providing students with a range of skills applicable to professional theatre, gallery and studio settings. For more information on our spaces and facilities see section 6.1.1 below.

4.4 EXPERIENTIAL LEARNING

iArts-based learning is fundamentally experiential. At all levels, students will be physically engaged in creating, devising and presenting arts-based projects. Students also gain professional experience by staging performances and mounting exhibitions for public audiences. Performances take place in Robinson Memorial Theatre and the Black Box theatre, while the Fitzhenry studios contain two exhibition spaces, the Atrium and the New Space (TSH 114). In addition, ongoing partnerships with Hamilton Artists Inc. and the McMaster Museum of Art provide opportunities for public exhibition. Hamilton Artists Inc. currently partners with the studio art program to provide free memberships and volunteer opportunities for our students, and they jury an annual art exhibition, Ignition, for our fourth year cohort. Our faculty encourage, facilitate and supervise students in Applied Humanities courses to conduct work-placements and internships in the community

4.5 ACCESSIBILITY

As noted above, McMaster's Equity, Diversity and Inclusion (EDI) Strategy is central to the iArts structure and curriculum. We are particularly aligned with the EDI Strategy's guiding principles of Cultural Relevance, Community Ownership and Collective Responsibility. Course content that decentres the Western canon, addresses colonialism through a critical lens and focuses on social justice will be relevant to Indigenous students and students from equity-seeking groups. Methods of delivery including interdisciplinary collaboration and class discussion are designed with the specific intent of ensuring that all voices are heard, while providing students with practical strategies for community engagement and collective responsibility for transparent and effective communication. iArts acknowledges the systemic barriers to education and the arts that many people face because of society's hegemonic elision and suppression of many identities of race, ethnicity, abilities, disabilities, language, age and gender. We recognize that lived experience of these barriers provides expertise and knowledge that we welcome in the classroom. With our focus on student-directed learning and peer-peer knowledge networks,

iArts recognizes that increased diversity contributes to a more robust and generative learning environment.

iArts supports the principle of inclusive design, aspiring towards a shift in our institutional culture such that accessibility becomes integrated and automatic for all participants, rather than requiring special accommodations for some. In May of 2019, iArts faculty Carmela Laganse and Briana Palmer worked in collaboration with McMaster researchers and community experts to coordinate the Defying Barriers Workshop examining how aging and disability impact engagement with the arts. Findings from this workshop include short term and long term future enhancements that we aim to implement in the iArts classrooms, studios and performance spaces. Short term changes that would be relatively easy to implement include: a quiet room, accessible doors, even floors and/or visible markings to indicate changes in flooring levels throughout all iArts facilities, community engagement with adults living with disabilities, clearly detailing accessibility resources in our recruitment brochures and pamphlets. In the long term we hope to implement a fully inclusive design of all studio space, performance space and classroom space, creating a unique and innovative, fully accessible arts facility.

4.6 RESEARCH REQUIREMENTS (IF APPLICABLE)

Project courses include content-cluster research. The iArts B.F.A. program contains a mandatory 12-unit Project Capstone Thesis in Level IV. In this advanced research-creation course, students will research, manage, create and produce a major arts-based thesis project of their own devising, either alone or in collaboration with other students.

Students in the BA and Combined BA programs may opt to conduct a 6-unit Thesis project in which they will create and produce an arts-based project of their own devising, either alone or in collaboration with other students. These capstones build on collective learning and lab experiences and aim at the construction of independent and shared research that comes together in a final research project that could involve collaborators from all over the campus and the community.

5 ASSESSMENT OF LEARNING

5.1 METHODS FOR ASSESSING STUDENTS

Our methods are directly linked to the PLOs and the DLEs we have set out in 1.4 and 1.5, and are as varied as our modes of delivery, providing multiple avenues for different types of learners to effectively demonstrate their progress and achievements. We apply a multi-faceted approach to assessment, providing objective, concrete, and constructive feedback on student

work. The program emphasizes autonomy, a synthesis of theory and practice, collaboration and collective, interdisciplinary learning. Hence, assessment criteria and approaches are designed with flexibility, responding effectively to a wide range of creative outcomes. Consistent with the iArts emphasis on student-centered learning, the development of communication skills, and conceptual/critical engagement, we integrate peer feedback as well as peer- and self-assessment along with faculty assessments.

Multiple Choice, Short Answer tests and exam questions are used to evaluate knowledge of basic critical concepts and key themes. Essays and research papers assess students' ability to engage in critical, self-reflexive thinking; to situate their research and practice within a larger critical context; and to develop persuasive arguments.

Skills in collaboration and effective communication are assessed through peer-evaluation, as well as faculty assessment of individuals' contributions to group work and class discussion.

Skills in collective decision-making processes will be taught and evaluated through faculty observation of group dynamics as well as peer and self-assessment following collectively established rubrics.

Creation-based projects are presented in class on an ongoing basis, and are assessed through facilitated group discussion and critique as well as faculty assessment of technical proficiency; innovation and problem solving; conceptual rigour; as well as students' ability to articulate concept and critical context.

Skills in independent research-creation methodologies are assessed through research notes, sketchbooks and journals; project proposals; and other process-based projects and assignments.

Professional practices are assessed through assignments based on real-world objectives such as documenting creative work; creating project proposals; and writing grant applications.

Professional practices are also assessed through the public presentation of creation-based projects, giving student the opportunity to demonstrate skills in project management and professionalism in all aspects of presentation and/or display.

5.2 CURRICULUM MAP (APPENDIX 4)

5.3 DEMONSTRATING STUDENT ACHIEVEMENT

As our curriculum map indicates, core features of student success in iArts include the effective synthesis of theory and practice, the ability to situate arts practice and research within larger

critical contexts, skills in creative making, performance and production, skills in collaboration and effective communication across cultural and disciplinary difference, and the ability to apply these skills with autonomy and self-direction, providing students with strategies for life-long research supporting creative contributions to society.

iArts students will have many opportunities to present their creative projects in public contexts including the Fall Majors Production, the student productions (Honours Production series/HPS), the SUMMA exhibition, and various other large and small-scale performance and exhibition opportunities woven throughout the program. These projects allow for assessment of skills in creative practice, but also in project management, collaboration, and community engagement. Skills in documentation and dissemination of creative works are embedded throughout, creating objects for assessment, but also providing students the opportunity to share and extend their practices with the community at large.

6 RESOURCES

6.1 UNDERGRADUATE PROGRAMS

6.1.1 ADMINISTRATIVE, PHYSICAL AND FINANCIAL RESOURCES

Technical Staff and Teaching Assistants

The Studio and Performance labs are staffed by instructional assistants (5), graduate TAs from other programs [as SOTA currently has no graduate programs of its own], undergraduate TAS and work study students for specific and summer-time projects. The teaching assistants are supervised by SOTA faculty and office staff, while the instructional assistants and work study students are supervised by Patrick Brennan, Operations Manager of the events spaces (L.R.W. Black Box and Concert Hall), who works out of the Dean's Office.

Office Staff

The School of the Arts runs it main office with 4 staff: an executive assistant, one financial assistant, and two curriculum and program assistants.

Existing Space and Additional Requirements

In terms of interdisciplinary arts research and teaching, space is pedagogy. The spaces in which we teach directly affect our ability to work across and between traditional arts disciplines. The School of the Arts has been fortunate to benefit from two recent investments in arts infrastructure at the university: the renovation of the arts studios and creation of the Fitzhenry Atrium, and the construction of the Black Box Theatre and Concert Hall in Wilson Hall. The Black

Box Theatre is shared 50% with Communications and Multimedia, and the Concert Hall is used as a central resource for the university as a whole. The Performance Lab in Temporary Building 13, created relatively recently in 2009, is also central to the pedagogy of the School. The scenic workshops for theatre productions are currently located in Temporary Building 32 in the West Campus parking lot.

Some of the School's older spaces are in need of renovation but continued access to existing spaces in Robinson Hall; large parts of the basement, and the first and fourth floors of TSH – especially TSH 118 and B124 – is essential.

If the new programs are to successfully integrate arts research practice as envisioned by this proposal, it is essential that this geographical problem be solved. The research-creation classes, that involve all BFA students working together in the full variety of arts disciplines taught in the program, require three adjacent creative labs: one makers' studio, one performance studio, and one digital studio. The spaces must be adjacent to each other in order for classes to move between different media explorations as their needs require and to encourage students coming from traditionally separate disciplines to work together. The makers' studio would be equipped for drawing, painting, and soft material construction, textile work and costume-making. The rehearsal studio must be an open space for workshop exercises that is also equipped with lights, sound, and video projection (equipment could be imported from our current Performance Lab). The digital studio should feature digital cameras, digital paper printers, 3D printers and computer stations, sound recording facility, and a green screen.

It would be possible to create these spaces through the renovation of our existing spaces in Togo Salmon Hall and the strategic addition of underused spaces adjacent to our own. Scenic work could be incorporated into the studio workshops freeing up T32. There is the potential to consolidate resources: scenic and props work could be incorporated into the studio workshops, and increased emphasis on fabric arts could be facilitated through a connection with costume design and construction. [**See Appendix 5: Physical Resources**]

6.1.2 *LIBRARY, TECHNOLOGY, AND LABORATORY RESOURCES*

From McMaster University Library report:

"The University Library is pleased to provide this document describing collections and services in support of the information needs of students and faculty in the proposed new Bachelor of Fine Arts and Bachelor of Arts, Hons programs in the School of the Arts.

As noted in the proposal, this program, within the Faculty of Humanities, will consist of a Bachelor of Fine Arts and a BA Honours in Integrated Arts (iArts), and will draw on both new

and existing faculty and courses in Art History, Studio Arts, and Theatre and Film Studies, with potential future collaborations with Music. The University Library provides services and scholarly resources to support undergraduate instruction and faculty-level research for existing programs across the School of the Arts, many of which will be highly relevant to students enrolled in the iArts programs.

It is our assessment that the resources available provide sufficient scholarly support for the teaching and research needs of the proposed undergraduate curriculum. We are not aware of any significant gaps in the Library's collection that would impede the Program's students in their study and research activities. The Library welcomes input from faculty in the program regarding needed information resources and priority of acquisition within the established budgets for Art, Theatre and Film Studies, and Music."

[See Appendix 6: Library Resources]

6.1.3 *FACULTY*

Theatre and Film Studies, Studio Art and Art History are currently operating with a faculty complement of 7 tenure-track, 2 teaching-track, 1 CLA, and one cross appointment with Arts and Science, for a total of 10.5 faculty lines. The Faculty of Humanities is in the process of hiring a new Director of the School which will bring the total for 2019-20 to 11.5. In addition, the present programs rely on 54 units of teaching from sessional instructors and other departments. The old programs supported by these faculty resources are all being folded in order to enable the creation of iArts.

The initial phase of the iArts curriculum is budgeted to operate more or less within the limitations of present faculty resources. The programs cannot be sustained without an ongoing commitment to the recruitment of sufficient full-time, tenure-track faculty to develop and expand the new initiatives.

Following the implementation of phase one, the iArts programs could expand in multiple directions to fully integrate with McMaster's research and learning community. As outlined in section 6.1.5, the future of iArts at McMaster will be determined by the vision of the new director and the desire of other programs and Faculties on campus to explore the possibilities of integrating arts research practice into their existing programs. Further new hires will be necessary to facilitate these collaborations and fully integrate the arts with other research on campus.

FACULTY COMPLEMENT FOR 2018-19:

NAME	ACADEMIC RANK/ APPOINTMENT	COURSES LOAD AND ADMINISTRATIVE LOAD PER ACADEMIC YEAR	NOTES
JUDY MAJOR-GIRARDIN	PROFESSOR (RESEARCH)	15 CREDIT HOURS 20% ADMINISTRATIVE	STUDIO ART
JOHN FORD (ON LEAVE 2019/20)	ASSOCIATE PROFESSOR (RESEARCH)	15 CREDIT HOURS 20% ADMINISTRATIVE	STUDIO ART
BRIANA PALMER	ASSOCIATE PROFESSOR (TEACHING)	24 CREDIT HOURS 20% ADMINISTRATIVE	STUDIO ART
CARMELA LAGANSE	ASSISTANT PROFESSOR (RESEARCH)	15 CREDIT HOURS 20% ADMINISTRATIVE	STUDIO ART
PETER COCKETT	ASSOCIATE PROFESSOR (TEACHING)	24CREDIT HOURS 20% ADMINISTRATIVE	THEATRE AND FILM STUDIES
CATHERINE GRAHAM	ASSOCIATE PROFESSOR (RESEARCH)	15 CREDIT HOURS 20% ADMINISTRATIVE	THEATRE AND FILM STUDIES RETIRING JUNE 30, 2020
JANICE HLADKI	ASSOCIATE PROFESSOR (RESEARCH)	15 CREDIT HOURS 20% ADMINISTRATIVE	THEATRE AND FILM STUDIES RETIRED JUNE 30, 2019
JOE SOKALSKI	ASSOCIATE PROFESSOR (RESEARCH)	15 CREDIT HOURS 20% ADMINISTRATIVE	THEATRE AND FILM STUDIES
ANGELA SHENG	ASSOCIATE PROFESSOR (RESEARCH)	15 CREDIT HOURS 20% ADMINISTRATIVE	ART HISTORY

BETH MARQUIS (.5)	ASSISTANT PROFESSOR (RESEARCH)	6 CREDIT HOURS 20% ADMINISTRATIVE 9 CREDIT HOURS ARTS & SCIENCE	THEATRE AND FILM STUDIES AND ARTS AND SCIENCE
ADRIENNE CROSSMAN	ASSISTANT PROFESSOR (CLA)	21 CREDIT HOURS 20% ADMINISTRATIVE	STUDIO ART CONTRACT ENDING: JUNE 30, 2020

[See Appendix 7: Faculty CVs]

6.1.4 ANTICIPATED CLASS SIZE

A financial analysis is currently underway. Anticipated class sizes will be indicated here once that process is complete.

6.1.5 PROGRAM IMPLEMENTATION

As mentioned above, Phase One of the iArts program outlined in this document is designed to work within the teaching resources available to the current Art History, Studio Art, and Theatre and Film Studies programs (10.5 lines), and the addition of the new Director hire (making 11.5). This phase will allow us to test out the program's effectiveness and develop an iArts foundation from which to build.

Phase One requires investment in space renovation to create workshops and rehearsal rooms that can facilitate interdisciplinary arts teaching and research (see 6.1.1) and in outreach and recruitment campaigns. It will also require a commitment to the hiring of interdisciplinary tenure-stream faculty for the lines of our recently retired colleagues.

Our intent is to continue existing collaborations between SOTA and other programs in the Humanities, including cross-listed courses, with conversations pending to confirm that our colleagues are also willing to continue these arrangements and resources are available.

We will engage in consultation with experts in decolonizing at a structural level including experts in Indigenous Studies and the Equity and Inclusion Office, among other content experts at McMaster.

Future Phases will require many more conversation between iArts and other programs in the Humanities. We have no desire to compete with or duplicate courses run in other programs. As our program unfolds, our intent is to welcome collaboration through sharing courses, reserving seats and adding courses from other programs to our iArts offerings, in cases where these collaborations will clearly be of benefit to all programs and our students. As indicated below

under the heading Future Phases, we have identified programs with which we feel we have an affinity, and who themselves are engaged in conversations that reflect out aims, but in most cases these in-depth, detailed conversations about collaborative potential have yet to occur. We are open to new ways of moving forward together within Humanities.

Implementation Timeline: Phase One (assumes acceptance by Ministry by June 2020)

June 2020:
- Program for Phase One entered in University Calendar
- Outreach campaign to student counsellors in Ontario high schools
- *Design process for new iArts space renovations begins.*

July 2020: New Director of the School begins appointment
- Hiring process begins for 2 possible interdisciplinary tenure-stream faculty (using lines currently assigned to SOTA)

September-November 2020:
- Recruitment campaign for first-year intake BFA program 2021/22.

September 2021
- First-year iArts BFA intake

December 2021:
- *Designs for renovated spaces complete*

April 2021:
- *Renovations of new spaces begins*

August 2021:
- Renovations complete and spaces ready for first-year intake BFA students

September-November 2021:
- Recruitment campaign for second-year intake BA Hons. Program 2022/23
- No further intake into Art History, Studio BFA (former) or Theatre & Film programs

Future Phases

Once Phase One is implemented, the program could develop in multiple directions all of which depend on the collaboration of other programs and Faculties, and in some instances would require further new appointments.

The future direction of iArts is also contingent on the vision of the new Director. The following represents aspirational plans by the SOTA iArts faculty about possible collaborations across campus. Within a wide range of possibilities, the two most obvious paths forward are indicated on the model with the pink and grey circles in the diagram in 1.1: Sound/Music and Moving Image.

Sound/Music

The iArts curriculum grounds students in the theory and practice of the arts. The new programs would be much enhanced by the addition of a Music specialization which could include courses emphasizing the cultural politics of music making, and new practical courses that include indigenous music, digital music, and music from other cultures. The pedagogy of iArts privileges the contemporary and uses history to better understand current creative practices and to provide context for students' own research-creation projects. Music case studies could be incorporated into our Perspectives courses, and more specialized courses could be added to Creative Critical Culture.

Moving Image

The iArts program foresees a strong relationship with the current Multimedia BA that could develop in a variety of ways. It is a natural fit since Multimedia also trains arts researchers working with digital technologies and integrates critical theory and practice in its teaching methodology. Both Studio Art and Theatre and Film Studies also offer courses that incorporate digital art-making, and Theatre and Film Studies has offerings in cinema and digital storytelling. There are thus significant overlaps between our current programs, and it is logical that we should develop a future built on shared interests and resources.

Fruitful collaborations already exist with David Ogborn's Centre for Networked Media and Performance (CNMAP). Multimedia and Communication Studies faculty have also expressed enthusiasm for a potential double major iArts BFA/Multimedia BA. This offers a very positive step forward and the opportunity to build trust, and to explore the economies of sharing resources and other benefits of inter-program collaboration.

Further Integrations

The iArts faculty are aware of the growing emphasis on arts-research in other Faculties on campus and our programs are designed to be outward looking and to integrate with the university at large. Our Level I courses all have places available to students from across campus that will enable integration of iArts courses with other student pathways. Our two core Level II Perspectives courses address the multiple ways arts-research contributes to other fields. IARTS 2PC3 Perspectives C: Arts in the Community explores historical and contemporary case studies of community arts and has obvious applicability to the Social Sciences and Social Work. IARTS 2PD3 Perspectives D: Arts Across Disciplines explores current interdisciplinary arts and science research practice. Both of these courses are imagined as potential entry points for students from other Faculties that, with collaboration from their home Faculties, can open the possibility for students to engage in collaborative arts research study at upper levels. The extent and

depth of our integration with other Faculties will depend on the vision of the new director, the commitment from our colleagues on campus, and the willingness of their Faculties to support the initiative.

The iArts program is committed to the idea that arts research practices can complement research in other fields at every stage, from inception, through development, to design and communication. We aspire to collaborate on new courses that bring artists and scientists together to imagine solutions to social and material problems.

Indigenous Studies

The iArts focus on social justice, equity, diversity and inclusion and interdisciplinary practice has been inspired in part by Indigenous pedagogy and Indigenous ways of knowing. We aspire to collaborate with the Indigenous Education Council, faculty, and students in the Indigenous Studies Program at McMaster to find ways that courses in our program can support their students. We acknowledge that we are just at beginning of a process of Indigenizing the curriculum, and that we have a great deal to learn moving forward.

Gender Studies and Feminist Research

The iArts program's commitment to critical theory will position its students well to enter into the GSFR program. Over time we see the potential to develop graduate courses in arts and social action that would work well within GSFR.

Arts and Science

The potential for collaboration between iArts and Arts and Science is extremely high. Arts and Science currently offer courses that align directly with the intentions of the iArts program, namely: ARTSSCI 3CL3 Theatre, Self, and Social Development, ARTSSCI 4VC3 Visual Culture Inquiry, and ARTSSCI 4CD3 Research and Creative Writing. The new iArts programs will offer ARTSCI students a new avenue to engage with the integration of the arts and sciences through practice-based research.

English and Cultural Studies

The popular creative writing courses within the Department of English and Cultural Studies offer a potential fruitful avenue for collaboration. The Centre for Community-Engaged Narrative Arts, co-directed by Daniel Coleman and Lorraine York, has a strong affinity with iArts approach to arts practice. In 2020, Dr. Coleman will be collaborating with Judy Major-Girardin on an on-campus research project, Designing Paradise/West Campus. The enhancement of opportunities in creative writing is one potential future direction of development of the iArts program.

Social Sciences and Social Work

Carmela Laganse's projects with Centre3 Gallery in downtown Hamilton and Catherine Graham's collaboration with Christina Sinding (School of Social Work) are two examples of the School of the Arts' commitment to community arts research. Arts-based methods have long been a part of research practices in the social sciences and experiential learning opportunities could be developed within the iArts program either through specifically designed and co-taught course offerings or through research-creation projects driven by BFA students but including participation of students and faculty from the Social Sciences.

Life Sciences, HealthSci and iSci

The arts are already being incorporated in Life Sciences and HealthSci programs. Kim Dej and Sally Mckay have already developed a new course on visualizing science and the potential for further development is high.

Engineering

Integrating opportunities for Engineering students is difficult due to the minimal electives open to them in their program. Product design, however, remains a natural point of affinity between engineering and arts research practice.

7 QUALITY AND OTHER INDICATORS

7.1 ACADEMIC QUALITY OF THE PROGRAM

To demonstrate the quality and success of the program, the BFA degree has natural markers for academic success such as the capstone creative research project, community engagement projects and experiential learning. So too the BA offers optional opportunities such as capstone thesis or collaborative projects. The public presentation and documentation of creation-based projects gives students the opportunity to demonstrate skills in project management and professionalism in all aspects of presentation and performance.

Student skills will be assessed as they present their creative projects in public contexts including student productions, the BFA SUMMA exhibition of the graduating class, and various other large and small-scale performance and exhibition opportunities woven throughout the program where Faculty and peer feedback function as pedagogy and methods of assessment.

Graduate and undergraduate TAs will assist in the classroom. Entrance and graduation awards and scholarships already exist and would be sustained in the program. Graduate school

enrolments will be tracked and alumni called upon to help improve the program, both at graduation and subsequent years.

7.2 INTELLECTUAL QUALITY OF THE STUDENT EXPERIENCE

The iArts program is grounded in social justice, equity, diversity and inclusivity. In both BFA and BA cohorts, the students will be encouraged in their creative research projects to develop personal and communal responsibility for one another and the world around them.

Every course has both a theoretical and a practical aspect which requires close collaboration within a student cohort and with faculty advisors. SOTA faculty already do this in their creative research practices. The new program is simply building on decades of faculty-student interactions on campus and in Hamilton's creative community.

In combining Critical Creative Culture, Studio and Performance, iArts students will have the opportunity to engage through a wide range of delivery methods. The curriculum will encourage individualized, self-directed research pathways for students from a range of backgrounds and life experiences. With a focus on arts-based learning, students in iArts will discover opportunities for self-expression and social engagement to suit their individual interests and learning styles.

iARTS Appendix I

iARTS Calendar Copy & Course Descriptions

TABLE OF CONTENTS

iARTS Course Lists

iARTS Investigations Course List A

- IARTS 2AD3 Acting as Devising I
- IARTS 2AS3 Art and Visual Culture in South and East Asia
- IARTS 2CC3 Performance Culture in Canada
- IARTS 2CD3 Contemporary Approaches to Drawing Practices
- IARTS 2DE6 Devised Performance Processes
- IARTS 2DP3 Digital Practices
- IARTS 2EP3 3D and Expanded Practices
- IARTS 2ER3 Environmentally Responsible Art
- IARTS 2FA3 Film Analysis
- IARTS 2ME3 Art and Visual Culture in the Middle East
- IARTS 2MP3 Contemporary Approaches to Print Media Practices
- IARTS 2OP3 Organizing Performance Space
- IARTS 2CP3 Contemporary Approaches to Painting Practices
- IARTS 2RV3 Reading Visual Culture
- IARTS 2SE3 Performance Culture in South and East Asia
- IARTS 2SP3 Contemporary Approaches to Sculpture Practices
- IARTS 2US3 Understanding Spatial Dynamics and Time in the Arts
- IARTS 2VA3 Art and Visual Culture in Canada

iARTS Investigations Course List B

- IARTS 3AD3 Acting as Devising II
- IARTS 3BA3 Book Arts
- IARTS 3CE3 Concentrated Study Ceramics
- IARTS 3CH3 Cinema History from WWII
- IARTS 3CP3 Performance and Community Engagement
- IARTS 3CW3 Colours of the World
- IARTS 3DA3 Arts and Spaces for Dwelling and Activities
- IARTS 3EC3 Early Cinema History
- IARTS 3FI3 Fashion and Identity
- IARTS 3FO3 Concentrated Study Foundry
- IARTS 3GE3 Contemporary Arts and The Global Economy
- IARTS 3IA3 Indigenous Art and Visual Culture in Canada
- IARTS 3ID3 Integrated Dimensional Media Concentration
- IARTS 3IM3 Integrated Media Concentration
- IARTS 3IN3 Concentrated Study Intaglio
- IARTS 3IP3 Intercultural Performance Practices
- IARTS 3LC3 Local Canadian Contemporary Art & Performance

- IARTS 3LI3 Concentrated Study Lithography
- IARTS 3MI3 Media Installation and Performance
- IARTS 3MM3 Materials and Materiality
- IARTS 3MP6 Devised Theatre Production
- IARTS 3ND3 New Directions in Painting/Drawing
- IARTS 3OE3 Field Work: On-Site Explorations
- IARTS 3BF3 Photography Beyond the Frame
- IARTS 3SD3 Structuring the Devised Performance
- IARTS 3SP3 Scenograghy at Play
- IARTS 3SR3 Intercultural Arts Along the Silk Road
- IARTS 3SS3 Site-Specific Performance
- IARTS 3TB3 Devised Theatre Production: Research and Development
- IARTS 3VS3 Visual Storytelling

iARTS Investigations Course List C

- IARTS 4AD3 Acting as Devising III
- IARTS 4AE3 Art and the Environment
- IARTS 4CE3 Concentrated Study Ceramics
- IARTS 4DF3 Scene Study in Digital Film
- IARTS 4DM3 Arts and Diasporic Migration
- IARTS 4IN3 Concentrated Study Intaglio
- IARTS 4LI3 Concentrated Study Lithography
- IARTS 4SD3 Scripting the Devised Performance

Honours Integrated Arts (B.A.)

Admission

Completion of any Level 1 program and a Grade Point Average of at least 5.0 including successful completion of either IARTS 1PA3 or IARTS 1PB3, *and a minimum grade of C in one course from the following list*: IARTS 1HA3, IARTS 1SW3, IARTS 1CR3, IARTS 1TO3, IARTS 1BD3, IARTS 1SS3

Notes

1. All iARTS students will receive exposure to a range of arts disciplines throughout their four years of study. Students may choose to develop a specialization in Studio, Performance, or Creative Critical Culture, or complete their degree without a specialization.

2. Students wishing to take iARTS with a specialization in Studio, Performance, or Creative Critical Culture, should consult the calendar entry for their chosen specialization.

3. Before choosing courses, students should become familiar with prerequisites that will determine course selection in the subsequent year(s).

4. Students may apply in Level III to enroll in 6 units of Level IV iARTS Capstone Project, but it is not a requirement of the BA.

Requirements

120 units total

30 units

- from the Level I program completed prior to admission into the program

3 units

- IARTS 2PC3 Perspectives C: Arts in the Community
- IARTS 2PD3 Perspectives D: Arts Across Disciplines

12 units

- from iARTS Investigations Course List A

6 units

- from iARTS Investigations Course List A, or may include any of the following:

- HISTORY 2DF3 Art and Revolution in France, 1789-1914
- CLASSICS 2B03 Greek Art
- CLASSICS 2C03 Roman Art
- MUSIC 2A03 Music of the World's Cultures
- MUSIC 2F03 Music for Film and Television
- MUSIC 2II3 Popular Music in North America and the United Kingdom: Post-World War II
- MUSIC 2TT3 Broadway and the Popular Song
- MUSIC 2U03 Jazz

3 units

- IARTS 3PE3 Perspectives E: Arts in Society; Equity and Inclusion

18 units

- from iARTS Investigations Course List B, or may include any of the following:

- ARTSSCI 3TR3 Trees Inquiry {AGREEMENT PENDING}
- CLASSICS 3H03 Archaic Greek Art
- CLASSICS 3Q03 Greek Sanctuaries
- CLASSICS 3S03 Pompeii, Herculaneum, and Ostia
- CMST 3S03 Television and Society {AGREEMENT PENDING}
- CMST 3Z03 Mobile Practices, Technologies and Art {AGREEMENT PENDING}

- FRENCH 3V03 Image & Knowledge Representation
- HISTORY 3DF3 Art and Politics in Second Empire France
- HISTORY 4LP3 The Cultural History of Paris., 1789-1914

3 units

- IARTS 4PF3 Perspectives F: Arts in Society; Seminar and Independent Research

6 units

- from iARTS Investigations Course List C, or may include the following:
- IARTS 4CO6 Thesis Project (6 units) (on application entry)

39 units

Modules and Elective

Honours Integrated Arts (B.A.)

[Specialization in Creative Critical Culture]

Admission

Completion of any Level 1 program and a Grade Point Average of at least 5.0 including successful completion of either IARTS 1PA3 or IARTS 1PB3, *and a minimum grade of C in one course from the following list*: IARTS 1HA3, IARTS 1SW3.

Notes

1. iARTS Honours B.A. students with a specialization in Creative Critical Culture, Performance, or Studio must take a required number of courses from their chosen specialization.

2. At each level, they must also take additional iARTS credits that may also be from their chosen specialization or may be from the other specializations.

3. Before choosing courses, students should become familiar with prerequisites that will determine course selection in the subsequent year(s).

4. Students may apply in Level III to enroll in 6 units of Level IV iARTS Capstone Project, but it is not a requirement of the BA.

5. In Level II, students must take IARTS 1HA3 or IARTS 1SW3 if not taken in Level I. If both IARTS 1HA3 and IARTS 1SW3 were completed in Level I, students may take one course from the following list instead: IARTS 2RV3, IARTS 2US3 , IARTS 2AS3, IARTS 2SE3, IARTS 2VA3, IARTS 2CC3, IARTS 2ME3, IARTS 2FA3

Requirements

120 units total

30 units

- from the Level I program completed prior to admission into the program

3 units

- IARTS 2PC3 Perspectives C: Arts in the Community
- IARTS 2PD3 Perspectives D: Arts Across Disciplines

3 units

- IARTS 1HA3 (if not taken in Level I)
- IARTS 1SW3 (if not taken in Level I)

- *If both* IARTS 1HA3 and IARTS 1SW3 *were completed in Level I, students may take one course from the following list instead:* IARTS 2AS3, IARTS 2SE3, IARTS 2VA3, IARTS 2CC3, IARTS 2ME3, IARTS 2FA3

6 units

- IARTS 2RV3 Reading Visual Culture
- IARTS 2US3 Understanding Spatial Dynamics and Time in the Arts

3 units

- IARTS 2AS3 Art and Visual Culture in South and East Asia
- IARTS 2SE3 Performance Culture in South and East Asia
- IARTS 2VA3 Art and Visual Culture in Canada
- IARTS 2CC3 Performance Culture in Canada
- IARTS 2ME3 Art and Visual Culture in the Middle East
- IARTS 2FA3 Film Analysis

3 units

- from iARTS Investigations Course List A, or may include any of the following:

- HISTORY 2DF3 Art and Revolution in France, 1789-1914
- CLASSICS 2B03 Greek Art
- CLASSICS 2C03 Roman Art
- MUSIC 2A03 Music of the World's Cultures
- MUSIC 2F03 Music for Film and Television
- MUSIC 2II3 Popular Music in North America and the United Kingdom: Post-World War II
- MUSIC 2TT3 Broadway and the Popular Song
- MUSIC 2U03 Jazz

3 units

- IARTS 3PE3 Perspectives E: Arts in Society; Equity and Inclusion

6 units

- IARTS 3CW3 Colours of the World
- IARTS 3MM3 Materials and Materiality

9 units

- IARTS 3SR3 Intercultural Arts Along the Silk Road
- IARTS 3DA3 Arts and Spaces for Dwelling and Activities
- IARTS 3LC3 Local Canadian Contemporary Art & Performance
- IARTS 3IP3 Intercultural Performance Practices
- IARTS 3GE3 Contemporary Arts and The Global Economy
- IARTS 3FI3 Fashion and Identity
- IARTS 3IA3 Indigenous Art and Visual Culture in Canada
- IARTS 3EC3 Early Cinema History
- IARTS 3CH3 Cinema History from WWII

3 units

- IARTS 4PF3 Perspectives F: Arts in Society; Seminar and Independent Research

3 units

- IARTS 4DM3 Arts and Diasporic Migration
- IARTS 4AE3 Art and the Environment

6 units

- from iARTS Investigations Course Lists B and C, or may include any of the following:

- IARTS 4CO6 Thesis Project (6 units) (on entry application) IARTS 3AD3 Acting as Devising II
- ARTSSCI 3TR3 Trees Inquiry {AGREEMENT PENDING}
- CLASSICS 3H03 Archaic Greek Art
- CLASSICS 3Q03 Greek Sanctuaries
- CLASSICS 3S03 Pompeii, Herculaneum, and Ostia
- CMST 3S03 Television and Society {AGREEMENT PENDING}
- CMST 3Z03 Mobile Practices, Technologies and Art {AGREEMENT PENDING}
- FRENCH 3V03 Image & Knowledge Representation
- HISTORY 3DF3 Art and Politics in Second Empire France
- HISTORY 4LP3 The Cultural History of Paris., 1789-1914

42 units

- Modules and Electives

Honours Integrated Arts(B.A.)

[Specialization in Performance]

Admission

Completion of any Level 1 program and a Grade Point Average of at least 5.0 including successful completion of either IARTS 1PA3 or IARTS 1PB3, *and a minimum grade of C in one course from the following list*: IARTS 1CR3, IARTS 1TO3.

Notes

1. iARTS Honours B.A. students with a specialization in Creative Critical Culture, Performance, or Studio must take a required number of courses from their chosen specialization.

2. At each level, they must also take additional iARTS credits that may also be from their chosen specialization or may be from the other specializations.

3. Before choosing courses, students should become familiar with prerequisites that will determine course selection in the subsequent year(s).

4. Students may apply in Level III to enroll in 6 units of Level IV iARTS Capstone Project, but it is not a requirement of the BA.

5. In Level II, students must take IARTS 1CR3 or IARTS 1TO3 if not taken in Level I. If both IARTS 1CR3 and IARTS 1TO3 were completed in Level I, students may take one course from the following list instead: IARTS 2AD3, IARTS 2FA3, IARTS 2SE3, IARTS 2CC3

Requirements

120 units total

30 units

- from the Level I program completed prior to admission into the program

3 units

- IARTS 2PC3 Perspectives C: Arts in the Community
- IARTS 2PD3 Perspectives D: Arts Across Disciplines

3 units

- IARTS 1CR3 (if not taken in Level I)
- IARTS 1TO3 (if not taken in Level I)

If both IARTS 1CR3 and IARTS 1TO3 *were completed in Level I, students may take one course from the following list instead:* IARTS 2AD3, IARTS 2FA3, IARTS 2SE3, IARTS 2CC3

6 units

- IARTS 2DE6 Devised Performance Processes

3 units

- IARTS 2AD3 Acting as Devising I
- IARTS 2OP3 Organizing Performance Space
- IARTS 2FA3 Film Analysis
- IARTS 2CC3 Performance Culture in Canada
- IARTS 2SE3 Performance Culture in South and East Asia
- MMEDIA 2G03 Introduction to Digital Media

3 units

- from iARTS Investigations Course List A, or may include any of the following:

- HISTORY 2DF3 Art and Revolution in France, 1789-1914
- CLASSICS 2B03 Greek Art

- CLASSICS 2C03 Roman Art
- MUSIC 2A03 Music of the World's Cultures
- MUSIC 2F03 Music for Film and Television
- MUSIC 2II3 Popular Music in North America and the United Kingdom: Post-World War II
- MUSIC 2TT3 Broadway and the Popular Song
- MUSIC 2U03 Jazz

3 units

- IARTS 3PE3 Perspectives E: Arts in Society; Equity and Inclusion

15 units

- IARTS 3SS3 Site-Specific Performance
- IARTS 3SP3 Scenography at Play
- IARTS 3IP3 Intercultural Performance Practices
- IARTS 3SD3 Structuring the Devised Performance
- IARTS 3CP3 Performance and Community Engagement
- IARTS 3MP6 Devised Theatre Production
- IARTS 3TB3 Devised Theatre Production: Research and Development
- IARTS 3VS3 Visual Storytelling
- IARTS 3CH3 Cinema History from WWII
- IARTS 3EC3 Early Cinema History
- IARTS 3AD3 Acting as Devising II
- IARTS 3MI3 Media Installation and Performance
- IARTS 3ID3 Integrated Dimensional Media Concentration

3 units

- IARTS 4PF3 Perspectives F: Arts in Society; Seminar and Independent Research

3 units

- IARTS 4AD3 Acting as Devising III
- IARTS 4SD3 Scripting the Devised Performance
- IARTS 4DF3 Scene Study in Digital Film

6 units

- from iARTS Investigations Course Lists B and C, or may include any of the following:

- IARTS 4CO6 Thesis Project (6 units) (on entry application) IARTS 3AD3 Acting as Devising II
- ARTSSCI 3TR3 Trees Inquiry {AGREEMENT PENDING}
- CLASSICS 3H03 Archaic Greek Art
- CLASSICS 3Q03 Greek Sanctuaries
- CLASSICS 3S03 Pompeii, Herculaneum, and Ostia
- CMST 3S03 Television and Society {AGREEMENT PENDING}
- CMST 3Z03 Mobile Practices, Technologies and Art {AGREEMENT PENDING}
- FRENCH 3V03 Image & Knowledge Representation
- HISTORY 3DF3 Art and Politics in Second Empire France
- HISTORY 4LP3 The Cultural History of Paris., 1789-1914

42 units

- Modules and Electives

Honours Integrated Arts(B.A.)

[Specialization in Studio]

Admission

Completion of any Level 1 program and a Grade Point Average of at least 5.0 including successful completion of either IARTS 1PA3 or IARTS 1PB3*, and a minimum grade of C in one course from the following list*: IARTS 1BD3, IARTS 1SS3.

Notes

1. iARTS Honours B.A. students with a specialization in Creative Critical Culture, Performance, or Studio must take a required number of courses from their chosen specialization.

2. At each level, they must also take additional iARTS credits that may also be from their chosen specialization or may be from the other specializations.

3. Before choosing courses, students should become familiar with prerequisites that will determine course selection in the subsequent year(s).

4. Students may apply in Level III to enroll in 6 units of Level IV iARTS Capstone Project, but it is not a requirement of the BA.

5. In Level II, students must take IARTS 1BD3 or IARTS 1SS3 if not taken in Level I. If both IARTS 1BD3 and IARTS 1SS3 were completed in Level I, students make take one course from the following list instead: IARTS 2CD3, IARTS 2CP3, IARTS 2MP3, IARTS 2SP3 , IARTS 2ER3, IARTS 2EP3, IARTS 2DP3

Requirements

120 units total

30 units

- from the Level I program completed prior to admission into the program

3 units

- IARTS 2PC3 Perspectives C: Arts in the Community
- IARTS 2PD3 Perspectives D: Arts Across Disciplines

3 units

- IARTS 1BD3 (if not taken in Level I)
- IARTS 1SS3 (if not taken in Level I)

If both IARTS 1BD3 and IARTS 1SS3 were completed in Level I, students make take one course from the following list instead: IARTS 2CD3, IARTS 2CP3, IARTS 2MP3, IARTS 2SP3 , IARTS 2ER3, IARTS 2EP3, IARTS 2DP3

9 units

- IARTS 2CD3 Contemporary Approaches to Drawing Practices
- IARTS 2CP3 Contemporary Approaches to Painting Practices
- IARTS 2MP3 Contemporary Approaches to Print Media Practices
- IARTS 2SP3 Contemporary Approaches to Sculpture Practices
- IARTS 2ER3 Environmentally Responsible Art
- IARTS 2EP3 3D and Expanded Practices
- IARTS 2DP3 Digital Practices

3 units

- from iARTS Investigations Course List A, or may include any of the following:

- HISTORY 2DF3 Art and Revolution in France, 1789-1914
- CLASSICS 2B03 Greek Art
- CLASSICS 2C03 Roman Art
- MUSIC 2A03 Music of the World’s Cultures
- MUSIC 2F03 Music for Film and Television
- MUSIC 2II3 Popular Music in North America and the United Kingdom: Post-World War II

- MUSIC 2TT3 Broadway and the Popular Song
- MUSIC 2U03 Jazz

3 units

- IARTS 3PE3 Perspectives E: Arts in Society; Equity and Inclusion

15 units

- IARTS 3BA3 Book Arts
- IARTS 3CE3 Concentrated Study Ceramics
- IARTS 3FO3 Concentrated Study Foundry
- IARTS 3IN3 Concentrated Study Intaglio
- IARTS 3LI3 Concentrated Study Lithography
- IARTS 3OE3 Field Work: On-Site Explorations
- IARTS 3ID3 Integrated Dimensional Media Concentration
- IARTS 3IM3 Integrated Media Concentration
- IARTS 3MI3 Media Installation and Performance
- IARTS 3BF3 Photography Beyond the Frame
- IARTS 3ND3 New Directions in Painting/Drawing
- IARTS 3SP3 Scenography at Play
- IARTS 3VS3 Visual Storytelling

3 units

- IARTS 4PF3 Perspectives F: Arts in Society; Seminar and Independent Research

3 units

- IARTS 4DM3 Arts and Diasporic Migration
- IARTS 4AE3 Art and the Environment

6 units

- from iARTS Investigations Course Lists B and C, or may include any of the following:

- IARTS 4CO6 Thesis Project (6 units) (on entry application) IARTS 3AD3 Acting as Devising II
- ARTSSCI 3TR3 Trees Inquiry {AGREEMENT PENDING}
- CLASSICS 3H03 Archaic Greek Art
- CLASSICS 3Q03 Greek Sanctuaries

- CLASSICS 3S03 Pompeii, Herculaneum, and Ostia
- CMST 3S03 Television and Society {AGREEMENT PENDING}
- CMST 3Z03 Mobile Practices, Technologies and Art {AGREEMENT PENDING}
- FRENCH 3V03 Image & Knowledge Representation
- HISTORY 3DF3 Art and Politics in Second Empire France
- HISTORY 4LP3 The Cultural History of Paris., 1789-1914

42 units

- Modules and Electives

Honours Integrated Arts I (B.F.A.)

Admission

Students wishing to enter this program must complete an entry interview tailored to the applicant's interests, and provide evidence of their artistic practice, which may include: an art portfolio, audition, performance pieces, compositions, creative writing, spoken word poetry, videos, or any other evidence of their creative work. Enrolment in this program is limited. Selection is based on a consideration of academic achievement, assessment of the evidence their artistic practice provided, and a successful interview. In instances of long-distance application, an electronic submission will be accepted.

Notes

1. All iARTS students will receive exposure to a range of arts disciplines throughout their four years of study. Before choosing courses, students should become familiar with prerequisites that will determine course selection in the subsequent year(s).

Requirements

iARts BFA Level 1 (30 units)

6 units

- IARTS 1RR3 Project Development 1
- IARTS 1RP3 Project Production 1

6 units

- IARTS 1PA3 Perspectives A: Arts in Society; Social Constructions of Race and Gender

- IARTS 1PB3 Perspectives B: Arts in Society; Technology and the Environment

9 units

- IARTS 1HA3 Introduction to Histories of the Arts
- IARTS 1SW3 Working in the Arts Today
- IARTS 1CR3 Self, Society and Change: Performance Theories in Action
- IARTS 1TO3 Perspectives and Possible Worlds: Theatre, Performance, and Society
- IARTS 1BD3 2D Practices in Art
- IARTS 1SS3 3D Practices in Art

9 units

- Modules and Electives

Honours Integrated Arts BFA

Admission

Completion of IARTS Level 1 and a Grade Point average of at least 5.0, with an average of at least 5.0 in IARTS 1RR3 and 1RP3*, successful completion of* IARTS 1PA3 and 1PB3, *and successful completion of nine units from the following:* IARTS 1HA3, IARTS 1SW3, IARTS 1CR3, IARTS 1TO3, IARTS 1BD3, IARTS 1SS3

120 units total

30 units

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iARTS BFA level 1

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6 units

- IARTS 2RR3 Project Development 2
- IARTS 2RP3 Project Production 2

6 units

- IARTS 2PC3 Perspectives C: Arts in the Community
- IARTS 2PD3 Perspectives D: Arts Across Disciplines

9 units

- from iARTS Investigations Course List A

3 units

- from iARTS Investigations Course List A, or may include any of the following:

- HISTORY 2DF3 Art and Revolution in France, 1789-1914
- CLASSICS 2B03 Greek Art
- CLASSICS 2C03 Roman Art
- MUSIC 2A03 Music of the World's Cultures
- MUSIC 2F03 Music for Film and Television
- MUSIC 2II3 Popular Music in North America and the United Kingdom: Post-World War II
- MUSIC 2TT3 Broadway and the Popular Song
- MUSIC 2U03 Jazz

6 units

- IARTS 3RC6 Project Production and Development 3

3 units

- IARTS 3PE3 Perspectives E: Arts in Society; Equity and Inclusion

15 units

- from iARTS Investigations Course Lists B

9 units

- from iARTS Investigations Course Lists B and C, or may include any of the following:

- ARTSSCI 3TR3 Trees Inquiry {AGREEMENT PENDING}
- CLASSICS 3H03 Archaic Greek Art
- CLASSICS 3Q03 Greek Sanctuaries
- CLASSICS 3S03 Pompeii, Herculaneum, and Ostia
- CMST 3S03 Television and Society {AGREEMENT PENDING}
- CMST 3Z03 Mobile Practices, Technologies and Art {AGREEMENT PENDING}
- FRENCH 3V03 Image & Knowledge Representation
- HISTORY 3DF3 Art and Politics in Second Empire France
- HISTORY 4LP3 The Cultural History of Paris., 1789-1914

12 units

- IARTS 4CI2 Project Capstone Thesis

21 units

- Modules and Electives

Honours Integrated Arts BFA with a Specialization in Creative Critical Culture

Admission

Enrolment in this program is limited and possession of the published minimum requirements does not guarantee admission. Selection is based on academic achievement but requires, as a minimum, *completion of IARTS Level 1 and a Grade Point Average of at least 5.0, with an average of at least 5.0 in* IARTS 1RR3 and 1RP3, *successful completion of both* IARTS 1HA3 *and* IARTS 1SW3*, and three additional units of the following:* IARTS 1CR3, 1TO3, 1BD3, 1SS3.

Notes:

1. iARTS Honours B.F.A. students with a specialization in Creative Critical Culture, Performance, or Studio must take a required number of courses from their chosen specialization, in addition to shared Perspectives courses and Project courses.

2. At each level, they must also take additional iARTS credits that may be from their chosen specialization or may be from the other specializations.

3. Before choosing courses, students should become familiar with prerequisites that will determine course selection in the subsequent year(s).

Requirements

120 units total

30 units

IARTS BFA level 1

6 units

- IARTS 2RR3 Project Development 2
- IARTS 2RP3 Project Production 2

6 units

- IARTS 2PC3 Perspectives C: Arts in the Community
- IARTS 2PD3 Perspectives D: Arts Across Disciplines

6 units

- IARTS 2RV3 Reading Visual Culture
- IARTS 2US3 Understanding Spatial Dynamics and Time in the Arts

3 units

- IARTS 2AS3 Art and Visual Culture in South and East Asia
- IARTS 2SE3 Performance Culture in South and East Asia
- IARTS 2VA3 Art and Visual Culture in Canada
- IARTS 2CC3 Performance Culture in Canada
- IARTS 2ME3 Art and Visual Culture in the Middle East
- IARTS 2FA3 Film Analysis

3 units

- From iARTS Investigations Course List A, or may include any of the following:

- HISTORY 2DF3 Art and Revolution in France, 1789-1914
- CLASSICS 2B03 Greek Art
- CLASSICS 2C03 Roman Art
- MUSIC 2A03 Music of the World's Cultures
- MUSIC 2F03 Music for Film and Television
- MUSIC 2II3 Popular Music in North America and the United Kingdom: Post-World War II
- MUSIC 2TT3 Broadway and the Popular Song
- MUSIC 2U03 Jazz

6 units

- IARTS 3RC6 Project Production and Development 3

3 units

- IARTS 3PE3 Perspectives E: Arts in Society; Equity and Inclusion

6 units

- IARTS 3CW3 Colours of the World
- IARTS 3MM3 Materials and Materiality

6 units

- IARTS 3SR3 Intercultural Arts Along the Silk Road
- IARTS 3DA3 Arts and Spaces for Dwelling and Activities
- IARTS 3LC3 Local Canadian Contemporary Art & Performance
- IARTS 3IP3 Intercultural Performance Practices
- IARTS 3GE3 Contemporary Arts and The Global Economy
- IARTS 3FI3 Fashion and Identity
- IARTS 3IA3 Indigenous Art and Visual Culture in Canada
- IARTS 3EC3 Early Cinema History
- IARTS 3CH3 Cinema History from WWII

12 units

- IARTS 4CI2 Project Capstone Thesis

3 units

- IARTS 4DM3 Arts and Diasporic Migration
- IARTS 4AE3 Art and the Environment

9 units

- From iARTS Investigations Course Lists B and C, or may include any of the following:

- ARTSSCI 3TR3 Trees Inquiry {AGREEMENT PENDING}
- CLASSICS 3H03 Archaic Greek Art
- CLASSICS 3Q03 Greek Sanctuaries
- CLASSICS 3S03 Pompeii, Herculaneum, and Ostia
- CMST 3S03 Television and Society {AGREEMENT PENDING}
- CMST 3Z03 Mobile Practices, Technologies and Art {AGREEMENT PENDING}
- FRENCH 3V03 Image & Knowledge Representation
- HISTORY 3DF3 Art and Politics in Second Empire France
- HISTORY 4LP3 The Cultural History of Paris., 1789-1914

21 units

- Modules and Electives

Honours Integrated Arts BFA with a Specialization in Performance

Admission

Enrolment in this program is limited and possession of the published minimum requirements does not guarantee admission. Selection is based on academic achievement but requires, as a minimum, *completion of IARTS Level 1 and a Grade Point Average of at least 5.0, with an average of at least 5.0 in* IARTS 1RR3 and 1RP3, *successful completion of both* IARTS 1CR3 *and* IARTS 1TO3*, and three additional units of the following:* 1HA3, 1SW3, 1BD3, 1SS3.

Notes:

1. iARTS Honours B.F.A. students with a specialization in Creative Critical Culture, Performance, or Studio must take a required number of courses from their chosen specialization, in addition to shared Perspectives courses and Project courses.

2. At each level, they must also take additional iARTS credits that may be from their chosen specialization or may be from the other specializations.

3. Before choosing courses, students should become familiar with prerequisites that will determine course selection in the subsequent year(s).

Requirements

120 units total

30 units

IARTS BFA level 1

6 units

- IARTS 2RR3 Project Development 2
- IARTS 2RP3 Project Production 2

6 units

- IARTS 2PC3 Perspectives C: Arts in the Community
- IARTS 2PD3 Perspectives D: Arts Across Disciplines

6 units

- IARTS 2DE6 Devised Performance Processes

3 units

- IARTS 2AD3 Acting as Devising I
- IARTS 2OP3 Organizing Performance Spaces
- IARTS 2FA3 Film Analysis
- IARTS 2CC3 Performance Culture in Canada
- IARTS 2SE3 Performance Culture in South and East Asia
- MMEDIA 2G03 Introduction to Digital Media

3 units

- From iARTS Investigations Course List A, or may include any of the following:

- HISTORY 2DF3 Art and Revolution in France, 1789-1914
- CLASSICS 2B03 Greek Art
- CLASSICS 2C03 Roman Art
- MUSIC 2A03 Music of the World's Cultures
- MUSIC 2F03 Music for Film and Television
- MUSIC 2II3 Popular Music in North America and the United Kingdom: Post-World War II
- MUSIC 2TT3 Broadway and the Popular Song
- MUSIC 2U03 Jazz

6 units

- IARTS 3RC6 Project Production and Development 3

3 units

- IARTS 3PE3 Perspectives E: Arts in Society; Equity and Inclusion

15 units

- IARTS 3SS3 Site-Specific Performance
- IARTS 3SP3 Scenography at Play
- IARTS 3IP3 Intercultural Performance Practices
- IARTS 3SD3 Structuring the Devised Performance
- IARTS 3CP3 Performance and Community Engagement
- IARTS 3MP6 Devised Theatre Production
- IARTS 3TB3 Devised Theatre Production: Research and Development
- IARTS 3VS3 Visual Storytelling
- IARTS 3CH3 Cinema History from WWII
- IARTS 3EC3 Early Cinema History
- IARTS 3AD3 Acting as Devising II
- IARTS 3MI3 Media Installation and Performance
- IARTS 3ID3 Integrated Dimensional Media Concentration
- IARTS 4AD3 Acting as Devising III
- IARTS 4SD3 Scripting the Devised Performance
- IARTS 4DF3 Scene Study in Digital Film

12 units

- IARTS 4CI2 Project Capstone Thesis

9 units

- From iARTS Investigations Course Lists B and C, or may include any of the following:

- ARTSSCI 3TR3 Trees Inquiry {AGREEMENT PENDING}
- CLASSICS 3H03 Archaic Greek Art
- CLASSICS 3Q03 Greek Sanctuaries
- CLASSICS 3S03 Pompeii, Herculaneum, and Ostia
- CMST 3S03 Television and Society {AGREEMENT PENDING}
- CMST 3Z03 Mobile Practices, Technologies and Art {AGREEMENT PENDING}
- FRENCH 3V03 Image & Knowledge Representation
- HISTORY 3DF3 Art and Politics in Second Empire France
- HISTORY 4LP3 The Cultural History of Paris., 1789-1914

21 units

- Modules and Electives

Honours Integrated Arts BFA with a Specialization in Studio

Admission

Enrolment in this program is limited and possession of the published minimum requirements does not guarantee admission. Selection is based on academic achievement but requires, as a minimum, *completion of IARTS Level 1 and a Grade Point Average of at least 5.0, with an average of at least 5.0 in* IARTS 1RR3 and 1RP3, *successful completion of both* IARTS 1BD3 *and* IARTS 1SS3*, and three additional units of the following:* IARTS 1CR3, 1TO3, 1HA3, 1SW3.

Notes:

4. iARTS Honours B.F.A. students with a specialization in Creative Critical Culture, Performance, or Studio must take a required number of courses from their chosen specialization, in addition to shared Perspectives courses and Project courses.

5. At each level, they must also take additional iARTS credits that may be from their chosen specialization or may be from the other specializations.

6. Before choosing courses, students should become familiar with prerequisites that will determine course selection in the subsequent year(s).

Requirements

120 units total

30 units

IARTS BFA level 1

6 units

- IARTS 2RR3 Project Development 2
- IARTS 2RP3 Project Production 2

6 units

- IARTS 2PC3 Perspectives C: Arts in the Community
- IARTS 2PD3 Perspectives D: Arts Across Disciplines

9 units

- IARTS 2CD3 Contemporary Approaches to Drawing Practices
- IARTS 2CP3 Contemporary Approaches to Painting Practices
- IARTS 2MP3 Contemporary Approaches to Print Media Practices
- IARTS 2SP3 Contemporary Approaches to Sculpture Practices
- IARTS 2ER3 Environmentally Responsible Art
- IARTS 2EP3 3D and Expanded Practices
- IARTS 2DP3 Digital Practices

3 units

- From iARTS Investigations Course List A, or may include any of the following:

- HISTORY 2DF3 Art and Revolution in France, 1789-1914
- CLASSICS 2B03 Greek Art
- CLASSICS 2C03 Roman Art
- MUSIC 2A03 Music of the World's Cultures
- MUSIC 2F03 Music for Film and Television
- MUSIC 2II3 Popular Music in North America and the United Kingdom: Post-World War II
- MUSIC 2TT3 Broadway and the Popular Song
- MUSIC 2U03 Jazz

6 units

- IARTS 3RC6 Project Production and Development 3

3 units

- IARTS 3PE3 Perspectives E: Arts in Society; Equity and Inclusion 12 units

12 units

- IARTS 3BA3 Book Arts
- IARTS 3CE3 Concentrated Study Ceramics

- IARTS 3FO3 Concentrated Study Foundry
- IARTS 3IN3 Concentrated Study Intaglio
- IARTS 3LI3 Concentrated Study Lithography
- IARTS 3OE3 Field Work: On-Site Explorations
- IARTS 3ID3 Integrated Dimensional Media Concentration
- IARTS 3IM3 Integrated Media Concentration
- IARTS 3MI3 Media Installation and Performance
- IARTS 3BF3 Photography Beyond the Frame
- IARTS 3ND3 New Directions in Painting/Drawing
- IARTS 3SP3 Scenography at Play
- IARTS 3VS3 Visual Storytelling

12 units

- IARTS 4CI2 Project Capstone Thesis

12 units

- From iARTS Investigations Course Lists B and C, or may include any of the following:

- ARTSSCI 3TR3 Trees Inquiry {AGREEMENT PENDING}
- CLASSICS 3H03 Archaic Greek Art
- CLASSICS 3Q03 Greek Sanctuaries
- CLASSICS 3S03 Pompeii, Herculaneum, and Ostia
- CMST 3S03 Television and Society {AGREEMENT PENDING}
- CMST 3Z03 Mobile Practices, Technologies and Art {AGREEMENT PENDING}
- FRENCH 3V03 Image & Knowledge Representation
- HISTORY 3DF3 Art and Politics in Second Empire France
- HISTORY 4LP3 The Cultural History of Paris., 1789-1914

21 units

- Modules and Electives

Combined Honours in Integrated Arts and Another Subject (B.A.)

Admission

Completion of any Level 1 program and a Grade Point Average of at least 5.0 including successful completion of either IARTS 1PA3 or IARTS 1PB3, *and a minimum grade of C in one course from the following list*: IARTS 1HA3, IARTS 1SW3, IARTS 1CR3, IARTS 1TO3, IARTS 1BD3, IARTS 1SS3.

Notes

1. All iARTS students will receive exposure to a range of arts disciplines throughout their four years of study. Students may choose to develop a specialization in Studio, Performance, or Creative Critical Culture, or complete their degree without a specialization.

2. Students wanting to take iARTS with a specialization in Studio, Performance, or Creative Critical Culture, should consult the calendar entry for their chosen specialization.

3. Before choosing courses, students should become familiar with prerequisites that will determine course selection in the subsequent year(s).

4. Students may apply in Level III to enroll in 6 units of Level IV iARTS Capstone Project, but it is not a requirement of the BA.

Requirements

120 units total

30 units

from the Level I program completed prior to admission into the program

3 units

- IARTS 2PC3 Perspectives C: Arts in the Community
- IARTS 2PD3 Perspectives D: Arts Across Disciplines

9 units

- From iARTS Investigations Course List A, or may include any of the following:

- HISTORY 2DF3 Art and Revolution in France, 1789-1914
- CLASSICS 2B03 Greek Art
- CLASSICS 2C03 Roman Art
- MUSIC 2A03 Music of the World's Cultures
- MUSIC 2F03 Music for Film and Television
- MUSIC 2II3 Popular Music in North America and the United Kingdom: Post-World War II
- MUSIC 2TT3 Broadway and the Popular Song
- MUSIC 2U03 Jazz

3 units

- IARTS 3PE3 Perspectives E: Arts in Society; Equity and Inclusion

12 units

- From iARTS Investigations Course List B, or may include any of the following:

- ARTSSCI 3TR3 Trees Inquiry {AGREEMENT PENDING}
- CLASSICS 3H03 Archaic Greek Art
- CLASSICS 3Q03 Greek Sanctuaries
- CLASSICS 3S03 Pompeii, Herculaneum, and Ostia
- CMST 3S03 Television and Society {AGREEMENT PENDING}
- CMST 3Z03 Mobile Practices, Technologies and Art {AGREEMENT PENDING}
- FRENCH 3V03 Image & Knowledge Representation
- HISTORY 3DF3 Art and Politics in Second Empire France

- HISTORY 4LP3 The Cultural History of Paris., 1789-1914

3 units

- IARTS 4PF3 Perspectives F: Arts in Society; Seminar and Independent Research

6 units

- From iARTS Investigations Course List C, or may include the following:
- IARTS 4CO6 Thesis Project (6 units) (on application entry)

36 units

- courses specified for the other subject

18 units

- Modules and Electives

iARTs COURSE DESCRIPTIONS

{Blue highlight = new course}

Level I

Level I Perspectives Courses

IARTS 1PA3 Perspectives A: Arts in Society; Social Constructions of Class, Race and Gender
By means of hands-on creation and critical analysis of case studies in performance, theatre, film and visual arts, students will develop skills in formal analysis and investigate how the arts can both challenge and perpetuate constructions of class, race and gender.
Two-hours lecture 1-hour tutorial
Prerequisite(s): None
Antirequisite(s): None
Cross-list(s): None

IARTS 1PB3 Perspectives B: Arts in Society; Technology and the Environment
By means of both hands-on creation and critical analysis of case studies in performance, theatre, film and visual art, students develop skills in formal analysis and investigate issues of technology and the environment in the arts within the context of industrial capitalism and the climate crisis.
Two-hours lecture 1-hour tutorial
Prerequisite(s): None
Antirequisite(s): None
Cross-list(s): None

Level I Project Courses

IARTS 1RR3 Project Development 1
Introduction to the techniques and principles of research-creation practice. Students will learn how to instigate material and embodied arts projects that integrate theory and practice and intersect with more traditional forms of social and academic research.
3 hours studio
Prerequisite(s): Registration in level 1 of the BFA iARTS program
Antirequisite(s): None
Corequisite(s): WHMIS 1A00 if not already completed; successful completion of WHMIS is required prior to studio work
Cross-list(s): None

IARTS 1RP3 Project Production 1
Building on skills and concepts introduced in IARTS 1RR3, this course guides students through the steps of creating research-creation arts projects of their own devising, working alone or in collaboration with other students.
3 hours studio
Prerequisite(s): Registration in level 1 of the BFA iARTS program
Antirequisite(s):
Corequisite(s): WHMIS 1A00 if not already completed; successful completion of WHMIS is required prior to studio work
Cross-list(s): None

Level I Investigations Courses

IARTS 1HA3 Introduction to Histories of the Arts
This course examines how studies of the arts have responded to recent social changes, evolving beyond 19th century Eurocentric bias, and resituates arts histories in the diverse and complex contexts of our contemporary world.
Three hours lecture
Prerequisite(s): None
Antirequisite(s): None
Cross-list(s): None

IARTS 1BD3 2D Practices in Art
This course explores various 2D materials and practices as well as observation-based studio activities to develop critical perception and understanding of visual information and phenomena related to art practice.
Two hours studio; 1 hour lecture
Prerequisite(s): None
Antirequisite(s): None
Corequisite(s): WHMIS 1A00 if not already completed; successful completion of WHMIS is required prior to studio work
Cross-list(s): ART 1OS3

IARTS 1CR3 Self, Society and Change: Performance Theories in Action
Through lectures and studio workshops, students explore core theories central to performance arts practice that also give insight into the multiple ways social identities are constructed.
Two hours studio; 1 hour lecture
Prerequisite(s): None
Antirequisite(s): None
Corequisite(s): WHMIS 1A00 if not already completed; successful completion of WHMIS is required prior to studio work

Cross-list(s): None

IARTS 1SW3 Working in the Arts Today
This course examines how the social, economic, political, and cultural contexts of practising arts have changed due to the global changes of the last two centuries, and the implications of these changes for cultural workers today.
Three hours lecture
Prerequisite(s): None
Antirequisite(s): None
Cross-list(s): None

IARTS 1TO3 Perspectives and Possible Worlds: Theatre, Performance, and Society
Theatre and performance art practitioners create possible worlds that reflect and refract the social contexts in which they live. Students explore how different approaches to theatre and performance design create perspectives that can affirm or challenge normative social structures.
Two hours lecture; 1 hour tutorial
Prerequisite(s): None
Cross-list: THTRFLM 1T03
Corequisite(s): WHMIS 1A00 if not already completed; successful completion of WHMIS is required prior to studio work
Antirequisite(s): None

IARTS 1SS3 3D Practices in Art
This course facilitates the development of tacit knowledge, intuitive judgment, perception and theoretical understanding through direct material engagement with metals, plaster, clay, fibres, and use of fabrication technologies.
Two hours studio; 1 hour lecture
Prerequisite(s): None
Cross-list(s): ART 1DM3
Corequisite(s): WHMIS 1A00 if not already completed; successful completion of WHMIS is required prior to studio work
Antirequisite(s): None

Level II

Level II Perspectives Courses

IARTS 2PC3 Perspectives C: Arts in the Community
Exploring historical and contemporary case studies of arts-based research in the community, this course combines hands-on creative practice with research and analysis to provide students with skills to critically evaluate and effectively design community-based arts projects.
Two-hours lecture 1-hour tutorial
Prerequisite(s): Registration in Level II or above of any program
Antirequisite(s): None
Cross-list(s): None

IARTS 2PD3 Perspectives D: Arts Across Disciplines
Exploring historical and contemporary examples of interdisciplinary projects, this course combines hands-on creative practice with research and analysis of case studies in Arts and Microbiology, Arts and Engineering, Arts and Neuroscience, Arts and the Health Sciences and Arts and the Life Sciences.
Two-hours lecture 1-hour tutorial
Prerequisite(s): Registration in Level II or above of any program
Antirequisite(s): None
Cross-list(s): None

Level II Project Courses

IARTS 2RR3 Project Development 2
Building on strategies introduced in IARTS 1RR3 and IARTS 1RP3, this intermediary course teaches students how to arrive at concepts and criticality in the arts through an ongoing cyclical process of exploring resources, making and devising, and critically evaluating.
Three hours studio
Prerequisite(s): Registration in IARTS BFA Level II, IARTS 1RR3, IARTS IRP3
Antirequisite(s): None
Corequisite(s): None
Cross-list(s): None

IARTS 2RP3 Project Production 2
Building on the project research they conducted in IARTS 2RR3, students will work individually and in groups to produce a small-scale performance or exhibition.
Three hours studio

Prerequisite(s): Registration in IARTS BFA Level II, IARTS 1RP3, IARTS 2RR3
Antirequisite(s): None
Corequisite(s): None
Cross-list(s): None

Level II Investigations Courses

IARTS 2AD3 Acting as Devising I
Students work in studio to explore how the actor's creative process reflects and challenges the norms that structure contemporary social relationships.
Prerequisite(s): IARTS 1CR3 and registration in level II or above of any iArts program; or registration in any Theatre and Film program
Cross-list(s): THTRFLM 2AA3
Corequisite(s): WHMIS 1A00 if not already completed; successful completion of WHMIS is required prior to studio work
Cross-list(s): None

IARTS 2AS3 Art and Visual Culture in South and East Asia
An introduction to aspects of the history of the arts in South and East Asia from antiquity to modern times, highlighting the impact of cultural exchange and diversity.
Three hours lecture
Prerequisite(s): Registration in Level II or above
Antirequisite(s):
Cross-list(s): ARTHIST 2Z03

IARTS 2CC3 Performance Culture in Canada
An introduction to the history and contemporary practice of performance in Canada including examination of indigenous performance, analysis of the Canadian theatre economy and theatrical institutions, with critical reflection on representative plays, performances, and productions.
Three hours lecture
Prerequisite(s): Registration in Level II or above
Antirequisite(s): None
Cross-list(s): None

IARTS 2CD3 Contemporary Approaches to Drawing Practices
This course provides insight into the varied functions of drawing including expressive purpose, communication, information organization, idea synthesis and drawing as a form of thinking. A variety of media and hybrid approaches are included.
Prerequisite(s): IARTS 1BD3
Antirequisite(s): None
Cross-list(s): ART 2DG3

IARTS 2DE6 Devised Performance Processes (6 units)
Students learn foundational workshop practices for the devising of live performances integrating acting exercises, games, and design experimentation.
2 two-hour studios; two terms
Prerequisite(s): Registration level II or above of any iArts program; or registration in level II Multimedia
Antirequisite(s): THTRFLM 2DP3 and THTRFLM 2BB3
Corequisite(s): WHMIS 1A00 if not already completed; successful completion of WHMIS is required prior to studio work
Cross-list(s): None

IARTS 2DP3 Digital Practices
Comprehensive introduction to digital image-making in the context of artistic and creative practice. Students will develop essential technical and conceptual skills in digital photography, video/film-making, and/or sound recording. Limited access to equipment will be available, but students are encouraged to provide their own digital SLR cameras with manual control capabilities, and a tripod. No previous background required.
Prerequisite(s): IARTS 1SS3 or IARTS 1BD3
Antirequisite(s): None
Cross-list(s): ART 2DP3

IARTS 2EP3 3D and Expanded Practices
This course develops spatial and sensory processes through critical spatial, material and methodological investigations, site responsive work, interactive and sensorial explorations, time-based and digitally mediated fabrication processes.
Prerequisite(s): IARTS 1SS3
Antirequisite(s): None
Cross-list(s): None

IARTS 2ER3 Environmentally Responsible Art
This course focuses on environmentally sustainable studio production to promote understanding of how materials are manufactured, why they are selected, how they are used and implications of disposal. A student-centered approach will determine media use and concepts.
Prerequisite(s):
Cross-list(s): ART 2ER3
Corequisite(s): WHMIS 1A00 if not already completed; successful completion of WHMIS is required prior to studio work
Antirequisite(s): None

IARTS 2FA3 Film Analysis

An introduction to an interrelated set of approaches to film study, all of which are defined by their attention to the filmic text and which provide students with a grasp of the fundamentals of film analysis.
Two lectures, plus one weekly film screening; one term
Prerequisite(s): Registration in Level II or above
Antirequisite(s):
Cross-list(s): THTRFLM 2FA3

IARTS 2ME3 Art and Visual Culture in the Middle East
An introduction to aspects of the history of the arts and visual cultures in the Middle East, with special attention to religious and cultural diversities and with an emphasis on intercultural transmissions.
Three hours lecture
Prerequisite(s): Registration in Level II or above
Antirequisite(s): None
Cross-list(s): None

IARTS 2MP3 Contemporary Approaches to Print Media Practices
This course develops techniques and aesthetic tactics of print media utilizing relief intaglio, planographic process such as: wood cut collagraph, image transfers, embossing, photo lithography.
Prerequisite(s): IARTS 1BD3
Antirequisite(s): None
Cross-list(s): ART 2PM3

IARTS 2OP3 Organizing Performance Space
Course runs in conjunction with 3MP6 Devised Theatre Production and students develop fundamental skills and awareness of the theatrical production process through experiential learning as assistant designers and stage managers on the program's Fall Major production.
Prerequisite(s): IARTS 1T03 and Registration in iArts program Level II or above; or registration in Level II Multimedia
Antirequisite(s): THTRFLM 3S06, THTRFLM 30P6, IARTS 3MP6
Corequisite(s): WHMIS 1A00 if not already completed; successful completion of WHMIS is required prior to studio work
Cross-list(s): None

IARTS 2CP3 Contemporary Approaches to Painting Practices
This course develops pictorial thought processes through the vocabulary of painting. Balanced emphasis is placed on expanding conceptual and practical knowledge utilizing a variety of pigments, mediums, supports, tools, alternative and hybrid approaches.
Prerequisite(s): IARTS 1BD3
Antirequisite(s): None
Cross-list(s): ART 2PG3

IARTS 2RV3 Reading Visual Culture
Visual culture encompasses all kinds of visual representations, in two, three, and four dimensions (time). This course exposes students to how to deconstruct any work using formal analysis without the aesthetic judgment previously embedded in Eurocentric and canonical values.
Three hours lecture
Prerequisite(s): Registration in Level II or above
Antirequisite(s):
Cross-list(s): ARTHIST 2A03

IARTS 2SE3 Performance Culture in South and East Asia
An introduction to aspects of the performance practices of South and East Asia from antiquity to modern times for both sacred and secular purposes.
Three hours lecture
Prerequisite(s): Registration in Level II or above
Antirequisite(s): None
Cross-list(s): None
Offered on rotation

IARTS 2SP3 Contemporary Approaches to Sculpture Practices
This course develops spatial thought processes, expanding conceptual and practical knowledge through critical investigations in mould making, casting, metal fabrication, woodworking, and the integration of methods and materials in relationship to space.
Prerequisite(s): IARTS 1SS3
Antirequisite(s): None
Cross-list(s): ART 2SC3

IARTS 2US3 Understanding Spatial Dynamics and Time in the Arts
This course examines some of the premises of how humans interact with the arts in different times and spaces, using all sensorial perceptions.
Three hours lecture
Prerequisite(s): Registration in Level II or above
Antirequisite(s): None
Cross-list(s): None

IARTS 2VA3 Art and Visual Culture in Canada
An introduction to the histories of art and visual culture in Canada from multiple perspectives: ~~the~~ Indigenous peoples, ~~the~~ early colonizers and settlers, ~~the~~ post-war immigrants, and ~~the~~ contemporary migrants.
Three hours lecture
Prerequisite(s): Registration in Level II or above
Antirequisite(s): None
Cross-list(s): None

Investigations Courses Planned for Future:

IARTS 2##3 Culture of Sound 1

IARTS 2##3 Culture of Moving Images 1

IARTS 2##3 Culture of Studio Practice 2

IARTS 2##3 Culture of Performance Practices

IARTS 2##3 Visual Culture and Ritual in Ancient Egypt

Level III

Level III Perspectives Courses

IARTS 3PE3 Perspectives E: Arts in Society; Equity and Inclusion
Examining arts projects that challenge systemic societal barriers based on race, gender, and ability, this course provides students with a working-knowledge of anti-oppression strategies in the arts. Students will learn skills in arts-based research, including literature reviews, field work and research-creation.
Prerequisite(s): Registration Level III or above of any program
Antirequisite(s): None
Cross-list(s): None

Level III Project Courses

IARTS 3RC6 Project Production and Development 3 (6 units)
This course focuses on research-creation through collaboration. Working collectively over two terms, students will integrate theory and practice through research and production of arts-based projects, gaining skills in collective decision-making, leadership and project management.
Prerequisite(s): Registration in iArts BFA Level III
Antirequisite(s): None
Cross-list(s): None

Level III Investigations Courses

IARTS 3AD3 Acting as Devising II
Students work in studio to extend their physical, vocal, and conceptual devising skills, and to deepen their understanding of how the actor's creative process reflects and challenges the norms that structure contemporary social relationships.
Two studios (four hours)
Prerequisite(s): IARTS 2AD3 or IARTS 2DE6
Antirequisite(s): THTRFLM 3XX3, THTRFLM 3WW3
Cross-list(s): None

IARTS 3BA3 Book Arts
This course integrates traditional techniques with contemporary concepts and applications of the artist book. Hand-made, imported and found paper will be utilized in a variety of formats

responding to student-centered concepts through sustainable practices, collaboration and exchange.
Hours?
Prerequisite(s): Registration in Level II or above
Cross-list(s): ART 3BA3
Offered on a rotation

IARTS 3CE3 Concentrated Study Ceramics
Focused on contemporary ceramics, this course fuses traditional techniques and alternative methods, from hand building to new technologies. Students explore ceramic history and processes related to industry, design, culture and society. A student-centered approach will determine concepts.
Prerequisite(s): IARTS 2SP3 or IARTS 2EP3 or permission from instructor
Antirequisite(s):
Cross-list(s): ART 3CC3

IARTS 3CH3 Cinema History from WWII
An exploration of narrative film from 1941 to the present day, incorporating a study of a variety of narrative cinema styles. Theoretical issues will include questions of cinema's relationship to other art forms, narrative, genre and authorship.
Two lectures, plus one weekly film screening; one term
One of ARTHIST 2FL3, 3FL3, THTRFLM 2FA3, 3FF3 or IARTS 3EC3 is recommended
Antirequisite(s): THTRFLM 3L03, CMST 3XX3, ARTHIST 3XX3
Cross-list(s): THTRFLM 3FF3

IARTS 3CP3 Performance and Community Engagement
Working in collaboration with the Student Success Centre, the class will conduct theatre workshops to gather material about the lived experiences of McMaster students. They will organize and analyze this, using it to create short scenes for a production of the Welcome Week play, IRIS.
Two studios (four hours), plus one lecture; one term
Prerequisite(s): Registration in Level III or above in any program
Antirequisite(s):
Cross-list(s): THTRFLM 3PC3

IARTS 3CW3 Colours of the World
Colours were extracted from flora, fauna and minerals for 1) making art, 2) ornamentation, and 3) symbolic/ritual purposes and visual communication in different cultures in early times. This course examines some aspects of the social, economic, political and cultural production of colours in different cultures.
Three hours lecture
Prerequisite(s): Registration in Level II or above
Antirequisite(s): HISTORY 3QA3
Cross-list(s): ARTHIST 3Q03

Cap: 120
Reserve Seats: 60

IARTS 3DA3 Arts and Spaces for Dwelling and Activities
This course opens up the possibilities of studying aspects of all kinds of dwellings for all kinds of activities: spaces for diverse worship, residential spaces, entertainment, punishment, health facilities and transportation hubs.
Three hours lecture
Prerequisite(s): Registration in Level II or above
Antirequisite(s): None
Cross-list(s): None
Cap: 120
Reserve Seats: 60
Offered on rotation

IARTS 3EC3 Early Cinema History
An introduction to the history of narrative film from its beginnings to the Second World War. It focuses on narrative cinema's development from aesthetic, social, technological and economic perspectives while also touching on a selected number of issues in film theory.
Two lectures, plus one weekly film screening; one term
Prerequisite(s): Registration in Level II or above
Antirequisite(s):
Cross-list(s): THTRFLM 3FF3, ARTHIST 3FL3

IARTS 3FI3 Fashion and Identity
This course examines aspects of the history of fashion and identity throughout the ages and across cultures, addressing issues related to changes in dress and their representation and the construction of identities in the broader social, political, economic and cultural context.
Three lectures; one term
Prerequisite(s): Registration in Level II or above
Antirequisite(s): ARTHIST 2R03
Cross-list(s): None
Cap: 120
Reserve Seats: 60

IARTS 3F03 Concentrated Study Foundry
This course offers an in-depth investigation of foundry practices, location and impact of method and material in history, industry and culture and society. Students will learn and apply metal casting processes focused on lost-wax in bronze and sand-casting in aluminum to student-centered concepts and personal artistic practice.
Prerequisite(s): IARTS 2SP3 or IARTS 2EP3 or permission from instructor
Antirequisite(s):
Cross-list(s): ART 3CF3

IARTS 3GE3 Contemporary Arts and the Global Economy
This course examines how the global economy impacts the production, distribution, and consumption of all arts, and related social relationships. Students will learn how globalized production disconnects the producer and the end-consumer by time and place, commodifying expressions of the arts.
Three hours lecture
Prerequisite(s): Registration in Level II or above
Antirequisite(s):
Cross-list(s):
Offered on rotation

IARTS 3IA3 Indigenous Art and Visual Culture in Canada
A survey of the visual art production from Indigenous Canadian communities since c. 1960 including: painting, sculpture, installation, film/video, performance and hip hop. The course focuses on First Nations' and Métis' artistic practices and examines how those are framed in the context of museums in the 21st century
Three hours; one term
Prerequisite(s): Registration in Level II or above in any program iARTS program or Indigenous Studies, or permission of the instructor
Antirequisite(s):
Cross-list(s): INDIGST 3F03, ARTHIST 3BB3

IARTS 3ID3 Integrated Dimensional Media Concentration
This course investigates points of intersection where installation, site-specific approaches, performance, time-based practice, kinetics and digital technologies interweave. Project concepts are student driven.
Prerequisite(s): any one of the following: IARTS 2CD3, IARTS 2CP3, IARTS 2SP3, IARTS 2EP3
Antirequisite(s):
Cross-list(s): ART 3ID3

IARTS 3IM3 Integrated Media Concentration
Student-centered concepts will direct investigations where print, drawing and paint media interweave to create hybrid practices. Environmental compatible materials and processes will be promoted.
Prerequisite(s): any one of the following: IARTS 2CD3, IARTS 2CP3, IARTS 2SP3, IARTS 2EP3
Antirequisite(s):
Cross-list(s): ART 3IM3

IARTS 3IN3 Concentrated Study Intaglio
This course focuses on intaglio processes exploring traditional concepts with alternative applications that have a safer impact and foot print for both the environment and user. Applications include photo etching, aquatint, hard and soft ground for hand drawing and material impressions.

Prerequisite(s): IARTS 2MP3
Antirequisite(s):
Cross-list(s): ART 3CI3

IARTS 3IP3 Intercultural Performance Practices
A critical exploration of the impact of globalization on performance practices across the globe from the 1960s to the present day, examining the benefits and challenges of intercultural exchange in the performance arts through a series of case studies.
Three hours lecture
Prerequisite(s): Registration in Level II or above
Antirequisite(s): None
Cross-list(s): None
Offered on rotation

IARTS 3LC3 Local Canadian Contemporary Art & Performance
An examination of local (GTA/Hamilton) artistic expressions and performances in different media, with on-site observation/participation. The course will connect students with local artists and engage with their work within the context of historical arts practices and local histories.
Three hours lecture
Prerequisite(s): Registration in Level II or above
Antirequisite(s): None
Cross-list(s): None
Offered on rotation

IARTS 3LI3 Concentrated Study Lithography
This course provides concentration on lithography processes without the use of Volatile Organic Compounds which methods of stone processing through hand-drawn images, multiple registration, photo image transfers on to stone, and Computer-to-Plate photo lithography.
Prerequisite(s): IARTS 2MP3
Antirequisite(s):
Cross-list(s): ART 3CL3

IARTS 3MI3 Media Installation and Performance
Studio production course exploring interdisciplinary approaches to site-specific and site-responsive media installation and performance. Students will work individually and in groups to develop a series of projects that will focus on activation and creative/critical engagement with public spaces and architecture through sound, image and performative gestures. There will be a particular emphasis on sensitivity to the implications of site and public interaction with works of this kind, as well as interdisciplinary approaches which integrate material-based research and exploration with digital modes of creative production
Four hours; one term
Prerequisite(s): WHMIS 1A00 (successful completion of WHMIS is required prior to any studio work)

Antirequisite(s):
Cross-list(s): ART 3IP3
Offered on rotation

IARTS 3MM3 Materials and Materiality
This course examines the impact of specific materials on artistic expressions across various time periods, places and cultural contexts. Students will be introduced to contemporary theories of materiality and the cultural and social implications of materials embedded in their physical properties.
Three hours lecture
Prerequisite(s): Registration in Level II or above
Antirequisite(s): None
Cross-list(s): None

IARTS 3MP6 Devised Theatre Production
Students will form the core artistic team for the School's November Major Production. Students wishing to register in this course must submit an application form to the School of the Arts by the end of April to guarantee consideration for the following year.
Eight hours (including two two-hour studios, one four-hour rehearsal), plus production hours; one term
Prerequisite(s): Registration in any iArts program and one of IARTS 2DE6 2AD3 or 2OP3; or registration in Level III Multimedia
Antirequisite(s): THTRFLM 3S03
Cross-list(s): THTRFLM 3S06

IARTS 3ND3 New Directions in Painting/Drawing
This course explores new directions and technologies that expand definitions of painting and drawing incorporating digital technologies, installations, urban interventions, and alternative spatial and material approaches
Prerequisite(s): any one of the following: IARTS 2CD3, IARTS 2CP3, IARTS 2SP3, IARTS 2EP3
Antirequisite(s):
Cross-list(s): ART 3PD3

IARTS 3OE3 Field Work: On-Site Explorations
This course investigates environments on and off campus to explore how visual data collection and place can inform research and creative production through drawing and mixed-media work. This course may be offered as a concentrated week-long session (e.g. camping excursion). Extra cost will apply.
Prerequisite(s): WHMIS 1A00 (successful completion of WHMIS is required prior to any studio work)
Antirequisite(s):
Cross-list(s): ART 3FW3

IARTS 3BF3 Photography Beyond the Frame

Studio production course exploring interdisciplinary/hybrid approaches to photographic practice beyond the presentation of standardized, two-dimensional printed images in the gallery/museum context. Students will develop a series of projects that focus on re-thinking the potential of the photographic image, capitalizing on existing/emerging technical developments, and expanding on avenues of presentation/dissemination. There will be a particular emphasis on interdisciplinary approaches which integrate material-based exploration with digital modes of creative production.
Prerequisite(s): WHMIS 1A00 (successful completion of WHMIS is required prior to any studio work) and registration in Level II of iARTS program or Multimedia program.
Antirequisite(s):
Cross-list(s): ART 3PB3
Offered on rotation

IARTS 3SD3 Structuring the Devised Performance
A practical study of the structural qualities and social impact of different dramatic forms and their use in scripting performances for specific audiences.
Studio (two hours), lecture and discussion (one hour); one term
Prerequisite(s): A grade of at least B- in IARTS 2DE6, 2AD3 or 2OP3; and registration in Level III or above of an iArts program
Antirequisite(s):
Cross-list(s): THRFLM 3SD3

IARTS 3SP3 Scenography at Play
Students develop performance pieces through set design, use of lights, sound, projections, and the manipulation of objects.
Prerequisite(s): Registration in an iArts Program at Level III
Antirequisite(s): None
Cross-list(s): None
Offered on rotation

IARTS 3SR3 Intercultural Arts Along the Silk Road
An examination of how both textual and material resources (including archaeological) reveal the pluralistic achievements in the arts by peoples of different cultures along the Silk Road and at different times. The emphasis will be on the intercultural transmission.
Three hours lecture
Prerequisite(s): Registration in Level III or above
Antirequisite(s): HISTORY 3ZA3
Cross-list(s): ARTHIST 3Z03
Offered on rotation

IARTS 3SS3 Site-Specific Performance
Studio exploration of performance in ready-made urban and rural spaces, focusing on the way that performance and performance art can shift public perspectives on the history, utility, and cultural significance of familiar spaces.

Three hours studio; one term
Prerequisite(s): one of the following: IARTS 2DE6 or IARTS 2AD3 or IARTS 2OP3
Antirequisite(s): None
Cross-list(s): None
Offered on rotation

IARTS 3TB3 Devised Theatre Production: Research and Development
Students will learn research, workshop and planning processes of public performance for a devised theatre production. This preparatory work leads to the main stage departmental production produced in the Fall term by IARTS3MP3. This course can be repeated.
Two studios (four hours)
Prerequisite(s): Registration in any iArts program level II or above; or registration in Level II Multimedia
Antirequisite(s):
Cross-list(s): THTRFLM 3PR3
Offered during the Spring/Summer term only.

IARTS 3VS3 Visual Storytelling
This course examines the theories underlying the visual aesthetics of cinema and theatre. These are analyzed alongside narrative structure and put into practice by students in projects.
Lectures and demonstrations (three hours); one term
Prerequisite(s): IARTS 2FA3
Antirequisite(s):
Cross-list(s): THTRFLM 3VS3

Level III Investigations Courses Planned for Future:

IARTS 3##3 Culture of Sound 2

IARTS 3##3 Culture of Moving Images 2

IARTS 3##3 Culture of Studio Practice 3

IARTS 3##3 Environmental Performance

IARTS 3PA3 Performance Art
A survey and practical study of performance art practices that specifically move beyond story-telling and rely heavily on the abstract, the visual, and the sonic.

IARTS 3DV3 Digital Video Arts
A survey and practical study of digital video-making that works primarily with conceptual rather than narrative forms. The class explores the artistic possibilities afforded by increased access to digital video enabled by mobile phones.

LEVEL IV

Level IV Perspectives Courses

IARTS 4PF3 Perspectives F: Arts in Society; Seminar and Independent Research
Guided by readings and in-class discussion, students will choose a specific research topic, and conduct independent research culminating in a major research paper. This course prepares students for graduate level seminars, writing and research expectations.
Prerequisite(s): IARTS 3PE3
Antirequisite(s): None
Cross-list(s): None

Level IV Project Courses

IARTS 4CI2 Project Capstone Thesis (12 units, two terms)
In this advanced research-creation course, students will research, manage, create and produce a major arts-based thesis project of their own devising, either alone or in collaboration with other students.
Prerequisite(s): Registration in Level IV iArts
Antirequisite(s): None
Cross-list(s): None

IARTS 4CO6 Thesis Project (6 units, two terms)
Students create and produce an arts-based project of their own devising, either alone or in collaboration with other students. This course runs concurrently with IARTS 4CI2.
Departmental consent is required.
Prerequisite(s): Enrolment in any Honours B.A. iARTS program; and successful application for entry.
Not open to students in IARTS BFA program.
Cross-list(s): None

Level IV Investigations Courses

IARTS 4AD3 Acting as Devising III
An advanced study of the actors' role in the devising process that builds on physical, vocal, and workshop techniques taught in Acting and Devising I and II. Students are required to produce a short but substantial piece of devised theatre either on their own or in collaboration with other students in the class.

Two studios (four hours)
Prerequisite(s): IARTS 3AD3, and enrolment in an iARTS program
Antirequisite(s): None
Cross-list(s): None

IARTS 4AE3 Art and the Environment
This seminar will enables students to launch a focused research project and presentation, both written and in person, on specific environmental impacts on specific aspects of the arts. For example, how does soil erosion in deserts impact on local artistic practices in contrast to similar practices in the Arctic?
Prerequisite(s): Registration at Level III or above of an iARTS program
Antirequisite(s): None
Cross-list(s): None
Offered on rotation

IARTS 4CE3 Concentrated Study Ceramics
This course is an advanced study of contemporary ceramic. Students will build on concepts and techniques and taught in IARTS 3CE3, working independently to fuse traditional techniques and contemporary concepts and hone their skills in ceramics.
Prerequisite(s): IARTS 3CE3, and enrolment in an iARTS program. Students completing an Interdisciplinary Minor in Archaeology may be given special permission to register in this course if space is available.
Antirequisite(s):
Cross-list(s): ART 4CC3

IARTS 4DF3 Scene Study in Digital Film
Students develop, write, shoot, and edit a short scene on digital video using foundational principles of narrative film-making.
Prerequisite(s): IARTS 3VS3, and enrolment in an iARTS program.
Antirequisite(s): None
Cross-list(s): None

IARTS 4DM3 Arts and Diasporic Migration
In this seminar students will launch a focused research project and presentation, both written and in person, on specific impacts of diasporic migration on specific aspects of the arts. For example, what is the relationship between an artist's ethnic, cultural and geographic origin and the artist's site of creative practice.
Prerequisite(s): Registration in Level III or above of an iARTS program
Antirequisite(s): None
Cross-list(s): None
Offered on rotation

IARTS 4IN3 Concentrated Study Intaglio

This course is an in-depth concentration on intaglio processes exploring traditional and alternative approaches of etching. Students will build on techniques and process taught in IARTS 3IN3, working independently to fuse traditional techniques and contemporary concepts and hone their skills in etching.
Prerequisite(s): IARTS 3IN3 and enrolment in an iARTS program
Antirequisite(s):
Cross-list(s): ART 4CI3

IARTS 4LI3 Concentrated Study Lithography
This course is an in-depth concentration on lithography processes without the use of Volatile Organic Compounds. Students will build on techniques and processes taught in IARTS 3LI3, working independently to fuse traditional techniques and contemporary concepts and hone their skills in lithography.
Prerequisite(s): IARTS 3LI3 and enrolment in an iARTS program.
Antirequisite(s):
Cross-list(s): ART 4CL3

IARTS 4SD3 Scripting the Devised Performance
Continuing the practical study of the structural qualities and social impact of different dramatic forms, and focusing on the detailed development of dialogue and sequences of action.
Prerequisite(s): IARTS 3SD3, and enrolment in an iARTS program.
Antirequisite(s): None
Cross-list(s): None

iARTS Electives **(not required)**

IARTS 1SL3 Acting Skills for Life and Work
Through lectures and studio acting exercises students develop physical awareness, non-verbal communication, the effective use of the voice, and spontaneous creative thinking. No previous acting experience required.
Two-hour studios, 1 hour lecture; one term
Not open to students in the IARTS BFA program.
Antirequisite(s): THTRFLM 1H03
Cross-list(s):
Cap: 100
Reserve Seats: 0

IARTS 1TI3 Making Art and Understanding Technology & Images
Creating art utilizing a range of media, including digital tools and creative research, students will gain an understanding of art, images and cultures of technology. No previous artistic experience is required.
3 hours
Not open to students in the IARTS BFA program.
Antirequisite(s): or enrolment in or completion of MMEDIA 2B06
Cross-list(s): ART 1TI3
Cap: 100
Reserve Seats: 0

IARTS 1UI3 Making Art and Understanding Images
Utilizing sketchbooks, collage, colour exercises and creative research, students will gain widely applicable skills in manipulating and analyzing the communicative power of images. No previous artistic experience is required.
3 hours
Not open to students in the IARTS BFA program.
Antirequisite(s):
Cross-list(s): ART 1UI3
Cap: 100
Reserve Seats: 0

IARTS 2AA3 - Introduction to the Practice of Art Therapy
An introduction to the practice of art therapy, with an overview of its history, the diversity of its applications within psychodynamic, solution focused, cognitive behavioural principles, embodiment theory, and its clinical implications including neuroscience, mindfulness, Post-traumatic Stress Disorder, and pain management.
Three hours lecture

Prerequisite(s): Registration in Level II or above of any program
Antirequisite(s):
Cross-list(s): ARTHIST 2AA3

IARTS 2MT3 Introduction to the Practice of Music Therapy
An introduction to the practice of music therapy, with an emphasis on the diversity of music therapy applications such as: bio-medical, psychoanalytical, behavioural and rehabilitation.
Three lectures; one term
Prerequisite(s): Registration in Level II or above
Antirequisite(s):
Cross-list(s): MUSIC 2MT3

IARTS 2MU3 - Introduction to Music Therapy Research
Current research papers will be explored in the fields of education, rehabilitation, neurology and mental health.
Three lectures; one term
Prerequisite(s): Registration in Level II or above. Completion of MUSIC 2MT3 is strongly recommended, but not required.
Antirequisite(s):
Cross-list(s): MUSIC 2MU3

Courses Offered by Other Programs

Classics, French and History Courses

(SoTA students may currently take these courses)

CLASSICS 2B03 Greek Art
The architecture, sculpture and painting of the Greek and Hellenistic world.
Three lectures; one term
Prerequisite(s): Registration in Level II or above of any program

CLASSICS 2C03 Roman Art
The architecture, sculpture, and painting of the Roman world.
Three lectures; one term
Prerequisite(s): Registration in Level II or above of any program

HISTORY 2DF3 Art and Revolution in France, 1789-1914
This course examines the intersections of visual culture and the political revolutions of 1789, 1830, 1848 and 1870, as well as stylistic innovations in art including Romanticism, Realism, Impressionism, Pointillism, Fauvism, and Cubism.
Lectures and discussion (three hours); one term
Prerequisite(s): Registration in Level II or above

CLASSICS 3H03 Archaic Greek Art
The formative period of Greek Art, from its rebirth after the Dark Ages to the Persian Wars (c. 1000-480 B.C.), and its relationship to the art of the Near East.
Three lectures; one term
Prerequisite(s): CLASSICS 2B03

CLASSICS 3Q03 Greek Sanctuaries
Ancient Greek sanctuaries and their social and political context. Topics will include architecture and art, as well as activities such as sacrifice, athletic games, healing, and oracular consultation.
Three lectures; one term
Prerequisite(s): Registration in Level II or above of any program
Cross-list(s): ARTHIST 3QQ3
Alternates with CLASSICS 3S03 (ARTHIST 3SS3)

CLASSICS 3S03 Pompeii, Herculaneum, and Ostia
The archaeology of three cities in Italy (Pompeii, Herculaneum, Ostia) will be examined, with a focus on urbanism, public space, and domestic architecture and decoration.
Three lectures; one term

Prerequisite(s): One of CLASSICS 1A03, 2B03, 2C03, 2LC3, or 2LD3 and registration in Level II or above of any program
Cross-list(s): ARTHIST 3SS3
Alternates with CLASSICS 3Q03 (ARTHIST 3QQ3).

FRENCH 3V03 Image and Knowledge Dissemination
A study of communicating knowledge through images in French culture, from the Middle Ages to the present.
Three hours; one term
Prerequisite(s): Six units of French above Level I, excluding FRENCH 2M06 A/B or 2Z06 A/B (or permission of the instructor)

HISTORY 3DF3 Art and Politics in Second Empire France
This course examines the intersections of politics and visual culture in France 1852-1870 and critical issues related to photography, painting, sculpture, printmaking, architecture and the Universal Expositions of 1855 and 1867.
Lectures and discussion (three hours); one term
Prerequisite(s): Registration in Level II or above
Antirequisite(s): ARTHIST 3J03

HISTORY 4LP3 The Cultural History of Paris., 1789-1914
Topics to be examined include: developments in architecture and city planning; the conservation of historic buildings and monuments; cultural institutions such as museums and art exhibitions; and the impact of gender, race and economics on experiences and concepts of identity in France's capital.
Seminar (two hours); one term
Prerequisite(s): Registration in Level III or IV of any Honours program in History or Art History, or IARTS program

Music Courses

(open enrolment)

MUSIC 2A03 Music of the World's Cultures
A survey of music traditions of non-European cultures, e.g., far Eastern, Indian, African.
Three lectures; one term
Prerequisite(s): Registration in Level II or above

MUSIC 2F03 Music for Film and Television
An examination of how music functions to help create meanings in film and television programs. Examples will be drawn from throughout the history of film and television.
Three lectures; one term
Prerequisite(s): Registration in Level II or above

Antirequisite(s): CMST 2T03, THTRFLM 2T03

MUSIC 2II3 Popular Music in North America and the United Kingdom: Post-World War II
Popular music, its social meanings, and media and technology interactions, from rock-and-roll to now. Topics include rhythm and blues (Chuck Berry), pop (Madonna), metal (Led Zeppelin.)
Three lectures; one term
Prerequisite(s): Registration in Level II or above
Antirequisite(s): CMST 2R03

MUSIC 2TT3 Broadway and the Popular Song
An historical examination of the development of English-language musical theatre in the twentieth century. Attention will be paid to the history of American popular song and its impact on the genre.
Three lectures; one term
Prerequisite(s): Registration in Level II or above
Antirequisite(s): THTRFLM 2TT3

MUSIC 2U03 Jazz
An historical survey of jazz, focusing on selected performers and arrangers.
Two lectures, one tutorial; one term
Prerequisite(s): Registration in Level II or above

Courses currently under discussion

CMST 3S03 Television and Society {AGREEMENT PENDING}
This course will examine television as a socio-cultural and political phenomenon. This course will involve theoretical and empirical analysis of the television industry, production, texts and genres, and audiences. Major debates in television studies will be addressed.
Three hours; one term
Prerequisite(s): Registration in Level III or above of a program in Communication Studies or Multimedia

CMST 3Z03 Mobile Practices, Technologies and Art {AGREEMENT PENDING}
Mobility is explored as a concept informing communication technology development, the notion of the ideal consumer/citizen, and as an artistic device. Assignments explore mobility as a trope enabling expression, innovation or resistance via textual and aesthetic interventions.
Lectures and tutorial (three hours); one term
Prerequisite(s): Registration in Level III or above of a program in Communication Studies or Multimedia

ARTSSCI 3TR3 Trees Inquiry {AGREEMENT PENDING}
Inspired by the trees on McMaster's campus, this course examines trees and their significance through a number of different lenses and from a variety of discipline perspectives: biology;

colonial and economic histories; visual, material, and performing arts practices; psychology; indigenous and environmental studies; poetry and prose.
Three hours; one term
Prerequisite(s): Registration in Level II or above of the Arts & Science Program.

WOMENST 3BB3 Women and Visual Culture
Students will explore ideas about representation, spectatorship and production in relation to issues of social difference, such as gender, race and class. Emphasis is on visuality in forms such as film, video, television, advertising, et cetera.
Prerequisite(s): Registration in Level III or above; and one of ARTHIST 2A03, CMST 2BB3, 2G03, 2H03, THTRFLM 1T03, 2FA3, WOMENST 1A03, IARTS 1HA3, IARTS 1CR3, 1T03, 1PA3
Antirequisite(s): THTRFLM 3P03
Cross-list(s): WOMENST 3BB3, THTRFLM 3P03
This course is administered by Women's Studies.

Courses we hope to include in the future

INDIGST 3EE3 Indigenous Representations in Film
A study of how Indigenous peoples and narratives have been represented in film. We explore how the historical and sociopolitical are informed through depictions of Indigenous peoples, cultures and places in cinema.
3 hours; lecture and seminar: one term.
Prerequisite(s): Three units of Level II Indigenous Studies or permission of the Instructor.

INDIGST 3G03 Indigenous Creative Arts and Drama: Selected Topics
The creative processes of Indigenous cultures are studied through the examination of selected forms of artistic expression, which may include art, music, dance and/or drama.
Lectures and seminars (three hours); one term
Prerequisite(s): Three units of Level II Indigenous Studies or permission of the instructor

NOTE: this list can grow a great deal

Modules

1-Unit Modules

IARTS MOD1 Special Topics in Creative Critical Culture; Artistic Production; Performance
Special Topics modules are short, intensive, 1-unit courses with a focus on hands-on practice, introducing students to specialized skills and concepts in iARTS.
Times and durations vary from module to module
Prerequisites: Enrolment in Level I or above of any program

note: Special Topics Modules may include (but are not limited to) the following:

- Book Arts
- Artistic Production through Laser Cutting
- Artistic Production through 3D Printing
- Artistic Production through Large Format Printing
- Colours of the World (hands on module)
- Visual Literacy (hands on module)
- Spatial Dynamics (hands on module)
- Understanding Lighting Design
- Understanding Sound Design
- Working with a Camera
- Video Editing Basics
- Video Projection Basics

rolled into another course
green= on rotation

SOTA COURSES CONVERTED TO IARTS COURSES

Type	IARTS CODES		SOTA CODES
Studio/ART	IARTS 1SS3	3D Practices in Art	ART 1DM3
Studio/ART	IARTS 1BD3	2D Practices in Art	ART 1OS3
Studio/ART	IARTS 2CD3	Contemporary Approaches to Drawing Practice	ART 2DG3
Studio/ART	IARTS 2DP3	Digital Practices	ART 2DP3
Studio/ART	IARTS 2ER3	Enviromentally Responsible Art	ART 2ER3
Studio/ART	IARTS 2CP3	Contemporary Approaches to Painting Practices	ART 2PG3
Studio/ART	IARTS 2MP3	Contemporary Approaches to Print Media Practices	ART 2PM3
Studio/ART	IARTS 2SP3	Contemporary Approaches to Sculpture Practice	ART 2SC3
Studio/ART	IARTS 3BA3	Book Arts (on rotation)	ART 3BA3
Studio/ART	IARTS 3CE3	Concentrated Study Ceramics	ART 3CC3
Studio/ART	IARTS 3FO3	Concentrated Study Foundry	ART 3CF3
Studio/ART	IARTS 3IN3	Concentrated Study Intaglio	ART 3CI3
Studio/ART	IARTS 3LI3	Concentrated Study Lithography	ART 3CL3
Studio/ART	IARTS 3OE3	Field Work: On-Site Explorations	ART 3FW3
Studio/ART	IARTS 3ID3	Integrated Dimensional Media Concentration	ART 3ID3
Studio/ART	IARTS 3IM3	Integrated Media Concentration	ART 3IM3
Studio/ART	IARTS 3MI3	Media Installation and Performance (on rotation)	ART 3IP3
Studio/ART	IARTS 3PF3	Photography Beyond the Frame (on rotation)	ART 3PB3
Studio/ART	IARTS 3ND3	New Directions in Painting/Drawing	ART 3PD3
Studio/ART	IARTS 4CE3	Concentrated Study Ceramics (rolled into 3CE3)	ART 4CC3
Studio/ART	IARTS 4IN3	Concetrated Study Intaglio (rolled into 3IN3)	ART 4CI3
Studio/ART	IARTS 4LI3	Concetrated Study Lithography (rolled into 3LI3)	ART 4CL3
CCC/ARTHIST	IARTS 2RV3	Reading Visual Culture	ARTHIST 2A03
CCC/ARTHIST	IARTS 3FI3	Fashion and Identity	ARTHIST 2R03
CCC/ARTHIST	IARTS 2AS3	Art and Visual Culture in South and East Asia	ARTHIST 2Z03
CCC/ARTHIST	IARTS 3IA3	Indigenous Art and Visual Culture in Canada	ARTHIST 3BB3
CCC/ARTHIST	IARTS 3CW3	Colours of the World	ARTHIST 3Q03
CCC/ARTHIST	IARTS 3SR3	Intercultural Arts Along the Silk Road (on rotation)	ARTHIST 3Z03
Performance/THTRFLM	IARTS 2AD3	Acting as Devising I	THTRFLM 2AA3
Performance/THTRFLM	IARTS 2FA3	Film Analysis	THTRFLM 2FA3
Performance/THTRFLM	IARTS 3EC3	Early Cinema History	THTRFLM 3FF3
Performance/THTRFLM	IARTS 3CH3	Cinema History from WWII	THTRFLM 3L03
Performance/THTRFLM	IARTS 3WV3	Women and Visual Culture	THTRFLM 3P03
Performance/THTRFLM	IARTS 3CP3	Performance and Community Engagement	THTRFLM 3PC3
Performance/THTRFLM	IARTS 3TB3	Text Based Devising: Research and Development (on rotation)	THTRFLM 3PR3
Performance/THTRFLM	IARTS 3MP6	Major Production	THTRFLM 3S06
Performance/THTRFLM	IARTS 3SD3	Structuring the Devised Performance	THTRFLM 3SD3
Performance/THTRFLM	IARTS 3VS3	Visual Storytelling	THTRFLM 3VS3

NEW IARTS COURSES

type	IARTS CODES	
CCC (Investigations)	IARTS 1HA3	Introduction to Histories of the Arts
CCC (Investigations)	IARTS 1SW3	Working in the Arts Today
CCC (Investigations)	IARTS 2CC3	Performance Culture in Canada
CCC (Investigations)	IARTS 2ME3	Art and Visual Culture in the Middle East
CCC (Investigations)	IARTS 2US3	Understanding Spatial Dynamics and Time in the Arts
CCC (Investigations)	IARTS 2VA3	Art and Visual Culture in Canada
CCC (Investigations)	IARTS 3DA3	Arts and Spaces for Dwelling and Activities (on rotation)
CCC (Investigations)	IARTS 3GE3	Contemporary Arts and the Global Enconomy (on rotation)
CCC (Investigations)	IARTS 3LC3	Local Canadian Contemporary Art and Performance (on rotation)
CCC (Investigations)	IARTS 4AE3	Art and the Environment (on rotation)
CCC (Investigations)	IARTS 4DM3	Arts and Diasporic Migration (on rotation)
Performance (Investigations)	IARTS 1CR3	Self, Society and Change: Performance Theories in Action
Performance (Investigations)	IARTS 1TO3	Perspectives and Possible Worlds: Theatre, Performance, and Society
Performance (Investigations)	IARTS 2DE6	Devised Performance Processes
Performance (Investigations)	IARTS 2OP3	Organizing Performance Space
Performance (Investigations)	IARTS 2SE3	Performance Culture in South and East Asisa (on rotation)
Performance (Investigations)	IARTS 3AD3	Acting as Devising II
Performance (Investigations)	IARTS 3IP3	Intercultural Performance Practices (on rotation)
Performance (Investigations)	IARTS 3SP3	Scenography at Play (on rotation)
Performance (Investigations)	IARTS 3SS3	Site Specific Theatre
Performance (Investigations)	IARTS 4AD3	Acting as Devising III (rolled into IARTS 3AD3)
Performance (Investigations)	IARTS 4DF3	Scene Study in Digital Film
Performance (Investigations)	IARTS 4SD3	Scripting the Devised Performance
Perspectives (all IARTS)	IARTS 1PA3	Perspectives A: Arts in Society; Social Constructions of Race and Gender
Perspectives (all IARTS)	IARTS 1PB3	Perspectives B: Arts in Society, Technology and Environment
Perspectives (all IARTS)	IARTS 2PC3	Perspectives C: Arts and Community

Perspectives (all IARTS)	IARTS 2PD3	Perspectives D: Arts Across Disciplines
Perspectives (all IARTS)	IARTS 3PE3	Perspectives E: Arts in Society; Equity and Inclusion
Perspectives (all IARTS)	IARTS 4PF3	Perspectives F: Arts in Society Seminar
Studio (Investigations)	IARTS 2EP3	3D and Expanded Practice
Studio (Investigations)	IARTS 3MM3	Materials and Materiality
Project (BFA)	IARTS 1RR3	Project Development 1
Project (BFA)	IARTS 1RP3	Project Production 1
Project (BFA)	IARTS 2RR3	Project Development 2
Project (BFA)	IARTS 2RP3	Project Production 2
Project (BFA)	IARTS 3RC6	Project Production and Development 3 (6 units)
Project (BFA)	IARTS 4C12	Project Capstone Thesis (12 units)
Project (BA)	IARTS 4CO6	Thesis Project (rolled into 4C12)
Module	IARTS MOD1	Special Topics in Creative Critical Culture; Artistic Production; Performance
Module	IARTS MOD1	Special Topics in Creative Critical Culture; Artistic Production; Performance
Module	IARTS MOD1	Special Topics in Creative Critical Culture; Artistic Production; Performance
Module	IARTS MOD1	Special Topics in Creative Critical Culture; Artistic Production; Performance
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Module	IARTS MOD1	Special Topics in Creative Critical Culture; Artistic Production; Performance
Module	IARTS MOD1	Special Topics in Creative Critical Culture; Artistic Production; Performance
Module	IARTS MOD1	Special Topics in Creative Critical Culture; Artistic Production; Performance
Module	IARTS MOD1	Special Topics in Creative Critical Culture; Artistic Production; Performance
Module	IARTS MOD1	Special Topics in Creative Critical Culture; Artistic Production; Performance
Module	IARTS MOD1	Special Topics in Creative Critical Culture; Artistic Production; Performance

DISCONTINUED SOTA COURSES

type	**IARTS CODES**	
ART	ART 1MI3	Material Investigations and Concepts
ART	ART 1SI3	Studio Investigations
ART	ART 2IS3	Independent Studio Methods
ART	ART 3BA3	Concentrated Study -Book Arts (on rotation) (becomes module)
ART	ART 3CE3	Community Exhibitions (on rotation)
ART	ART 3D03	Practical Issues
ART	ART 3GS6 A/B	Guided Studio Practice
ART	ART 3J03	Concentrated Study - Collaborative Community Projects (on rotation)
ART	ART 4AR3	Advanced Research and Presentation Strategies
ART	ART 4AS6 A/B	Advanced Studio Production and Critical Discourse
ART	ART 4CA3	20th Century and Contemporary Art Practices: How Artists Think, Act and Engage (on rotation)
ART	ART 4EP3	Exhibition Preparation and Documentation
ART	ART 2AT3	Art Today
ARTHIST	ARTHIST 1A03	World Art and Cultural Heritage I
ARTHIST	ARTHIST 1AA3	World Art and Cultural Heritage II
ARTHIST	ARTHIST 2I03	Renaissance Art (on rotation)
ARTHIST	ARTHIST 2J03	Architecture from the Pre-Romanesque to Palladio (on rotation)
ARTHIST	ARTHIST 2S03	The History of Printing and Printmaking (on rotation)
ARTHIST	ARTHIST 2T03	Art, Theatre and Music in the Enlightenment (on rotation)
ARTHIST	ARTHIST 2Y03	Early Islamic Art to the Middle Ages (on rotation)
ARTHIST	ARTHIST 3B03	Aspects of Canadian Art (on rotation)
ARTHIST	ARTHIST 3D03	Seventeenth-Century Art (on rotation)
ARTHIST	ARTHIST 3I03	Italian Painting and Sculpture 1400-1580 (on rotation)
ARTHIST	ARTHIST 3JA3	The History of Art 1970 to the Present (on rotation)
ARTHIST	ARTHIST 3P03	Issues in Studio Criticism (on rotation)
ARTHIST	ARTHIST 4AA3	Seminar in Contemporary Art and Visual Culture (on rotation)
ARTHIST	ARTHIST 4C03	Seminar in Art and Visual Culture 900-1400 (on rotation)
THTRFLM	THTRFLM 1T03	Introduction to Theatre, Cinema and Society
THTRFLM	THTRFLM 2BB3	Designing as Devising
THTRFLM	THTRFLM 2CP3	Culture and Performance
THTRFLM	THTRFLM 2DP3	Devising Processes
THTRFLM	THTRFLM 3AA3	Modernist Drama and Theatre in Europe (on rotation)
THTRFLM	THTRFLM 3OP6 A/B	Organizing the Performance Space
THTRFLM	THTRFLM 3U03	Pleasure and Critique in Dramatic Performance (on rotation)
THTRFLM	THTRFLM 3N03	Artist's Alterantive Film and Video (on rotation)
THTRFLM	THTRFLM 3WW3	Acting and the Voice: Devising from Classical Texts (on rotation)
THTRFLM	THTRFLM 3XX3	Acting and the Body: Devising Physical Theatre (on rotation)
THTRFLM	THTRFLM 4A06 A/B	Theatre and Society: A Performance Project
THTRFLM	THTRFLM 4C03	Performance and Society (on rotation)
THTRFLM	THTRFLM 4D03	Theatre, Society and Early Cinema (on rotation)
THTRFLM	THTRFLM 4E03	Cinema and Society

APPENDICES 2-6

School of the Arts
Art, Art History, Music and Theatre & Film Studies Programs
Administrative Structure *revised 2016*

Preamble

The primary function of the Administrative Structure that governs the School is to support and foster a collegial setting for the areas of Art, Art History, Music and Theatre & Film Studies to co-exist in an environment where each is encouraged to recognize and build on its strengths and to realize new potential through the combined creative expertise of the disciplines. Through governance committed to equity and consultative, transparent processes, the School strives for excellence, innovation and distinction.

The School of the Arts will organize itself, conduct its meetings, and observe quorum[1] in accordance with the Faculty of Humanities By-Laws. Voting members of the School shall be: all full-time faculty members at the rank of Lecturer and above (including CLA, Teaching-Track, Tenure-Track, Permanent, and Tenured faculty). Voting members shall, hereafter, be referred to as the School Committee. When possible, the Administrative Coordinator of the School will attend meetings in a non-voting capacity. The director can call open or closed meetings as necessary. Only Teaching-Track, Tenure-Track, Permanent, and Tenured faculty will attend closed meetings.

The School Committee shall meet at least twice between September and December, and twice between January and June. The director will give notice of the schedule of meetings either prior to or coinciding with the beginning of classes in September. The director will circulate the agenda at least 2 days before the meeting. Voting members of the School shall have the right to propose agenda items and shall submit those to the director, preferably 5 working days in advance.

It is expected that as a School citizen, each faculty member will assist in various capacities with the work of the School such as: course management; liaison and recruitment activities; organizing and/or recommending visiting creative practitioners or speakers as is relevant to disciplinary areas; peer-evaluation of teaching; as well as work on the committees and in the positions outlined below.

Director of School

The director's responsibilities include those normally associated with the head of an academic unit, as detailed in the current "Terms of Reference for Departmental Chairs and Directors of Schools" approved by the Senate and Board of Governors. [2] The director will be appointed for a five-year term, normally renewable once, as the result of the same process of consultation currently in use for the appointment of chairs of departments. It is understood that the director participates with the same rights as other faculty members at the discipline level.

The director of the School serves as departmental chair and oversees management of all units for the purposes of communication with the Office of the Dean of the Faculty of Humanities and other areas of upper administration. The director works closely with elected representatives from each of the

[1] Quorum is 50% of the voting members of the School.
[2] See appendix: http://www.mcmaster.ca/policy/AdminAcad/AdminProcedures/Chairs-Directors-TermsofReference.pdf

four disciplines, who serve as members of the Executive Council of the School. He or she is also in communication with the Undergraduate Counsellors for each area, particularly concerning annual curricular revisions. As the principal figure governing over all of the School, the director strives both to respect and facilitate the autonomy of each of the four disciplinary areas, and to lead strategic planning that unites the School around its shared concerns. The four areas of the School are united, in part, through their passion and commitment to excellence in teaching and research in the areas of the creative and performing arts, manifest through artistic production in all its diverse forms, as well as critical, theoretical analysis and study both in historical contexts and in contemporary societies.

Responsibilities specific to the role of the director of SOTA include but are not limited to:

1. Lead Strategic Planning of the School including: vision, mission, setting goals and priorities fiscal and academic.
2. Actively participate in the Dean's Advisory Committee. Communicate to the faculty and staff of the School pertinent information from that committee, and other sources, as it arises.
3. Represent the School, and McMaster, at the Canadian Association of Fine Arts Deans annual conference and communicate information to areas of the School as relevant.
4. Chair School Meetings, Staff meetings, the School Tenure & Promotion Committee, the Executive Counsel, and all hiring committees.
5. Be responsible for management of departmental budget. Work with Executive Counsellors to set financial priorities, including for endowed funds, which are finalized by the director subject to the approval of the dean.
6. Assess and determine CP/M, following consultation with an elected representative from the School and, ultimately, subject to approval of the dean and upper administration.
7. Write evaluations of all ARB applications.
8. Write evaluations of all Research Leave applications and Research Leave Reports.
9. Write academic assessments of all CLAs during the final year of a multi-year contract.
10. Hire Sessional Instructors and TAs following consultation with Executive Counsellors from relevant discipline or, in the case of TAs being hired to work with permanent faculty, following consultation with said faculty member.
11. Review Course Outlines for all faculty and other instructors.
12. Review grant applications submitted by faculty to Tri-Council and other agencies, and write evaluations of those when application process requires.
13. Review and approve the School's financial transactions submitted through MOSAIC and other means.
14. Meet with students, staff, and faculty as necessary to address concerns and/or initiatives.
15. Represent the School at disciplinary events, institutional events, community events, and with donors and/or prospective donors as relevant and possible.
16. Appoint a replacement for him or herself when necessary; this responsibility would be assigned to a member of the Executive Council when possible.

Executive Council

The Executive Council consists of one councillor appointed for a one-year term by and from each of 1) Art, 2) Art History, 3) Music, 4) Theatre & Film Studies through consensual discussion in each discipline.

If one of these areas has only two faculty members and one of those is serving as the director of the School, should the other faculty member be on Research Leave then the director would also be required to fulfill disciplinary representation.

The Executive Counsel shall meet at least twice between September and December, and twice between January and June. The Executive Council serves as an advisory council to the director, who acts as chair of the committee. Each councillor serves as a liaison with his/her respective disciplines. Duties of the councillor include, but are not restricted to:

1. Assist the director in matters of consultation and communication to ensure the School fosters and maintains an open and collegial atmosphere.
2. Work with the director to identify goals for the School consistent with the priorities of the School, Faculty and University.
3. Work with the director to identify priorities for faculty renewal consistent with the goals of the School.
4. Communicate with faculty in his/her respective disciplinary areas to determine priorities for the assignment of monies from endowments and any available funds from the university.
5. Work with the director to define part-time instructional needs and identify qualified candidates to fill those needs.
6. Review applications and advise the director on the appointments of teaching assistants in their respective areas (particularly for courses taught by sessional instructors). An executive councillor can defer to the instructor of a course in their discipline when that instructor is a full-time member of the Faculty, and when he/she is able to complete the work within the necessary timeframe.
7. Complete Course Management and undertake timetabling. This set of responsibilities may be delegated to the Undergraduate Counsellor with full disciplinary approval.
8. Each councillor is responsible for convening meetings of his/her discipline area to address relevant concerns.
9. Disciplines will meet each spring to distribute the assignment of anticipated administrative duties for the upcoming university year. The incumbent Executive Counsellor will report the distribution of assignments to the director prior to June 1st to ensure that every faculty member has the opportunity to complete their expected service.

Appointments Committee

The Appointments Committee consists of the director of the School as the chair of the committee and four full-time faculty members, one from each discipline of the School (Art, Art History, Music, Theatre & Film Studies) as follows: two members of relevant disciplinary groups conduct the search when a candidate from their discipline is to be considered (In instances where the discipline has more than two members, two candidates will be selected through an election process held among faculty from the disciplinary area for which hiring is taking place); one or two members appointed from other disciplines within the School, in accordance with Faculty and University policy. The committee may request one additional member from within or beyond the School if their area of expertise is

deemed a potential asset to the hiring process. Service on the committee is for the duration of the relevant search.

Duties of members of the Appointments Committee include:
1. Approve Tenure Track and CLA job postings and communicate that information to the School.
2. Make recommendations to the director regarding appropriate and affordable venues for publicizing new positions.
3. Review materials submitted by candidates who are applying to advertised positions within the School.
4. Participate in interview and related activities surrounding candidate visits to the University.
5. Provide opportunities for faculty and students to attend candidate presentations and make their opinions known to the committee.
6. Participate in ranking candidates and formulating justifications related to the Vision and Plans of the School, Faculty and University.
7. Make recommendations to the Dean of the Faculty of Humanities. The director will forward such recommendations to the dean on behalf of the committee.
8. The chair of the committee will report to the School Committee when new appointments are made.

Tenure and Promotions Committee
The director or his/her representative, is responsible to ensure that the procedures for re-appointment, tenure, and promotion are carried out in accordance with University and Faculty policy as outlined in McMaster University Revised Policy and Regulations with Respect to Academic Appointment, Tenure and Promotion [2012].
The membership of the Tenure and Promotions Committee will consist of the director of the School (Chair) and at least two full-time tenured faculty members, including one elected by the School as a whole (see below: CP/M and Annual Review) and, where possible, one member elected by the candidate's disciplinary area (in an instance where the director is the only member available in a disciplinary area he/she would have to serve in this capacity); in principle at least one member of the committee would be from outside the disciplinary area of the candidate under consideration and could be appointed to the committee by the director.
Service on the Tenure and Promotions Committee is for the duration of the case being considered. In instances where a discipline is unable to provide a tenured member to the Committee, the discipline will consult with the director who through consultation with the dean will name an individual to act as a representative on behalf of that disciplinary group.

Duties of the Tenure and Promotions Committee include:
1. Make recommendations to the candidate and the director regarding the preparation of the dossier.
2. Make recommendations to the Faculty of Humanities Tenure and Promotion Committee in matters of Re-appointment, Tenure and Promotion.
3. Advise on the representative who is selected to accompany the director to the meeting of the Faculty of Humanities Tenure and Promotions Committee. Normally the representative will be the disciplinary representative serving on the departmental Tenure and Promotions Committee.

4. Conduct a School election to name a replacement to the committee when the director is being considered for promotion or if the elected member of the committee resigns in order to be considered for promotion.

CP/M and Annual Review

In addition to his/her duties on the above committee, the elected member of the Departmental Tenure and Promotions Committee reviews the Annual Activity Reports and CVs for full-time faculty and makes recommendations to the director for CP/M as well as regarding the files of faculty who are technically eligible by years for consideration for promotion.

Undergraduate Counsellor

Each disciplinary area of the School has an Undergraduate Counsellor appointed for a one-year term through consensual discussion in each discipline. Duties include but are not restricted to:

1. Supervise and co-ordinate curriculum submissions, participate in their presentation to the Faculty of Humanities Curriculum Committee.
2. Advise Undergraduate students (program students and those either in courses or interested in being in courses), prospective students and their family members, members of the broader public community.
3. Communicate with the Academic Counsellors in the Office of the Faculty of Humanities, and respond to their requests for information or approval in a timely way. Subjects include: transfer credit equivalency, course permissions, advance standing, program requirements, advising on updating recruitment materials.
4. Serve as liaison with the staff of the School: to arrange for waivers as necessary; to advise on necessary updates for program descriptions on university websites; to schedule program-specific events such as auditions, final recitals, and portfolio interviews.
5. Coordinate faculty nominations for entrance, in-course and graduating awards; communicate those nominations to the Awards office or the Humanities Advisors as per their deadlines.
6. Should issues arise within the School that warrant student input, communicate as broadly as possible with students in disciplinary areas and present their views to the School.
7. As necessary for specific disciplinary areas, conduct individual portfolio interviews or auditions during the summer months.

Last updated April 2016

BA Program Learning Outcomes

Course Code	Course Name	Generate original paths of inquiry that encompass a combination of theory and practice and draw from across arts disciplines	Critically situate themselves and analyze creative practices, in historical and contemporary cultural contexts, to explore questions that are meaningful to society	Conceptualize and critically reflect upon research-based practice	Interpret socially engaged art that contributes to addressing contemporary issues (e.g., decolonization, environmentalism, equity and inclusion);	Demonstrate adaptability, responsiveness, resilience and a capacity to navigate uncertainty, conflict, and barriers to continued learning and practice	Share, listen, and act in a manner that embraces aspects of emotional intelligence (empathy, humility, curiosity, caring), enabling meaningful engagement with others	Identify career paths of interest and in alignment with individual skills in order to apply their arts-based learning within other fields and professions	Engage in collaborative projects which allow participants to learn from one another and build upon collective knowledge and expertise	Demonstrate material knowledge and handling and/or embodied practice to create art within a critical context.
IARTS 1PA3	Perspectives A: Arts in Society; Social Constructions of Race and Gender		I		I	I	I	I		
IARTS 1PB3	Perspectives B: Arts in Society, Technology and Environment		I		I	I	I	I		
IARTS 2PC3	Perspectives C: Arts and Community	I	R	I	R	R	R	R		
IARTS 2PD3	Perspectives D: Arts Across Disciplines	I	R	I	R	R	R	R		
IARTS 3PE3	Perspectives E: Arts in Society; Equity and Inclusion	R	M	R	M	M	M	M		
IARTS 4PF3	Perspectives F: Arts in Society Seminar	M	M	M	M	M	M	N/A		
Investigations Courses										
IARTS 2AD3	Acting as Devising I		I	I		I	I		I	I
IARTS 2AS3	Art and Visual Culture in South and East Asia		I	I	I				I	
IARTS 2CC3	Performance Culture in Canada	I	I	I	I		I			
IARTS 2CD3	Contemporary Approaches to Drawing Practice	I	I	I		I	I	I		R
IARTS 2DP3	Digital Practices	I	I	I		I	I	I		I
IARTS 2DE6	Devised Performance Processes	I	I	I	I	I	I	I	I	R
IARTS 2EP3	3D and Expanded Practice	I	I	I		I	I	I	I	I
IARTS 2ER3	Enviromentally Responsible Art	I	I		I	I	I	I	I	I
IARTS 2FA3	Film Analysis		I				I			
IARTS 2ME3	Art and Visual Culture in the Middle East			I	I				I	
IARTS 2MP3	Contemporary Approaches to Print Media Practices	I	I	I		I	I	I	I	R
IARTS 2OP3	Organizing Performance Space					I	I	I	I	I
IARTS 2CP3	Contemporary Approaches to Painting Practices	I	I	I		I	I	I	I	R
IARTS 2SP3	Contemporary Approaches to Sculpture Practice	I	I	I		R	R	I	R	R
IARTS 2RV3	Reading Visual Culture			I	I				I	
IARTS 2SE3	Performance Culture in South and East Asisa	I	I	I	I		I			
IARTS 2US3	Understanding Spatial Dynamics and Time in the Arts			i	i				i	
IARTS 2VA3	Art and Visual Culture in Canada			I	i				i	
IARTS 3AD3	Acting as Devising II	I	R	R	I	R	R	I	R	R
IARTS 3BA3	Book Arts	R	R	R		R	R		R	R
IARTS 3CE3	Concentrated Study Ceramics	I	R	R	I	R	R	R	R	I
IARTS 3CH3	Cinema History from WWII		R		R		R			
IARTS 3CP3	Performance and Community Engagement	R	R	R	R	R	R	R	R	I
IARTS 3CW3	Colours of the World			R	R				R	
IARTS 3DA3	Arts and Spaces for Dwelling and Activities			R	R		R		R	
IARTS 3EC3	Early Cinema History		R				R			
IARTS 3FI3	Fashion and Identity			R	R		R	R		
IARTS 3FO3	Concentrated Study Foundry	I	R	R	I	R	R	R	R	I
IARTS 3GE3	Contemporary Arts and the Global Enconomy				R	R			R	
IARTS 3IA3	Indigenous Art and Visual Culture in Canada				R	R	R			
IARTS 3ID3	Integrated Dimensional Media Concentration	R	R	R	R	R	M	M	M	
IARTS 3IM3	Integrated Media Concentration	R	R	R	R	R	M	M	M	R
IARTS 3IN3	Concentrated Study Intaglio	I	R	R	I	R	M	M	M	I
IARTS 3IP3	Intercultural Performance Practices									
IARTS 3LC3	Local Canadian Contemporary Art and Performance	R	R	R	R		R			
IARTS 3LI3	Concentrated Study Lithography	I	R	R	I	R	M	M	M	I
IARTS 3MI3	Media Installation and Performance	R	R	I	I	R	M	M	R	I
IARTS 3MM3	Materials and Materiality	R	R	M	R	R	M		R	
IARTS 3MP6	Devised Theatre Production	R	R	R	R	R	R	R	R	M
IARTS 3ND3	New Directions in Painting/Drawing	R	R	R	R	R	M	M	R	R
IARTS 3OE3	Field Work: On-Site Explorations	R		I	I	R	M	M	I	R
IARTS 3PF3	Photography Beyond the Frame	R	R	R	I	R	M	M	I	R
IARTS 3SD3	Structuring the Devised Performance	R		R	R	R	R	R	R	R
IARTS 3SP3	Scenography at Play	R		R	R	R	R	R		I
IARTS 3SR3	Intercultural Arts Along the Silk Road		R			M	R		M	
IARTS 3SS3	Site Specific Theatre					M				
IARTS 3TB3	Devised Theatre Production: Research and Development	R		R	R	R	R	R	R	
IARTS 3VS3	Visual Storytelling	R	R	R	R		R	R		
IARTS 3WV3	Women and Visual Culture	R	R	R	R		R	R		
IARTS 4AD3	Acting as Devising III	R	M	M	R	M	M	R	M	M
IARTS 4AE3	Art and the Environment				M	M	M	M	M	
IARTS 4CE3	Concentrated Study Ceramics	M	M	M	M	M	M	M	M	M
IARTS 4CO6	Thesis Project	M	M	M	M	M	M	M	M	M
IARTS 4DF3	Scene Study in Digital Film	R	M	M	R	M	M	R	M	
IARTS 4DM3	Arts and Diasporic Migration				M	M	M		M	
IARTS 4IN3	Concetrated Study Intaglio	M	M	M	M	M	M	M	M	M
IARTS 4LI3	Concetrated Study Lithography	M	M	M	M	M	M	M	M	M
IARTS 4SD3	Scripting the Devised Performance	R	M	M	R	M	M	R	M	

BFA Program Learning Outcomes

Course Code	Course Name	Generate original works and/or paths of inquiry that encompass a combination of theory and practice and draw from across arts disciplines	Critically situate themselves and analyze creative practices, in historical and contemporary cultural contexts, to explore questions that are meaningful to society	Independently conceptualize, initiate, implement and critically reflect upon research-based practice	Interpret and create socially engaged art that contributes to addressing contemporary issues (e.g., decolonization, environmentalism, equity and inclusion);	Demonstrate adaptability, responsiveness, resilience and a capacity to navigate uncertainty, conflict, and barriers to continued learning and practice	Share, listen, and act in a manner that embraces aspects of emotional intelligence (empathy, humility, curiosity, caring), enabling meaningful engagement with others	Identify and construct a professional path for the development of a career in the creative arts or apply their arts-based learning within other fields and professions	Engage in collaborative projects which allow participants to learn from one another and build upon collective knowledge and expertise	Demonstrate material knowledge and handling and/or embodied practice to create art within a critical context.
IARTS 1RR3	Project Development 1	I	I	I	I	I	I	I	I	I
IARTS 1RP3	Project Production 1	I	I	I	I	I	I	I	I	I
IARTS 1PA3	Perspectives A: Arts in Society; Social Constructions of Race and Gender		I		I	I	I		I	I
IARTS 1PB3	Perspectives B: Arts in Society, Technology and Environment		I		I	I	I		I	I
IARTS 2RR3	Project Development 2	R	R	R	R	R	R	R	R	R
IARTS 2RP3	Project Production 2	R	R	R	R	R	R	R	R	R
IARTS 2PC3	Perspectives C: Arts and Community		R		R	R	R		R	I
IARTS 2PD3	Perspectives D: Arts Across Disciplines		R		R	R	R		R	I
IARTS 3RC6	Project Production and Development 3	M	M	M	M	M	M	M	M	M
IARTS 3PE3	Perspectives E: Arts in Society; Equity and Inclusion		M		M	M	M		M	I
IARTS 4C12	Project Capstone Thesis	M	M	M	M	M	M	M	M	M
Investigations Courses										
IARTS 2AD3	Acting as Devising I		I	I		I	I		I	I
IARTS 2AS3	Art and Visual Culture in South and East Asia		I	I	I				I	
IARTS 2CC3	Performance Culture in Canada	I	I	I	I		I			
IARTS 2CD3	Contemporary Approaches to Drawing Practice	I	I	I		I	I	I		R
IARTS 2DP3	Digital Practices	I	I	I		I	I	I		I
IARTS 2DP6	Devised Performance Processes	I	I	I	I	I	I	I	I	R
IARTS 2EP3	3D and Expanded Practice	I	I	I		I	I	I	I	I
IARTS 2ER3	Enviromentally Responsible Art	I	I		I	I	I	I	I	I
IARTS 2FA3	Film Analysis		I				I			
IARTS 2ME3	Art and Visual Culture in the Middle East			I	I				I	
IARTS 2MP3	Contemporary Approaches to Print Media Practices	I	I	I		I	I	I	I	R
IARTS 2OP3	Organizing Performance Space					I	I	I	I	I
IARTS 2CP3	Contemporary Approaches to Painting Practices	I	I	I		I	I	I	I	R
IARTS 2SP3	Contemporary Approaches to Sculpture Practice	I	I	I		R	R	I	R	R
IARTS 2RV3	Reading Visual Culture			I	I				I	
IARTS 2SE3	Performance Culture in South and East Asisa	I	I	I	I		I			
IARTS 2US3	Understanding Spatial Dynamics and Time in the Arts			I	I				I	
IARTS 2VA3	Art and Visual Culture in Canada			I	I				I	
IARTS 3AD3	Acting as Devising II	I	R	R	I	R	R	I	R	R
IARTS 3BA3	Book Arts	R	R	R		R	R		R	R
IARTS 3CE3	Concentrated Study Ceramics	I	R	R	I	R	R	R	R	I
IARTS 3CH3	Cinema History from WWII		R		R		R			
IARTS 3CP3	Performance and Community Engagement	R	R	R	R	R	R	R	R	I
IARTS 3CW3	Colours of the World			R	R				R	
IARTS 3DA3	Arts and Spaces for Dwelling and Activities			R	R		R		R	
IARTS 3EC3	Early Cinema History		R				R			
IARTS 3FI3	Fashion and Identity			R	R		R	R		
IARTS 3FO3	Concentrated Study Foundry	I	R	R	I	R	R	R	R	I
IARTS 3GE3	Contemporary Arts and the Global Enconomy				R	R			R	
IARTS 3IA3	Indigenous Art and Visual Culture in Canada				R	R	R			
IARTS 3ID3	Integrated Dimensional Media Concentration	R	R	R	R	R	M	M	M	
IARTS 3IM3	Integrated Media Concentration	R	R	R	R	R	M	M	M	R
IARTS 3IN3	Concentrated Study Intaglio	I	R	R	I	R	M	M	M	I
IARTS 3IP3	Intercultural Performance Practices	R	R	R						
IARTS 3LC3	Local Canadian Contemporary Art and Performance	R	R	R	R		R			
IARTS 3LI3	Concentrated Study Lithography	I	R	R	I	R	M	M	M	I
IARTS 3MI3	Media Installation and Performance	R	R	I	I	R	M	M	R	I
IARTS 3MM3	Materials and Materiality		R	R	R	M			R	
IARTS 3MP6	Devised Theatre Production	R	R	R	R	R	R	R	R	M
IARTS 3ND3	New Directions in Painting/Drawing	R	R	R	R	R	M	M	R	R
IARTS 3OE3	Field Work: On-Site Explorations	R		I	I	R	M	M	I	R
IARTS 3PF3	Photography Beyond the Frame	R	R	R	I	R	M	M	I	R
IARTS 3SD3	Structuring the Devised Performance	R		R	R	R	R	R	R	R
IARTS 3SP3	Scenography at Play	R		R	R	R	R	R		I
IARTS 3SR3	Intercultural Arts Along the Silk Road		R			M	R		M	
IARTS 3SS3	Site Specific Theatre					M				
IARTS 3TB3	Devised Theatre Production: Research and Development	R		R	R	R	R	R	R	
IARTS 3VS3	Visual Storytelling	R	R	R	R		R	R		
IARTS 3WV3	Women and Visual Culture	R	R	R	R		R	R		
IARTS 4AD3	Acting as Devising III	R	M	M	R	M	M	R	M	M
IARTS 4AE3	Art and the Environment				M	M	M	M	M	
IARTS 4CE3	Concentrated Study Ceramics	M	M	M	M	M	M	M	M	M
IARTS 4CO6	Thesis Project	M	M	M	M	M	M	M	M	M
IARTS 4DF3	Scene Study in Digital Film	R	M	M	R	M	M	R	M	
IARTS 4DM3	Arts and Diasporic Migration				M	M	M		M	
IARTS 4IN3	Concetrated Study Intaglio	M	M	M	M	M	M	M	M	M
IARTS 4LI3	Concetrated Study Lithography	M	M	M	M	M	M	M	M	M
IARTS 4SD3	Scripting the Devised Performance	R	M	M	R	M	M	R	M	

Appendix: SOTA Existing Physical resources

In terms of interdisciplinary arts teaching and research, space is pedagogy. The most pressing issue is one of geography as the School's facilities are currently scattered across campus.

The research-creation classes that involve all BFA students working together in the full variety of arts disciplines taught in the program require 3 adjacent maker-spaces: one makers studio, one performance studio, and one digital studio. The spaces must be adjacent to each other in order for classes to move between different explorations of media as their needs require, and to encourage students in traditionally separate disciplines to work together.

Existing spaces:

Space/Room, Description	Equipment/ Furniture	Notes
Shared Spaces		
TSH 4th Floor Offices	▪ Private offices with telephone and network access to the internet. ▪ SOTA office ▪ Seminar room	Faculty offices vary from 105 to 127 square feet, comparable to offices throughout the Faculty of Humanities. The seminar room is 377 square feet and has a small storage closet.
Current Studio Art Spaces		
TSH 116: Flexible upper-level studios	▪ 8 to 10 modular easels ▪ are in this workspace ▪ 1 sink ▪ misc. furniture (chairs, ▪ small tables, plan chest drawers)	Individual spaces within this room can accommodate individual workspaces for 15-18 students comfortably Shared, semi-private workspace for upper level students
TSH 117: Storage Storage of materials, supplies for the printmaking studios and drawing	▪ 4 plan chest drawer ▪ shelves	Locked storage space accessible to faculty and techs
TSH 115: Digital Workspace	▪ 1 lg. format printer 48" ▪ wide ▪ 2 computers	Accessible to faculty and staff as well as workday accessibility for students

Digital facility and storage available for faculty and students who use digital print media in course work or practice	▪ 1 drawing tablet ▪ 1 standard printer ▪ storage cabinets that house 3 digital projectors, ▪ tripods ▪ 1 sink	On site ability to print facilitates a hands-on, engaged, and refined digital print practice This space is also used as a design room for arts and engineering projects.
TSH 114: Multiple use presentation room This space facilitates lectures for courses as well as visiting artists, critique space for students' work	▪ 1 ceiling mounted projector ▪ Audio system ▪ 3 moveable walls ▪ 10-15 pedestals ▪ Chairs ▪ AV cart ▪ Tool cart ▪ Track lighting	Necessary clean class room space used for: all studio art courses to deliver presentations/lectures, students to present course work for critique, class discussion, visiting artist presentations, exhibition space, event space, photography space for art work Only space appropriate for media presentations (dark space)
TSH 102: Printmaking Studio This is the primary studio that facilitates the learning and practice of planographic and intaglio methods in printmaking	▪ Slot vented glass counter space ▪ 3 Etching presses: 42 x 24" ▪ 60 x 32" ▪ 18 x 30" ▪ Misc. print equipment	All planographic/intaglio methods practiced in this studio are directed by innovative initiatives to create a healthier work environment for the students in our studios and reduce the footprint on the environment
TSH 101: Wet Processing Room This room is used for Ferric Chloride etching, and traditional etching which consist of removal of big grounds, spray aquatint (non toxic), plate degreasing etc.	▪ Vent hood with sash ▪ Large metal wash out sink ▪ Stainless steel counters with slot vent ▪ Large sediment tank for ferric chloride,	Vent hood and large metal sink also facilitate the use of materials that are non- print specific
TSH 103: Lithography Studio This is the primary studio that facilitates the learning and practice of stone lithography	▪ Stone and plate lithography presses: ▪ 30 x 48" press ▪ 32 x 60" press ▪ Computer ▪ Xante plate maker and other misc furniture.	The lithography studio is also use for other print classes and works as a spill over space for etching and other print courses. This studio applies safer alternatives to traditional methods of lithography. There are very few institutions that teach and support lithography with a lower impact on the health and environment as all volatile organic compounds (VOC) have been

		replaced by safer alternatives as well as nitric acid for etching stones
TSH 104: Flex Studio Flexible multi-use space Large open classroom/ workspace, which acts as a spill over for all studio classes Workspace for all art students as well as art courses that have non art majors who do not have access to other spaces.	▪ Foldable tables and chairs that can be moved and stored when not in use. ▪ Large etching press: 54" x infinite bed length	White wall space used to critique student work or as a exhibition space Large etching press was designed and built as a collaborative arts and engineering project. This is a unique piece of equipment and one of the few presses that can print on such a large scale This space is also used to host events specific to the studio arts program
TSH 105A: Studio Technologist Office	▪ Desk and tool cabinet ▪ Computer	Print technician office located by the print studios for easy access, and tool sign out for students
TSH 105: Storage Multi-purpose storage room which houses fibre based supplies	▪ Sink with sediment ▪ Large screen exposure unit ▪ 4 sewing machines ▪ 1 serger	
TSH 106: Grading and Prep room This room is used for a variety or activity such as a grading/documentation of work for faculty as well as a prep space for matting and framing.	▪ 4 large tables – 4x 6 feet	
TSH 107: Sculpture Storage and Supply Storage space of sculpture materials/ supplies for students and faculty as well as misc. small equipment	▪ Shelving	
TSH 108: 2D Storage and Supply Storage space of 2D materials / supplies for students and faculty	▪ Shelving and tables	

TSH 109: Exposure Unit and Print room Used for photographic print processes	▪ Flip top plate maker	
TSH 110/110A: Flexible work space and student storage Open teaching and work space, also used as storage space for in progress student works	▪ Shelves ▪ Plan chest drawers ▪ Tables ▪ Large sink with trap ▪ Wall mounted slot vents	This space also has a street level access door
TSH B103: Painting and Drawing Studios Open teaching and work space specific to 2D media	▪ 40 Easels ▪ Tables ▪ Model stand ▪ 1 sink ▪ large painting storage racks	➥ 3 locked storage spaces which house: still life objects/ materials, portable drawing carts and supplies This space is also a facility for life drawing sessions that are open to McMaster students and community
Fitzhenry Atrium: Exhibition and event space as well as additional critique space for studio classes	▪ Chairs	

TSH B102: Sculpture Studio This pedagogical workspace includes facility and space specific to 3D practices which are subdivided into separate material based methods: ➞ Metal shop ➞ Woodshop ➞ Foundry Plastic arts (ceramics, mould making)	▪ Metal shop: ▪ MIG, TIG, arc welders ▪ Plasma cutter ▪ Metal bandsaw ▪ Fume extraction unit ▪ Drill press ▪ Sandblasting unit ▪ bench grinder ▪ sink ▪ Wood shop: ▪ table saw (stop saw) ▪ wood lathe ▪ drill press ▪ router table ▪ scroll saw ▪ 2 band saws ▪ mitre saw ▪ Foundry: ▪ large gas kiln ▪ smelting furnace ▪ 1 electric kiln ▪ electric hoist ▪ Plastic Arts: ▪ 2 ceramic wheels ▪ 1 large electric kiln ▪ slab roller ▪ extruder ▪ pugmill ▪ clay mixer ▪ 2 large sinks with traps	Separate venting/ exhaust systems are included in the various facilities The foundry is one of the two post secondary metal casting facilities in Ontario that teaches lost wax processes ➞ Studio arts benefits from a collaborative arrangement with Mechanical Engineering through the use of their aluminum casting facility ➞ The 3D studios promotes alternative and safer practices that have a lower impact on the environment and health (note) A large gas burnout kiln is currently being replaced. In addition to upgrading foundry facility, the new kiln will expand our current ceramic facility
TSH B102A: Studio Technologist office	▪ Desk and tool cabinet ▪ Computer	Technician office located in the sculpture studios for easy access, and tool sign out and for safety of students
TSH 205A*: Humanities Media and Computing Equipment Sign-Out Office	▪ 9 Canon DSLR ▪ Cameras ▪ Studio lighting equipment ▪ Tripods	All equipment tested and maintained by Humanities Media and Computing technicians and staff
TSH 206*: Active Learning Instructional Lab Facilities opened to us in past two years, used for ART1SI3, ART3PB3, ART3IP3, ART4AR3, and	▪ 25 workstations with Adobe Photoshop, MS Office, and other open-source applications installed. ▪ projection wall ▪ three large flat-screens to facilitate viewing for large groups	We have played a major role in developing this space: new machines in 2015, on-going advisory on what software gets installed

MM3PC3. It is open to any of our classes upon request (and availability).		
Current Theatre and Film Studies Spaces		
LRW ???: Black Box Theatre	INSERT SPEC HERE	Principal performance venue for program Shared on 50-50 basis with Multimedia Also rented to others
T-13, Room 101: The Performance Lab (temporary building 13)		Primary research and teaching space
T-13, Room 104: Rehearsal Studio (temporary building)		Breakout space for devising classes Additional rehearsal space for project work
T-13, Room 105: Costume Construction (temporary building)		
T-13, Room 106: Sound room (temporary building)		
T-13, Room 122: Model Making and Soft Material Construction (temporary building)		
T-13, Room 112: Costume Storage (temporary building)		
Temporary Building 32: Scenic Workshop (temporary building)		A temporary pre-fab building Located in Cootes' parking lot 15 minute walk from other facilities Currently has issues with mold
CNH 102: Robinson Memorial Theatre		

LIBRARY RESOURCES TO SUPPORT THE PROPOSED UNDERGRADAUTE iArts/INTEGRATED ARTS PROGRAMS SEPTEMBER 2019

The University Library is pleased to provide this document describing collections and services in support of the information needs of students and faculty in the proposed new Bachelor of Fine Arts and Bachelor of Arts, Hons programs in the School of the Arts.

As noted in the proposal, this program, within the Faculty of Humanities, will consist of a Bachelor of Fine Arts and a BA Honours in Integrated Arts (iArts), and will draw on both new and existing faculty and courses in Art History, Studio Arts, and Theatre and Film Studies, with potential future collaborations with Music. The University Library provides services and scholarly resources to support undergraduate instruction and faculty-level research for existing programs across the School of the Arts, many of which will be highly relevant to students enrolled in the iArts programs.

It is our assessment that the resources available provide sufficient scholarly support for the teaching and research needs of the proposed undergraduate curriculum. We are not aware of any significant gaps in the Library's collection that would impede the Program's students in their study and research activities. The Library welcomes input from faculty in the program regarding needed information resources and priority of acquisition within the established budgets for Art, Theatre and Film Studies, and Music.

LIBRARY RESOURCES

Collection Development

McMaster University Library's holdings currently total more than 2.2 million volumes, with some 2 million distinct titles. Library materials are obtained in a variety of ways, including firm and standing orders, monograph approval plans (in some areas), print or online subscriptions, consortial e-journal and e-book packages, and user-driven acquisition.

Each department nominates a Faculty Library Representative from among their faculty. The function of the Library Representative is to serve as a communications link between the department and the Library, to assist us in making decisions about the value to students and faculty of new or existing electronic resources or serial subscriptions, and to recommend monograph titles for acquisition by the Library. As such, the Library Representative has an important role in shaping the Library's collection development.

Monographs

The total annual expenditure on individual monograph acquisitions (i.e., those not purchased in large e-book packages) by the University Library in all formats is approximately $700,000. Print books, print journals, and reference resources for iArts students are housed primarily in Mills Memorial Library (Humanities and Social Sciences). Additionally, the Library has purchased or subscribed to nearly 600,000 e-books and makes additional e-book titles available through a user-driven "on demand" process.

Serials & Electronic Resources

The Library has purchased or maintains subscriptions to a range of electronic resources, including research databases, full text journals, monographs, numeric data and government publications. In addition, the Library identifies and provides access to select freely available material such as open access journals.

McMaster University Library participates in national (i.e., Canadian Research Knowledge Network) and regional (i.e., Ontario Council of University Libraries) consortium licenses for access to full-text electronic resources, and whenever possible registers for campus-wide electronic access instead of print subscriptions. All full-text journals are accessible through the library's online catalogue (http://discovery.mcmaster.ca) and through the e-journals portal at http://sfx.scholarsportal.info/mcmaster/az. The Library has embedded linking technology (SFX) into research databases, which allows users to link directly from the databases to full-text e-journal subscriptions, or to our catalogue.

McMaster University students, faculty and staff may access electronic research databases and full-text electronic books and journals from on- or off-campus via the Library's proxy server.

Currently, the McMaster community has access to more than 1.1 million electronic resources, including approximately 90,000 electronic journals and more than 600,000 e-books. The major online journal suites, e-book collections, and online primary source databases which may be helpful to students in the proposed iArts Program include:

- American Film Scripts Online
- Asian American Drama
- Black Drama, 1850-
- Entertainment Industry Magazine Archive
- JSTOR
- North American Indian Drama
- North American Theatre Online
- North American Women's Drama
- Oxford e-books
- Playwrights Canada Press (Drama Online)
- Project MUSE

- Theatre in Video
- University of Chicago Journals

REFERENCE RESOURCES

Selective list of indexes, abstracts, and online reference resources:

- Art Abstracts
- Bibliography of Asian Studies
- Bibliography of the History of Art
- Canadian Art Database
- Communication Source
- Film and Television Literature Index
- Grove Art Online / Oxford Art Online
- Index Islamicus
- Music Index
- Oxford Music Online

Selective list of online image, streaming video, and music resources:

- ARTstor
- Criterion on Demand (feature films)
- Kanopy Streaming (documentary films)
- Naxos Music Library - Classical
- NFB of Canada

RARE AND PRIMARY SOURCE MATERIALS

The Library's William Ready Division of Archives and Research Collections is home to over 100,000 monograph volumes, among them more than 37,000 volumes published before 1800, and to an extensive collection of archives totaling more than 4,000 linear meters.

Pre-1800 Book Collections and the Eighteenth-Century Collection

The eighteenth-century collection, consisting of books, pamphlets, journals, newspapers, maps, and other ephemera, is one of the strongest of its kind in North America. The collection has strengths in the history of Britain and Europe, including at least 10,000 works dealing with political, social, economic, and cultural history; volumes on social reform; and titles in philosophy, fine art, and music.

Archives

Canadian literature, society, and culture are among the strengths of the Division's archival collections. Well-represented areas include Canadian authors and publishing, small and fine presses, peace and pacifism, the World Wars, student activism, labour, radical political organizations, and women's studies. The Division holds a variety of archives related to music, including a number of prominent Canadian musicians, an extensive collection of Canadian sheet music, and music of the First World War. Significant collections of wartime propaganda and recruiting posters containing many striking visual resources, as well as other smaller collections consisting of or including visual materials, are also part of the Division's archival holdings.

INFORMATION RESOURCES EXPENDITURES

The Library's total Information Resources budget for fiscal year 2018/19 was $10 million. The annual expenditure figures for the acquisition of library materials for Art, Music, and Theatre & Film Studies are listed in Appendix A.

It is important to note that many of our serials subscriptions are now online and are paid from a centralized Library electronic resources budget, which in part accounts for short subscription lists at the department level. In addition to those expenditures specific to the Departments, the Library now spends in excess of $6.8 million annually on electronic resources, many of which are multi-disciplinary.

Overall Library acquisitions expenditures have increased somewhat in the past five years. The Library's memberships in national and regional consortia have reduced some costs and enabled access to many more resources than the budget funds would otherwise permit.

LIBRARY FACILITIES AND SERVICES

The libraries of the University Library system are open approximately 107.5 hours per week during the term, with extended hours during examination periods. The Learning Commons at Mills Library is open until 2:00 AM five days per week (Sunday-Thursday) during the later part of each term to provide late-night study space. Both the Mills Learning Commons and the Thode Science and Engineering Library provide later hours on Fridays (until 10:00PM) during the term and are open 24/7 during exam periods. Combined, the library systems offer 3,560 public seats, 23 group study rooms, and 117 public computer stations. The library system includes two instructional spaces: the Wong Electronic Classroom in Mills Library and the ThInK Space in Thode Library, both of which can accommodate groups of up to 43 people. Presentation facilities are available in the Connection Centre (43 seats), also located in Mills Library. Wireless network service is available throughout the libraries.

Learning Support

Learning Support is offered to the students through research skills instruction and research assistance (face to face and virtual). Course-specific instruction is conducted by librarians at the request of faculty members. The Faculty of Humanities and The School of the Arts has been underserved recently, with a total of 15 session provided from May 2018-April 2019. Learning Support is prepared and available to work with the Faculty of Humanities and the School of Integrated Arts to support student success throughout the program by working with both the curriculum planners and the individual faculty members.

Library Accessibility Services

Library Accessibility Services provides a variety of services to students referred by McMaster's Student Accessibility Services office. Course materials and library resources can be provided in alternate formats, including Braille and electronic formats suitable for screen readers and other assistive technology. Library Accessibility Services can also assist with the closed captioning of videos used in courses or on public websites and with a variety of additional support services. Students registered with LAS have access to the new Campus Accessible Technology Space, which provides access to assistive technologies, a low sensory study space, and specialized assistance with many library related services.

The Lyons New Media Centre

The Lyons New Media Centre on the fourth floor of Mills Library is a space for the innovative creation and use of new and traditional media in teaching, learning and research at McMaster.

Facilities available for student use through the Centre include video and audio editing workstations, editing suites, a media production studio, and a soundproof recording booth. A large video wall is a key feature of the Centre's main space, providing the ability to showcase the media creation process, highlight faculty and student research, and display faculty and student media projects. Lyons is also home to a collection of video games and related hardware, which can be incorporated into teaching and research activities or used in the Centre's console gaming room. Digital cameras, microphones, greenscreens, and other equipment are available, and the Centre is a hub for students needing 3D printing.

Makerspace at Thode Library

In collaboration with the Faculty of Engineering, the Library has created a Makerspace on the lower level of the H. G. Thode Library. This newly-renovated space is a 2,600 square-foot physical and digital workshop that serves as an interdisciplinary experiential learning ground, allowing students across the University to systematically experiment with, prototype, and evaluate concepts that they had once only imagined. By providing access to tools, technology, expertise, and social connections not otherwise easily accessible, the Makerspace offers students from all disciplines a hands-on opportunity to explore new

technologies, learn technical skills, and work collaboratively to transform their innovative and creative ideas into tangible articles.

Library Catalogue

Monographs, journals, and many other Library resources in both print and electronic formats are catalogued. Print resources are generally shelved by call number using the Library of Congress Classification system. The online catalogue (http://discovery.mcmaster.ca) provides access to all collections of the libraries at McMaster [Mills Memorial Library (Humanities and Social Sciences), H.G. Thode Library of Science & Engineering, Innis Library (Business), and the Health Sciences Library]. Most items circulate, with the exception of print journals, some government publications, and reference materials.

The University Library has for several years offered a 'scan and send' service via the catalogue. Using this service, McMaster students, faculty, and staff can request copies of journal articles or book chapters from print volumes in our collection, which are scanned and delivered to them electronically. Additionally, the migration to a different management system in 2017 allowed us to offer several new services, available to all McMaster students, faculty, and staff:

- **Discovery:** A "discovery layer" that simultaneously searches the library catalogue and the contents of several subscription and open access databases.
- **Reading History:** Reading History is available for activation in each user's library account to automatically keep a list of items borrowed and returned to the Library.
- **Preferred Searches:** Allows users to create pre-defined searches and receive notifications when items matching those search terms are added to the Library's collection.
- **New Items:** Follow the link on the Library website, or go directly to http://library.mcmaster.ca/newitems for a list of materials added to the Library's collection in the previous 1, 5, or 30 days.
- **Paging:** McMaster students, faculty and staff can request that items in the stacks at Mills, Thode, or Innis be retrieved for them and held for pickup at the owning library.

Information about all library materials, hours, services, the online catalogue, and access to electronic products is available through the Library website at https://library.mcmaster.ca.

Research/Reference Help

Library staff provide research help (reference assistance) both in person at service desks in each library and remotely by telephone and e-mail. Research help is also available via chat using "Ask," a consortial service provided by 16 Ontario university libraries, facilitated by the Ontario Council of University Libraries (http://ocul.on.ca/node/2121).

Interlibrary Loan & Reciprocal Borrowing

For items not available in McMaster's libraries, students can use RACER (https://library.mcmaster.ca/services/ill), OCUL's web-based interlibrary loan system, to borrow books, theses, government publications or copies of journal articles from libraries within Canada and elsewhere.

Reciprocal agreements with various library consortia allow McMaster faculty, staff, and students to borrow in person from other university libraries in Canada. McMaster faculty may also obtain borrowing privileges at many major university libraries in the United States (http://www.oclc.org/membership/advisorycommittees/profile8.htm).

Library Outreach

McMaster University students, faculty, and staff are encouraged to stay informed about new services and developments in the Library by reading our *News & Events* blog (http://library.mcmaster.ca/news), by subscribing to one of many library RSS feeds, and by connecting with the Library's active social media presence on Twitter, Snapchat, and YouTube.

Members of the Faculty of Humanities also participate in the University Library Advisory Council (https://library.mcmaster.ca/about/office-university-librarian). The Council is an important aspect of both keeping the McMaster community abreast of developments in the Library and of incorporating community input into the Library's planning processes.

Appendix A

Library expenditures in support of Art, Theatre & Film Studies, and Music, 2014-2018

FISCAL YEAR	MONOGRAPH EXPENDITURES	SERIALS EXPENDITURES	TOTAL	ELECTRONIC RESOURCES (Library Expenditures)
14/15	$22,143	$20,190	$42,333	$5,608,823
15/16	$28,121	$26,171	$54,292	$6,316,841
16/17	$21,341	$27,585	$48,926	$7,005,009
17/18	$21,591	$23,553	$45,144	$7,018,965
18/19	$27,087	$23,421	$50,508	$7,635,996

Note: **FY 17/18 –** New library catalogue and acquisitions system implementation
Beginning **FY 14/15** - non rebateable portion of HST for Electronic products is included in the cost of the expenditures

New Undergraduate Program or Existing Program Undergoing Major Changes (more than 30%)
Details of Resource Implications and Financial Viability **Faculty:** Humanities
Program Name: **iArts**

A. FINANCIAL SUSTAINABILITY OF PROGRAM

Complete New UnderGraduate 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)

REVENUE	2021/22	2022/23	2023/24	2024/25	2025/26
Program Generated Gross Undergraduate Revenue - University	$352,940	$820,678	$1,356,824	$1,867,861	$2,008,856
Less Tuition to Other Faculties for Service Teaching	-$24,170	-$54,988	-$88,766	-$119,160	-$124,055
Add Residual Tuition Allocation to Lead Faculty (Estimated)	$4,803	$10,877	$17,529	$0	$24,412
Less SAG Obligation Contribution	-$840	-$1,911	-$3,085	-$4,142	-$4,312
Tuition Revenue - Lead Faculty	**$332,733**	**$774,656**	**$1,282,502**	**$1,744,559**	**$1,904,901**
Gross Grant Revenue - Lead Faculty	**$151,944**	**$424,112**	**$722,363**	**$990,998**	**$1,034,293**
Other Revenue - Concert Revenue, Art Fees, Concert Hall Rent, Lesson Fees (420004, 460000, 460004, 470000, 480001, 480040, 480050, 480099, 480700) also Service Teaching, MELD revenue and Provost revenue	$507,697	$1,020,306	$1,538,012	$2,061,005	$2,071,586
Total Gross Undergraduate Revenue to Lead Faculty	**$992,373**	**$2,219,074**	**$3,542,877**	**$4,796,563**	**$5,010,780**
University Fund / Research Infrastructure Contribution	-$63,192	-$145,935	-$236,519	-$320,677	-$338,032
Total Support Unit Allocations (Indirect Costs)	-$390,402	-$815,197	-$1,255,607	-$1,677,698	-$1,707,975
Net Revenue	**$538,779**	**$1,257,943**	**$2,050,751**	**$2,798,188**	**$2,964,773**

Total Teaching Costs	-$485,604	-$995,488	-$1,530,562	-$2,091,768	-$2,144,063
Total Admin Salaries & Benefits	-$102,779	-$210,697	-$323,947	-$442,727	-$453,795
Total Student Support (From operating)	$0	$0	$0	$0	$0
Total Capital/Equipment Costs	-$5,972	-$12,242	-$18,822	-$25,723	-$26,366
Total Other Direct Expenses - Supplies/Services/Travel etc	-$23,390	-$47,949	-$73,721	-$100,752	-$103,271
Total Share of Faculty's Central Expenses	**-$48,941**	**-$100,329**	**-$154,255**	**-$210,815**	**-$216,086**
PROGRAM EXPENSES	**-$666,685**	**-$1,366,704**	**-$2,101,307**	**-$2,871,787**	**-$2,943,581**

IN-YEAR (Surplus/ Deficit)	**-$127,906**	**-$108,761**	**-$50,557**	**-$73,599**	**$21,192**

*Note: In assessing total revenue to the unversity, the "Tuition to other Faculties"line should be added back in to surplus/deficit line

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.

This is the ongoing cost of running the current School of the Arts, excluding Music. The costing includes centrally apportioned and Faculty-specific subsidies. This is step one of the revitalization and reorganization of the School of the Arts. Next steps include developing more interdisciplinary connections within Humanities and between the School and other Faculties across campus, which should have positive benefits for students and the financial position of the School.

B. NUMBER OF STUDENTS

	FT	PT		
Intended Steady-state annual intake	61	0	Year achieved:	2022
Intended Steady-state total enrolment	205	0	Year achieved:	2026
Number of International Students included in steady state	20.5	0		

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.) 0

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

C. FORMAT OF INSTRUCTION

	Fall	Winter	Summer (May-June)	Summer (July-August)	Annual program units?
During which terms will the program run?	**yes**	**yes**	**yes**	**yes**	**30**

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? | 0%

If either is greater than zero please provide information:

D1. PROPOSED TUITION FEE

reference: http://www.mcmaster.ca/bms/student/pdf/fees_included.pdf

Is approval being sought for a Ministry-funded Program? | **Yes** | Do Standard Tuition rates apply ? (If No, specify fees below) | **Yes**

Proposed Tuition Fee:	**Domestic**		**International**	
	Full Time	**Part Time**	**Full Time**	**Part Time**
Per Year :	$ 6,864.60	n/a	$ 36,559.84	
Per Term (if applicable):				
Per Course (if applicable):				

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

reference: http://www.mcmaster.ca/bms/student/pdf/fees_included.pdf

Will regular Mandatory Supplementary Fees apply? | Full Time | **Yes** | Part Time | **Yes** | Modified only | **No**

If no, please contact ***Assistant Dean, Student Affairs x27633*** *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?) | Yes | *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.

	Onetime	**Ongoing**	**Value $**	**Details**

Donations from External Sources (existing and pursuing additional)		*x*	*140000*	*The School of the Arts (precursor to iArts) has many external donors with an interest in supporting the arts at McMaster.*

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 Faculty: **N/A** Faculty: **N/A** Faculty: **N/A**

Incremental FTEs required:	**Humanities**	**N/A**	**N/A**	**N/A**	**Comments**
Faculty - Tenure Track					
Faculty - Sessional and CLAs					
Staff					
Teaching Assistants					
Additional Non-salary costs in other Faculties					

Increases in FT faculty are for modeling purposes only and does not imply approval to hire. Normal approval pracesses apply.

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.*

Please indicate the likely space resource implications of the proposal	**Impact**	**New Sq Ft Required**	**Approx Existing Sq Ft required**	**Comments (include location and for new space, plans to fund and acquire apace)**	**If major new central budget req'd, estimate $**	
Faculty space- Offices,Labs,seminar rooms, student space, etc	Minor	-	2,242.0			*Facilties*
Other space (excluding registrar controlled classrooms)	Minor					*Facilties*

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

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

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

Please indicate the likely Library resource implications of the proposal	**Impact**	**Are additional resources required to support this program? If so, please list.**	**If Major, estimate $**	
Staffing (Add'l service desk staff, add'l librarians, new staff with skills/knowledge not currently present)	None			*Libraries*
Collections, One Time Purchases (books, ebooks, purchased online resources)	None			*Libraries*
Collections, Ongoing Subscriptions/licenses (print or online journals)	None			*Libraries*
Technology and Computing (new or add'l hardware/software, increased digital storage capacity)	Minor			*Libraries*

Library Spaces (study space, new or specialized user or collection spaces)	Minor			*Libraries*
Other (Please specify) - LAB / STUDIO SPACE	Minor			*Libraries*

4. OFFICE OF THE UNIVERSITY REGISTRAR - *Please contact the* ***Registrar*** *for assistance in determining impact if needed.*

Please indicate the likely resource implications of the proposal	**Impact** (Select)	**Support required**	**Area Responsible**	**If Major, estimate $**	
Admissions/Recruitment	Minor	Recruiting and Admissions aligned with current 101 processes	Faculty/Dept.		
Student Record Support (maintaining records, transcripts, grades, student card, etc)	Minor	Standard services for Undergraduate program			*Student Affairs*
Class Scheduling Services	Minor	Follows existing timelines/processes			*Student Affairs*
Classrooms	Minor	Requires less than Qty 5 classes of max 140 seats			*Student Affairs*

5. STUDENT SUPPORT - *Please contact* ***Assistant Dean, Student Services x27633*** *for assistance in determining impact if needed.*

Please indicate any other possible resource impacts	**Impact**	**Please Describe any impacts on the support areas**	**If Major, estimate $**	
Student Services - International Student support	None			*Student Affairs*
Student Services - Athletics & Rec, Health/Counselling, Career	None			*Student Affairs*
Residences	None			*Ancillaries*
Scholarships/Bursaries* *(Contact SFAS for more information)*	None			*Scholarships*

**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.*

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

7. OTHER

Please indicate any other possible resource impacts	**Impact**	**Please Describe any impacts on the support areas**	**If Major, estimate $**	
Financial Services	None			*Financial Affairs*
Human Resources	None			*HR*
Advancement	None			*UA*
Research Services Office	None			*Research Support*
Other (Please specify)	None			

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

		Check box
Department Chair/ Area Director	Claude Eilers (Acting Chair)	X
Faculty Dean or Director of Administration	Pamela Swett	X
Executive Director , Finance & Planning (Academic)	Linda Coslovi	X

Submitter Jeff Chuchman, Director of Finance & Administration (Acting)

McMaster University

Vice-President Research

Gilmour Hall 208
1280 Main Street, West
Hamilton, Ontario, Canada
L8S 4L8

Phone 905-525-9140 ext 27270

DATE: January 8, 2020

TO: University Planning Committee

FROM: Karen Mossman, Acting Vice-President Research

RE: Establishment of "Guidelines for the Governance and Review of Core Research Platforms"

Research facilities and platforms are a pivotal part of the University's research infrastructure, providing resources that support and enhance ground-breaking research. Some of these are complex, highly technical and often expensive sets of specialized equipment and/or services that are shared by many researchers.

Pan-University consultation took place with the research community throughout 2019. Through this consultation phase input was sought broadly from McMaster's Associate Deans Research and from Directors, Managers and key personnel from many of McMaster's most complex research facilities. These discussions identified the need for guidelines for the governance and review of core research platforms critical to the University's mission and for a transparent mechanism for supporting research infrastructure. The guidelines which were developed will allow the University to be informed of the status, progress, and financial viability of these research organizations, leading to better decision making, including decisions regarding support and sustainability. In particular, the guidelines will help the university and research community to:

- Define and identify McMaster's "Core Research Platforms";
- Ensure appropriate governance for Platforms;
- Request University support for Platforms through a transparent process.

A University Research Infrastructure Oversight Board (the "Board") will be established to oversee effective acquisition, implementation, operation and maintenance of McMaster's research infrastructure. Terms of reference for the Board are attached for your information. Also attached for context is the draft companion document *"Applying and Reporting to the University Research Infrastructure Oversight Board"* which will be further refined following discussion by the Board.

The policy has been reviewed by the Provost and Vice-President Academic, Associate Vice-President Research, Deans and Associate Deans Research of McMaster's six Faculties and personnel from the University Secretariat.

McMaster University

Complete Policy Title: **Guidelines for the Governance and Review of Core Research Platforms**	Policy Number (if applicable):
Approved by: **University Planning Committee** **Senate** **Board of Governors**	Date of Most Recent Approval:
Date of Original Approval(s):	Supersedes/Amends Policy dated:
Responsible Executive: **Vice-President Research**	Enquiries: **Office of the Vice President Research**

DISCLAIMER: *If there is a Discrepancy between this electronic policy and the written copy held by the policy owner, the written copy prevails*

1. Preamble

Research facilities and platforms are a pivotal part of the University's research infrastructure, providing resources that support and enhance ground-breaking research. Some of these are complex, highly technical and often expensive sets of specialized equipment and/or services that are shared by many researchers. These Core Research Platforms provide all McMaster researchers access to the instrumentation and technical support to push forward discoveries that will shape the future of our nation and our world.

The University leadership, through the University Research Infrastructure Oversight Board, will encourage the development and use of Core Research Platforms by researchers throughout the University. The importance of the platforms will be evidenced by the identification and proposed use of Core Research Platforms in research grant requests submitted to granting agencies and foundations. The expectation is that, wherever possible, newly acquired research infrastructure will be placed within a Core Research Platform; justification for why such infrastructure should be located outside a platform must be made to the University Research Infrastructure Oversight Board. Core research platforms should, wherever appropriate, operate on a fee for service basis and be accessible by external entities.

Normally, Core Research Platforms will be housed within established Institutes, Centers or Groups, or within Departments or Faculties. Accordingly, the governance (described below) of such platforms will be similar to that of Institutes, Centers or Groups, where a Dean or coalition of Deans will provide appropriate oversight. Regardless of the unit in which a platform is housed, it will be available to any McMaster researcher. There is an expectation that platforms will cooperate with each other and, wherever possible, collaborate.

2. Definition of Core Research Platforms

Core Research Platforms are designed to:

- provide all McMaster researchers access to infrastructure, services and expertise needed to advance the University's research mission;
- provide researchers with opportunities to extend the breadth of their research programs and integrate this research across disciplines;
- ensure the development and sustainability of equipment, facilities and entities for the future.

Core research platforms are intended to provide state-of-the-art infrastructure, services and technical expertise and to encourage new avenues of revenue generation through use by external academic, government and private sector users. Access by any user must be compliant with the operational rules of the platform (e.g. access restricted to those with appropriate training, commitment to pay the user fees, and, for infrastructure funded by a granting agency, priority access for the research described in the funding proposal).

Described within this document are criteria for Core Research Platforms. Core Research Platforms may be eligible to receive support from the University as overseen by the University Research Infrastructure Oversight Board. It is recognized that not all infrastructure at McMaster will sit within a defined Core Research Platform.

Criteria for Recognition as a Core Research Platform:

It is recognized that many research facilities and platforms exist at McMaster University. Key criteria for recognition as a Core Research Platform are listed below.

- Must have multiple users;
- Must be accessible to all potential McMaster users, including on a fee-for-service basis, as appropriate for that facility;
- Must not have more than 80% usage arising from a single faculty member;
- Should be able to demonstrate how the platform supports the Research Strategic Plan;
- Should support both research and training of research personnel including students.

Proposals for recognition as a Core Research Platform will be submitted to the University Research Infrastructure Oversight Board by the appropriate Dean or coalition of Deans. For proposal detail please see companion document "***Applying and Reporting to the University Research Infrastructure Oversight Board***"

The University Research Infrastructure Oversight Board may from time to time determine that a facility no longer meets the criteria required to be a "core research platform".

3. Governance and Review of Core Research Platforms:

The University must be informed of the status, progress, and financial viability of the research organizations which carry out its strategic interests. As such the University's Core Research Platforms must adhere to general practices of good governance with reporting structures which ultimately inform the VPR, relevant Deans and Associate Deans Research and the University Planning Committee as to their activities and financial standing.

Each platform will require a Director to oversee the purpose and direction of the platform. The Director will be a McMaster faculty member who will establish an Advisory Committee to provide advice to the Director with regard to priorities and directions for the platform. The Director may decide to strike other committees such as a Users Group who could provide input on user's needs.

Each platform will require an appropriately qualified Manager to oversee its day-to-day activity and management. The Manager will be a permanent or contract full time or regular part time employee of the University. In cases where the platform is small, the Director and Manager may be the same person.

Reporting requirements

Annual reporting will provide the University with information needed for strategic planning and decision making. The Director will provide a report to the appropriate Dean or coalition of Deans who, in turn, will provide the Director's report, and the Dean's response to the report, to the University Research Infrastructure Oversight Board. The Board will submit a summary of the reports, along with their comments, suggestions and decisions to the VPR who will report to the University Planning Committee for information. Reports will be provided, at minimum, annually. For reporting requirements please see companion document "***Applying and Reporting to the University Research Infrastructure Oversight Board***"

External funding sources such as research grants will continue to be the first option for funding research infrastructure and operations. Requests for new or additional central university funding in support of renewal of research equipment or certain operational needs such as technical support, where required, may be made as part of the annual reporting process to the University Research Infrastructure Oversight Board**.** The Board will make decisions on funding for renewal of research equipment or certain operational needs, where required.

4. Financial Matters

All Institutes, Centres and Groups are expected to adhere to the University's financial policies and procedures as established or amended from time to time.

McMaster Research Infrastructure Oversight Board

DRAFT Terms of Reference

1. Purpose

The mandate of the McMaster Research Infrastructure Oversight Board ("the Board") is to oversee effective acquisition, implementation, operation and maintenance of McMaster's research infrastructure.

McMaster recognizes that access to specialized research equipment and technical expertise is essential to advancing basic research and competing on the world's research stage. Across our campus—from department-based laboratories to suites of equipment housed within centres and institutes to state-of-the-art national research facilities—research infrastructure provides our researchers the cutting-edge methods and tools required to impact their fields of research and enhance Canada's national research landscape. Suites of research infrastructure are often complex and highly technical sets of specialized equipment and/or services that are shared by many researchers. Increasingly these form "Core Research Platforms" which provide all McMaster researchers access to the instrumentation and technical support to push forward discoveries that will shape the future of our nation and our world.

The University leadership, through the University Research Infrastructure Oversight Board, will encourage the development and use of Core Research Platforms by researchers throughout the University. Core Research Platforms will be managed in accordance with the following principles:

- Funding of Core Research Platforms will be managed and adjudicated with clear and transparent processes to access funding;
- Requests for investments from the University should be tied to the University's Research Strategic Plan;
- Management and reporting of the funds should be strategic and transparent;
- Support for Research Platforms should benefit all Faculties in a clear and equitable fashion and should be in accordance with need.

2. Membership

Official members of the Board will be;

- Vice-President, Research
- Associate Vice-President, Research
- Vice-Dean, Research

- Associate Dean Research or Associate Deans Graduate Studies and Research from each of McMaster's six Faculties.

The Chair of the Board shall be the Vice-President Research.

The Vice-Chair of the Board shall be the Associate Vice-President Research.

The Board will be supported by the Assistant Vice-President Research Administration and the Director, Research Platforms Support.

3. Meetings:

Meetings will be organized by the Office of the Vice-President, Research. It is anticipated that there will be two meetings/per year at minimum.

The Chair may invite guests to attend meetings as required. Members may recommend the invitation of guests to the Chair.

Any Member may propose an in-camera session of the Board.

Delegates are not permitted.

4. Responsibilities:

The primary responsibilities of the University Research Infrastructure Oversight Board are:

(a) Receive applications for recognition of a research facility as a Core Research Platform; approve recognition for facilities meeting the criteria outlined in McMaster's **Guidelines for the Governance and Review of Core Research Platforms;**

(b) Determine when, as appropriate, a facility no longer meets the criteria required to be a Core research Platform;

(c) Participate in the process for requesting support from funding agencies for major research infrastructure acquisition, operations and maintenance;

(d) Oversee, adjudicate and approve requests for university support for renewal of research equipment;

(e) Oversee the process for allocating university resources, including CFI IOF funding, in support of operation and maintenance of research infrastructure;

(f) Develop and regularly review guidelines on the nature of research structure expected to be housed in Core Research Platforms

(g) Review and approve or deny requests to locate research infrastructure outside of a core research platform;

(h) Review annual reports submitted by core research platforms. Submit a summary of reports, along with the Board's comments, suggestions and decisions to the Vice-President Research.

Members of the University Research Infrastructure Oversight Board shall:

(a) attend and actively participate in the meetings;

(b) transact such business as is placed on its agenda;

(c) provide the agenda and the minutes of its meetings to key stakeholders, including Faculty Deans;

(d) reinforce that external funding sources such as research grants will continue to be the first option for funding acquisition, operation and maintenance of research infrastructure.

Members of the Board shall expect:

(a) that each member will be provided with complete, accurate and meaningful information in a timely manner;

(b) to participate in open, honest and respectful discussions;

(c) to be given reasonable time to discuss key items

5. Quorum

Five members of the Board shall constitute a quorum.

6. **Decision Making**

   Members shall have voting rights. Each member shall be entitled to one (1) vote. The result of a vote shall be decided by a majority of votes of the members present at the meeting. Any motion resulting in a tie vote shall be deemed to have been defeated. Voting by proxy is not permissible.

7. **Minutes**

   Minutes will be taken at each meeting and shall be approved at subsequent meetings.

Terms of reference for the University Research Infrastructure Oversight Board may be amended, varied or modified in writing after consultation and agreement by the members of the Board.

DRAFT - This document will be a companion to "Guidelines for the Governance and Review of Core Research Platforms" and will assist the research community in applying and reporting to the University Research Infrastructure Oversight Board, a new Board to be established in the new year. The Board will determine the needs for facilities applying to be recognized as a core research platform and for annual reporting. This document is DRAFT and is provided for context only. Templates to support applying and reporting will also be developed, in discussion by the Board.

Core Research Platforms

Applying and Reporting to the University Research Infrastructure Oversight Board

Purpose: The purpose of this document is to assist with the preparation of documentation for submission to the University Research Infrastructure Oversight Board. It acts as a companion to the "**Guidelines for the Governance and Review of Core Research Platforms**"

Seeking Recognition as a Core Research Platform:

Key criteria for recognition as a Core Research Platform are listed below.

- Must have multiple users;
- Must be accessible to all potential McMaster users, including on a fee-for-service basis, as appropriate for that facility;
- Must not have more than 80% usage arising from a single faculty member;
- Should be able to demonstrate how the platform supports the Research Strategic Plan;
- Should support both research and training of research personnel including students

Core Research Platforms may be eligible to receive support from the central University as overseen by the University Research Infrastructure Oversight Board.

A proposal for recognition as a Core Research Platform will be submitted to the University Research Infrastructure Oversight Board by the Dean or coalition of Deans who oversee the facility. The Proposal should be submitted using the ***University's Application for Recognition as a Core Research Platforms Template***. It is anticipated that requirements will include the following:

- The name and objectives of the facility;
- A list of users and their affiliations;
- Description of organizational structure;
- List of research equipment,
- Costs and resources for operating and maintaining the facility, including:
    - Warranties or service contracts

McMaster University

    - Renewal of research equipment;
    - Consumables and space;
    - Software used for booking, billing and measurement of usage;
    - Dedicated technical and administrative personnel
- Fee schedule (both internal and external) with explanation and rationale of how fees have been determined. Fees schedule should be comparable to other entities or facilities, the intention is not to undercut or damage operations of existing entities or facilities.
- Members of advisory committee;
- Metrics to measure usage and effectiveness of facility and a description of how they are collected, determined and analyzed.

Reporting Requirements:
The Director will provide a report to the appropriate Dean or coalition of Deans on an annual basis at minimum. Reports will be reviewed by the University Research Infrastructure Oversight Board.

External funding sources such as research grants will continue to be the first option for funding research infrastructure and certain operations. Requests for new or additional central university funding in support of renewal of research equipment or certain operational needs, where needed, may be made as part of the annual reporting process to the University Research Infrastructure Oversight Board**.** The Board will make decisions on funding for renewal of research equipment or certain operational needs, where required.

The Report should be submitted using the ***University's Core Research Platforms Report Template***. It is anticipated that the report is likely to include:

- Demonstration that the entity met the needs of the research community at large as outlined in its annual plan.
- Summary report of meetings of the Advisory Committee and any resulting directions or plans.
- Annual report of metrics and achievements including any annual user surveys
- Up to date data base of users, income and expenditures
- Financial information for the current year with any explanation of significant variance, budget for upcoming year and quantification and plans for any reserves. Include both expenses and sources of funds.
- A three-year rolling plan that describes proposed changes to important operations, regulations and acquisition and disposal of equipment. Disposal of equipment will follow McMaster's policy on Capital Assets (Tracking and Disposition)
- Up to date fee schedule (internal and external) with explanation and rationale for both changes and maintenance of existing fees
- Objectives for the upcoming year
- Requests for university support for renewal of research equipment or certain operational needs, where required.

McMaster University

Vice-President (Research)

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L8S 4L8

Tel: 905.525.9140 Ext. 27270
Fax: 905.521.1993
Email: vprsrch@mcmaster.ca
http://www.mcmaster.ca/research

January 13, 2020

TO: University Planning Committee

FROM: Karen Mossman, Vice-President, Research (Acting)

RE: Proposal for Centre for Clinical Neuroscience (CCN)

The Committee on Research Institutes and Centres has reviewed the attached Proposal for Centre for Clinical Neuroscience (CCN), as per the policies and guidelines, and has been unanimously approved.

Please include this as an agenda item for the next University Planning Committee Meeting on January 22, 2020.

KM:jt

Attach.

cc: Susan Searls Giroux
Doug Welch
Andrea Thyret-Kidd
Paul O'Byrne

McMaster University | HEALTH SCIENCES

St. Joseph's Healthcare Hamilton

October 2019

Dr. Karen Mossman
Acting Vice-President, Research
Chair, Committee on Research Institutes
c/o Gilmour Hall, Room 208

Re: Proposed Centre – McMaster / St. Joseph's Centre for Clinical Neuroscience (CCN)

Dear Dr. Mossman,

On behalf of the Faculty of Health Sciences at McMaster and St. Joseph's Healthcare Hamilton, we would like to recommend the approval of a proposed new joint centre, the McMaster / St. Joseph's Centre for Clinical Neuroscience, as an official research centre at McMaster.

Please find a proposal for the Centre attached.

If you require further information, please do not hesitate to contact us.

Yours sincerely,

Dr. Paul O'Byrne
Dean and Vice-President
Faculty of Health Sciences
McMaster University

Ms. Melissa Farrell
President
St. Joseph's Healthcare Hamilton

cc: J. Bramson
J. Gauldie
N. Kates

Encl.

PO/MF:sm

McMaster University | Psychiatry & Behavioural Neurosciences

PROPOSAL FOR A CENTRE FOR CLINICAL NEUROSCIENCES

Prepared by:

Flávio Kapczinski, MSc MD PhD FRCPC
Director, Neuroscience Graduate Program

Nick Kates, MB BS FRCPC MCFP(hon)
Chair, Department of Psychiatry & Behavioural Neurosciences

November 2019

1. Official Name: McMaster / St. Joseph's Centre for Clinical Neuroscience (CCN)

2. Goal:

Short term goal: To establish a Centre for Clinical Neuroscience research in the existing wet lab facilities at St. Joseph's Healthcare Hamilton's W. 5th. Campus that will provide the physical, computational and staff infrastructure to harness multimodal datasets for clinical neuroscience research with a core of Computation and Big Data Analytics.

Long term goal: Establish a Canadian Pasteur Institute with a focus on Clinical Neuroscience in partnership with McMaster University and St. Joseph's Healthcare within the next five years.

3. Background: Data from the Public Health Agency of Canada shows that approximately 2.68 million Canadians suffered from a psychiatric disorder in 2016. Psychiatric disorders have a profound negative impact on quality of life, functioning, overall health and life expectancy. In Ontario alone, mental illness and addictions lead to the loss of more than 600,000 health-adjusted life years. Importantly, most major severe mental illnesses are highly heritable, have strong genetic underpinnings, emerge in childhood and adolescence and run a lifelong chronic course. A better understanding and treatment of psychiatric disorders is a major unmet need and the Canadian government has identified mental health as a top strategic priority, highlighting mood disorders and addiction.

The most accepted contemporary model of psychiatric disorders that emerged from large longitudinal studies indicate that they reflect an interaction between genetic risk and the environment, including early life adversity/trauma, drug addiction, and negative life events. When psychopathology is persistent and particularly when chronic depression takes place, the interplay between genes and environment triggers a state of chronic immune activation that is a risk factor for early mortality, accelerated aging and cognitive decline that later on in life translates into higher rates of dementia. In brief, the biological model for that is described in Figure 1. The proposed centre for clinical neuroscience will **focus on the underlying biology of trajectories of chronicity and disability in psychiatric disorders (neuroprogression)**.

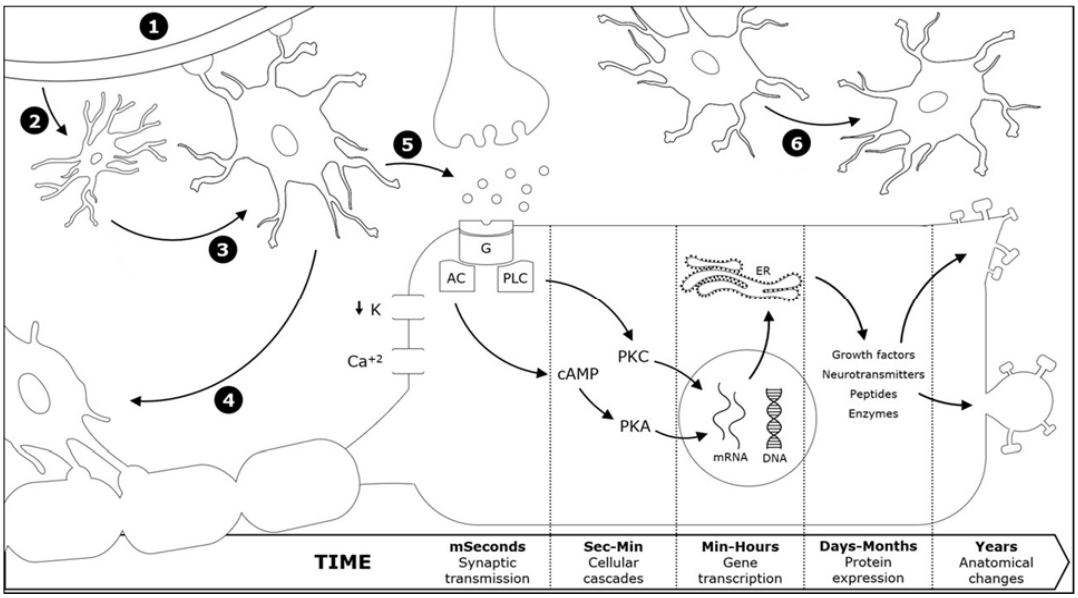

Figure 1. Cellular Components of Neuroprogression. 1) Chronic inflammation promotes change in blood-brain barrier that allows inflammatory cytokines as well as T cells to cross the blood-brain barrier. 2) Blood borne immune signals activate microglial cells. 3) Microglial cells activate astrocytes. 4) Activated astrocytes inhibit turnover of oligodendrocytes. 5) Activated astrocytes promote glutamatergic excitotoxicity. 6) Astrocyte calcium waves provide a specific form of excitability that involves the direct communication between the cytosol of two adjoining cells or the release of molecules that activates membrane receptors on neighboring cells. These alterations at molecular level, involving rapid changes in synaptic transmission, cellular cascades and gene transcription may promote more lasting changes in protein expression and ultimately would lead to long-term anatomical changes (neuroprogression).

4. Our Vision: A key feature of the CCN will be its ability to truly integrate the large amount of data from molecular genetics, neuroimaging, biological and clinical features using big data analytic approaches. Through this we will gain a better understanding of trajectories of disability and chronicity. We aim to predict clinical outcomes at the early stages and develop better personalized treatment plans for psychiatric patients. The close collaboration of the CCN with the Ontario Brain Institute (OBI) will allow for the development and testing of risk calculators for complex outcomes such as disability and risk of relapse into mood disorders and addictions.

The CCN will bring together key faculty from the Department of Psychiatry & Behavioral Neurosciences and St. Joseph's HealthCare Hamilton and other partners from McMaster University. It will take a societal as well as a clinical perspective and will emphasize the translation and application of new knowledge and discoveries to individual patient's organizations (improving treatment efficacy across a system) and communities (population focus).

The CCN will use in-house resources and expertise (rather than outsourcing) to curate, analyze and integrate existing datasets and will play an active role in gathering new datasets. Importantly, with the use of existing campus compute servers and resources the CCN will not require a major investment in infrastructure for the initial stages.

5. Specific Aims: At present, the neuroscientists in the Department of Psychiatry and Behavioural Neurosciences at SJHH/McMaster are working in relative isolation on individual programs of research, with limited opportunity to engage in shared projects or in more ambitious data analytic projects. The establishment of the Centre will bring faculty together within a shared research framework of pathways of chronicity and disability associated with severe psychiatric disorders. The research aims of the CCN will be achieved by:

1) Providing a focal point that will revitalize neuroscience research and advance the strategic directions of SJHH and McMaster.

2) Creating a physical space that will bring together faculty (and learners), who currently are scattered across multiple locations, sites and Faculties, to discuss and explore new possibilities for their research, address new questions that are beyond the scope of individuals working alone by pooling and optimizing their collective resources .

3) Developing a common agenda that will integrate the various groups interested in translational neuroscience research with a particular focus in the longitudinal course of mental illness and disability in the adult (neuroprogression).

4) Providing access to shared central resources, including research assistance and wet lab facilities.

6. Main research question: Assess the mechanisms associated with the progression of psychiatric disorders into trajectories of early disability and the propensity for developing dementia.

In recent years the literature on mood disorders, has shifted from control of symptoms to the management of long term trajectories (Duffy et al., 2016). Overall, the early and effective treatment of psychopathology is associated with optimal functioning and more favorable health outcomes. In contrast, the risk of recurrence increases with the number of acute episodes of disorders and untreated psychopathology. An increasing number of episodes is associated with: 1. Increasing risk of recurrence of episodes, 2. Increasing duration of episodes, 3. Increasing symptomatic severity of episodes, 4. Decreasing threshold for developing episodes, 5. Increasing risk of developing dementia. This increased severity over time is called clinical progression (Kessing and Andersen, 2017). Clinical progression happens in several psychiatric conditions such as addictions, PTSD, OCD, depression and bipolar disorder. The biological basis for clinical progression is called neuroprogression (Yatham et al., 2018). Our group helped developing the concept of neuroprogression and is a leading player in the field. We were among the first to describe how neuroinflammation plays a role in recurrent mood disorders (Kapczinski et al., 2015; Kapczinski et al., 2019). Microglial and astroglial activation (Rao et al., 2010) with consequent reduction in the turnover of oligodendrocytes (Vostrikov et al., 2007; Uranova et al., 2004) have been reported in post mortem studies in depression and bipolar disorder. Microglial cell activation has been shown in vivo in bipolar disorder (Haarman et al., 2014) and in major depression (Setiawan, et al. 2018). More recently our group discovered that such neuroinflammation is translating into in vivo reduced density of oligodendrocytes (Sehmbi et al., 2018, CIHR Catalyst Grant - active, Figure 3) and increased permeability at the blood-brain barrier level (Patel and Frey, 2015; PSI Foundation Operating Grant - active). In our journey describing neuroprogression in

chronic mood disorders we provided a framework for different groups interested in studying the pathways of chronicity and disability in psychiatry, involving 1. Early programming of psychiatric disorders in childhood and adolescence, 2. Synaptic modelling and psychiatric disorders in the youth and in the adult, 3. Pathophysiology of PTSD, 4. Pathophysiology of brain damage associated with addictions, 5. Pathophysiology of chronic anxiety disorders, 6. Differential illness trajectories in Autism, 7. Trajectories of healthy brain aging and 8. Chronic psychiatric disorders and accelerated brain aging as a risk factor for the development of dementia. This is aligned with the areas of expertise in clinical and basic neuroscience on campus and with the research interests and research network within the Department of Psychiatry and Behavioral Neurosciences (DPBN). The recurring theme that connects all these areas if the **field of adult neuroplasticity and neuroprogression in psychiatric disorders** (Sailor, Schinder and Lledo, 2017).

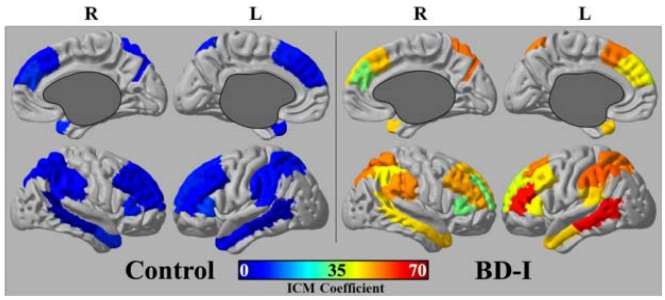

Figure 2. The slope of the linear relationship between intracortical myelin (ICM) and verbal memory performance in controls and bipolar disorder subjects. Each population was fitted individually to find the coefficient for the ICM term. On the left of the figure, the control population shows a globally blunted slope of verbal memory performance over ICM-related T1-weighted signal, with values ranging between 3.8 and 13.9. On the right, the bipolar disorder population displays values between 35.2 and 64.4, suggesting a much greater influence of ICM signal on verbal memory performance in bipolar disorder, in comparison with controls. L, left hemisphere; R, right hemisphere; BD, bipolar disorder.

7. Our unique strengths: Currently we are the second most cited group in psychology/psychiatry in Canada and among the 16 most cited among all areas at McMaster University (Clarivate Analytics 2018). Most of the research in the field of neuroprogression has been carried out by our own group in cooperation with partners included in the proposal and more recently with the partnership developed with the Pasteur Institute in France (Dargel et al., 2018 - see Appendix). We have a well-funded portfolio in the areas of addictions, mood disorders and adult neuroplasticity (Table 1). Our team has extensively documented expertise in all areas that we plan to develop at CCN. We were pioneers in the field of psychiatric genetics identifying a novel genetic variant in depression (Samaan et al. *Molecular Psychiatry,* 2013), micro-RNA markers of antidepressant response (Lopez et al, *Nature Communications*, 2017) and novel genetic variants responsible for impulsive behavior (Sanchez-Roige et al., 2017, *Nature Neuroscience*). Our CIHR-funded study on opioid use disorder is the largest cohort study investigating genetic, biological and social determinants of opioid addiction and treatment outcomes. The creation of the CCN will provide platform for expanding this area of research with **focus on trajectories of chronicity and disability in psychiatric disorders (neuroprogression)**.

Table 1. Current Funding from Main Investigators relevant to the work of the CCN.

Period	Grant	Title	Funding	Investigators
2018/4 - 2020/4	CFI Canada Foundation for Innovation	The Biological Signatures of Clinical Progression in Bipolar Disorder.	$140,000	Kapczinski, PI
2018/7 - 2020/6	CIHR Catalyst Grant	Intracortical Myelin as a Mechanism for Sex Differences in Major Depressive Disorder	$137,900	Frey, PI
2016/7 - 2020/6	CIHR Project Grant	The Longitudinal Course of Intracortical Myelination and Cognitive Function in Bipolar	$925,044	Frey, PI
2018/2 - 2020/2	PSI Foundation Operating Grant	A Translational Study of Blood-Brain Barrier Disruption in Bipolar Disorder: Implications for a new pathway for drug development	$187,000	Frey, PI
2014/4 - 2019/3	Ontario Ministry of Research and Innovation	Predictors of Treatment Response in Individuals with Depression	$150,000	Frey, PI
2013/7 - 2018/6	CIHR Operating Grant	Predicting Antidepressant Treatment Response in Major Depressive Disorder: An Integrated Clinical and Neuroimaging Approach	$893,950	Frey, Co-Inv
2013/4 - 2018/3	Ontario Brain Institute Discovery Grant	Canadian Biomarker Integration Network for Depression (CAN-BIND)	$18,000,000	Frey, Co-Inv
2018/4 - 2023/3	CIHR Project Grant	Pharmacogenetics of Methadone Maintenance Treatment Response	$1,116,900	Samaan, PI; MacKillop, Co-PI

2018/3- 2019/2	CIHR Catalyst Grant	Impact of cannabis legalization on cannabis use and outcomes in patients with opioid use disorder: a Canadian prospective cohort study	$100,000	Samaan, PI; MacKillop, Co-Inv
2017/7 - 2018/6	CIHR Bridge Funding	Pharmacogenetics of Methadone Maintenance Treatment Response	$100,000	MacKillop, PI; Samaan, Co-PI
2016/4 - 2018/11	HAHSO Grant	Health Innovation in Managing Opioid Addiction	$191,758	Samaan, PI; MacKillop, Co-Inv
2016/10-2017/12	St. Joseph's Healthcare Foundation	Genetics of Opioid Addiction	$40,000	Samaan, PI

8. A unique opportunity: Our translational research in the field of mood disorders and addictions generated a stable flow of funding, innovation, publications and citations. Apart from the support received from the FHS and the St Joseph's Hospital, we have recently formalized an agreement for developing a joint research unit (Unite Mixte de Recherche) between clinical neuroscience at SJHH/McMaster and the Neuroscience Unit at the Pasteur Institute (please refer to the Director of International Affairs and Director of Neuroscience at Pasteur for further details). Our five years strategic plan (contingent on achieving milestones of excellence and funding) is to develop an Affiliated Pasteur Institute with a focus on Clinical Neuroscience at the West Fifth Campus. Our contribution to Pasteur's agenda is to add the clinical component and research on how chronic psychiatric disorders develop into vulnerability for dementia (neuroprogression). The study of **vulnerable populations with a clear focus on neuroprogression creates the unique opportunity of early interventions in populations at risk for developing dementia**, aligned with the new business plan of Pasteur Institute that included neurodegenerative diseases among their priorities.

9. Research Approach: We will establish a transformational pipeline of research on adult neuroplasticity and chronic psychiatric disorder - from the bench to the clinic. Our focus will be on the mechanisms whereby stress, addictions and mood episodes interact generating a malignant transformation of psychiatric disorders into chronic and debilitating conditions (Post, 2018). In this sense our research approach is a radical departure from a status quo where the specific mechanisms underlying discrete psychiatric entities are investigated. **Our focus is on the pathways of chronicity and disability in psychiatry (neuroprogression)**. The main components of our research will be (Figure 3). Please see Appendix 1.

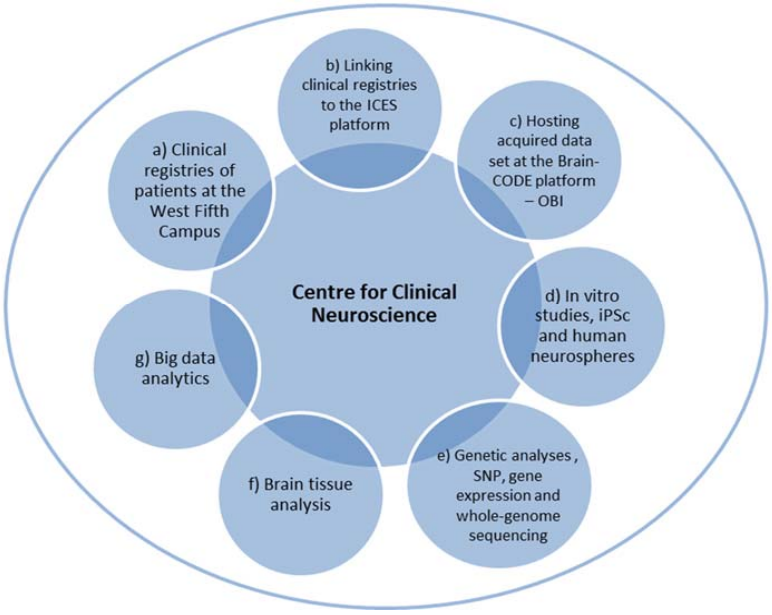

Figure 3. Centre for Clinical Neuroscience main components of research.

10. Membership: The CCN will be led by a core group of principal investigators (PIs) with extensive expertise in the neurobiology of mood disorders and addictions. A number of researchers from SJHH / Department of Psychiatry & Behavioral Neurosciences (DPBN) who work in related areas will join the CCN as associate members. Members of CCN will share the goal of advancing clinical neuroscience research, as aligned with the strategic directions of SJHH and DPBN.

10.1. Criteria for Membership

Members of CCN share the goal of advancing research on clinical neuroscience applied to the field of mental health. Core members will be SJHH/McMaster faculty members who identify CCN as their primary source for neuroscience research and big data analytics. Given the broad, translational scope of CCN, we will also welcome associate members who are engaged in other research institutes or centers at SJHH/McMaster.

10.2. Core Members

Initially, CCN will be based around researchers working in the Department of Psychiatry & Behavioral Neurosciences (PBN) and their current partners. Together, the core- and associate members of the CCN have published over 850 peer-reviewed articles in the last 5 years, with a total number of citations of 77,510 in the same period. It will gradually expand the scope of its activities as more collaborators and partners join the Centre. Core members will include:

Flavio Kapczinski, MSc, MD, PhD, FRCP(C)

Expert in molecular biomarkers in bipolar disorders and the second most cited Canadian researcher in the field of psychiatry/psychology in the last five years. His molecular studies were pioneer in

the understanding of the role of inflammation, oxidative stress and neurotrophic factors in the neurobiology of bipolar disorder.

Benicio Frey, MSc, MD, PhD
Expert in the neurobiology of bipolar and major depressive disorders. He is the site-PI of the largest study of biomarkers of antidepressant response in Canada (www.canbind.ca), which includes clinical, molecular genetics, neuroimaging and data science cores.

Zena Samaan, MBCHB, DMMD, MSC, MRCPSYCH, PhD
Expert in psychiatric genetics research in depression and addictions. Dr. Samaan leads large CIHR projects in genetics in opioid addiction and international collaborations on genetics of depression. Her research on the genetics of depression is highly cited and has attracted significant media attention. She currently leads a large cohort study on opioid and cannabis investigating genetic variants as predictors of risk and markers of response to treatment as well as depression RCT where neurotransmitters' gene expression is being investigated as a marker of response to treatment.

James MacKillop, PhD
Expert in translational research on addictions. Dr. MacKillop is the Director of the Peter Boris Centre of Addiction Research and Director of the Michael G. DeGroote Centre for Medicinal Cannabis Research. He is currently leading CIHR- and NIH-funded projects investigating the genetic, environmental, and psychological determinants of addiction.

10.3. Associate Members
Faculty members that work in close association (IB, IP, JR, MA, NS, PM, LM, NB) with the core members (FK, BF, JM, ZS) or bring key expertise (PM, JR, NB) to achieve excellence in the different foci mentioned in Figure 4. Associate members will add granularity and different approaches to the questions addressed by the core members. In addition, associate members will broaden the basis of graduate students and clinical and research fellows to the CCN. All core members and associate member already work at the West Fifth Site in areas covered by the CCN with the exception of Jim Reilly and Paul McNicholas and Nick Bock, who will provide supervision to the work conducted at CCN in an intermittent basis.

Iris M. Balodis, PhD - Joint research with James MacKillop (core member0
Assistant Professor at DPBN, Dr. Balodis' research focuses on motivational processes influencing maladaptive decision-making; specifically, this entails examining arousal, emotion and anticipation that direct behaviour.

Ives Passos, MD, PhD - Joint research with Dr. Flavio Kapczinski (core member)
Collaborator of the DPBN, Dr. Passos' research focuses on mood disorders, suicide, and neuroinflammation, with the use of machine learning and big data analytic tools.

Jim Reilly, PhD - Joint research with Dr. Flavio Kapczinski and Ives Passos (core members)
Professor Emeritus at the Department of Electrical Engineering and Computing, Dr. Reilly's research focuses on the interface of machine learning and signal processing applied to health-related problems, particularly in neuroscience and psychiatry.

Luciano Minuzzi, MD, PhD
Assistant Professor at DPBN, Dr. Minuzzi's research focuses on brain imaging techniques and its clinical implications in mental health disorders, with special interest in neuroimaging core data analytics.

Michael Amlung, PhD - Join research with Dr MacKillop (core member)
Assistant Professor at the DPBN, Dr. Amlung's research seeks to understand the neurobiological and behavioural correlates of pathological decision-making and motivation, especially in the context of substance abuse and other unhealthy behaviors.

Nicholas Bock, PhD
Associate Professor at the Department of Psychology Neuroscience and Behavior, Dr. Bock's research investigates how the structure of the brain gives rise to function, with an emphasis on the cerebral cortex. His lab develops *in vivo* techniques for mapping the properties of the cortex using magnetic resonance imaging (MRI) and computational neuroimaging in humans and animals.

Noam Soreni, MD, FRCPC -
Associate Professor at the DPBN, Dr. Soreni's clinical and research work focuses on the biological and cognitive correlates of pediatric Hoarding, Obsessive Compulsive Disorder, and brain imaging.

Paul McNicholas, MA, MSc, PhD, P.Stat.
Professor and Canada Research Chair, Department of Mathematics and Statistics, Dr. McNicholas' research focus on computational statistics, especially identification of heterogeneity. Current research includes work on advanced analytics, non-Gaussian mixtures, pattern recognition, growth mixtures, matrix variate distributions, and real problems in big data analytics.

11. Graduate students and research fellows: Generally, members will bring along, on average, three graduate students or fellows to work in close association with the CCN. The CCN will not provide space for all faculty and students at all times, but will accommodate 20 graduate students and fellows as well as 2 supervising PIs that will alternate their presence in the space. An extended community of about 40 students and faculty will be housed at the research areas of the West Fifth Site and will interact closely with the personnel housed at CCN. Overall, we expect that the inner area of the CCN (Figure 1) will house about 22 staff in a permanent basis.

12. Location: The CCN will be physically housed within the state-of-the-art wet lab located at the SJHH West 5th Site (figure 4).

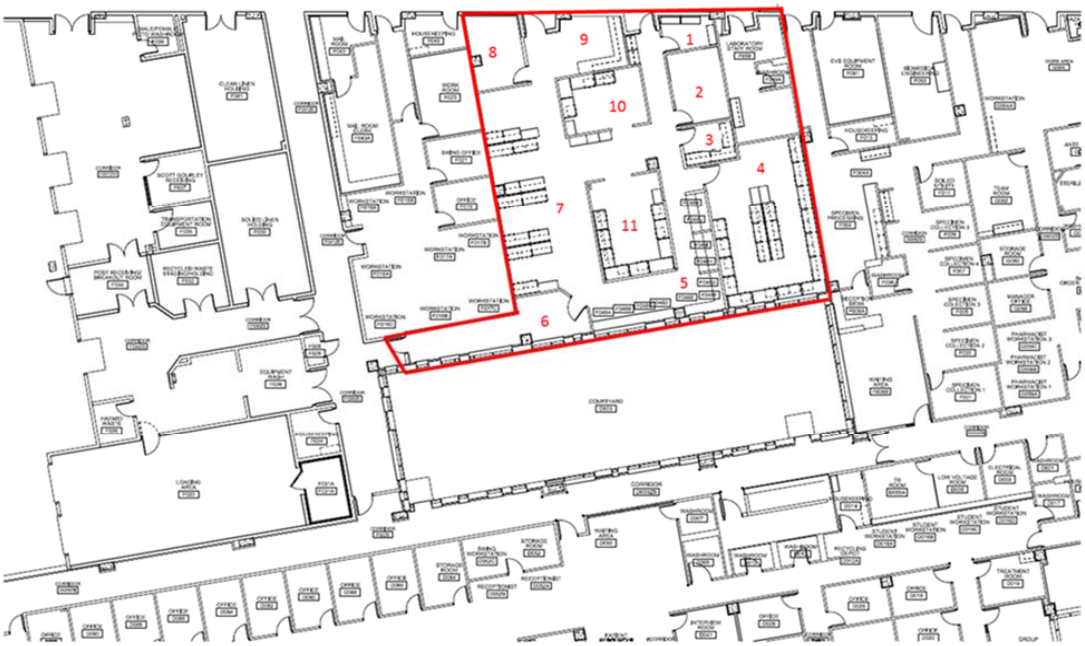

Figure 4. Floor plan of the basement in the West Fifth Site at SJHH. 1. Storage room; 2. Conference room; 3. Microscopy Analysis; 4. Lab work area; 5. 12 workstations for data processing; 6. Waste collection; 7. Bench work area; 8. Brain Tissue Storage; 9. Sample preparation; 10. Cell culture room; 11. Molecular and Protein analysis. All required equipment to run a state-of-the-art translational neuroscience laboratory are already in place. The remaining pieces of equipment will be purchased with SJHH Foundation and CFI grants - active.

St. Joe's will cover the ongoing costs attributed to this space.

13. Staff Resources

Initially, the Centre for Clinical Neuroscience (CCN) will require 5 personnel. These will be:

- A part-time Administrative Assistant
- A part-time Laboratory Technician
- A full-time Research Laboratory Manager
- A part-time Research Scientist Manager
- A part-time Research Analyst Manager

Administrative Assistant (part-time)
The administrative assistant will be responsible for the smooth day to day running of the CCN, the integration of the activities of its members, maintaining linkages between partners, preparing relevant documentation and reports and providing administrative support to Centre members.

Laboratory Technician (part-time)
The laboratory technician will process biological samples and prepare reagents as required for the analysis in accordance with documented procedures; retrieves and archives biological samples for storage and disposal. In addition, the laboratory technician will conduct general lab duties including material handling, cleaning of dishes and equipment, and other lab tasks and research as required. The laboratory technician will identify and communicates procedural non-conformances to supervisors. This person must have the ability to think analytically and to comply with Personal Protective Equipment (PPE) requirements and standard operating procedure (SOP) instructions; and must be self-motivated to work independently and thrive in a collaborative team environment.

Research Laboratory Manager (full time)
The research laboratory manager will be the contact person for the logistics of the laboratory, will be the site manager on an ongoing basis and will be the person through whom all issues related to the lab and its logistics will flow. In addition, the laboratory manager will be responsible for conducting biomarkers analysis and for performing molecular and protein techniques. This person will supervise students and follow up on work results. The laboratory manager will have a high level of knowledge of lab management, decision-making, and analytical skills; strong verbal, written, and interpersonal communication skills; and ability to work collaboratively with a research group or team. Also, will maintain professional and technical knowledge by attending educational workshops; reviewing professional publications; establishing personal networks; participating in professional societies.

Research Scientist Manager (part-time)
The research scientist manager will be responsible for coordinating, implementing and conducting scientific research involving complex cell culture approaches and analysis following established protocols in the assigned wet lab research area. The research scientist manager will implement cell culture experiments and perform cellular analysis in the CCN, besides training of new laboratory personnel in these methods. For this role, it is essential expertise on in vitro models and ability to run complex techniques requiring advanced specialized training, and ability to troubleshoot issues. In addition, this member will write technical protocols, reports and publications; organize and conceptualize ideas leading to new projects; participate in weekly laboratory meetings, and supervise students.

Research Analyst Manager (part-time)
A research analyst manager will oversee the conduction of clinical research, performing data management and statistical analysis, interpretation of the results, and writing reports presenting data related to clinical neuroscience. The research analyst manager needs to have expertise in the conduction of large epidemiological studies and managing large datasets. Activities will include the management, analysis, and interpretation of clinical and biological data.

14. Budget: At the present moment, all core-members, associate members, graduate students and administrative support personnel are covered by existing grants (Table 1). As previously described, the CCN will use in-house resources to curate and analyze existing datasets, and campus servers that are already in place, which will not require an initial major investment in infrastructure. The Faculty of Health Sciences, St. Joseph's Healthcare Hamilton Foundation and McMaster's Department of Psychiatry and Behavioural Neurosciences have all agreed to contribute $70,000 a

year for three years, to support the Centre Manager, Data Curator and Data Analyst as well as a small amount for operating expenses during this period, by which time it is anticipated that the Centre will be self-supporting, based on grants obtained. All other costs will be borne through the individual research programs of the members. (see Appendix 2)

The Faculty of Health Sciences has introduced a new policy regarding research overhead for institutes and centres that automatically directs a portion of overhead from all core members to a dedicated operating account for the institute/centre and no longer requires separate Dean/Chair approval. The Vice-Dean (Research) in FHS has reviewed the proposal as it related to funding and had no issues.

All core members of this Centre are based in FHS. Any central University policies with regard to overhead distribution will remain in force.

15. Organizational Structure

15.1. Leadership of the Centre

The Director will set the research and academic direction of the CCN in consultation with the Governing Board and Scientific Advisory Committee. The Director will articulate the leadership of the Centre, set milestones and provide the business plan. The Director will report annually to the Governing Board.

The Director will be appointed for a 5-year renewable term.

Pending approval by the University's governing bodies, Dr. Flavio Kapczinski is to be put forward for appointment as the inaugural holder of this position. Dr. Kapczinski is a leader in the field of research in mental disorders and currently serves as Director of the Neuroscience graduate program at McMaster.

An Associate Director with complementary skills will also be appointed in the future, also serving for a 5-year renewable term.

15.2. Proposed Governing Board

The Governing Board (GB) will evaluate the performance of the CCN considering its progress, the status of its members and its financial viability in accordance with McMaster's Guidelines for the Governance and Review of Research Institutes, Centres and Groups. According to our standard practice for joint institutes and centres, the GB will be co-chaired by the Dean and Vice-President of the Faculty of Health Sciences and the President of St. Joseph's Healthcare Hamilton. The remaining membership will be comprised, at minimum, of:

- Vice-Dean Research, Faculty of Health Sciences
- Vice-President (Research), St. Joseph's Healthcare Hamilton
- Chair, Department of Psychiatry and Behavioural Neurosciences
- Chair, Department of Psychology, Neuroscience and Behaviour
- Chief of Psychiatry, St. Joseph's Healthcare Hamilton
- Executive Director, Research Administration, St. Joseph's Healthcare Hamilton

The CCN Directors will report to the GB on an annual basis.

15.3. Proposed International Scientific Advisory Board
The Scientific Advisory Board (SAB) will provide advice to the Director(s) with regard to scientific or scholarly priorities and the direction for the Centre. The SAB is chosen by the Director(s) and is consulted at least every two years, or more frequently at the discretion of the Director. Potential members could include (none have yet been contacted)

- Professor Hugh MacKinnon (Board Chair of the Ontario Brain Institute)
- Professor Eduard Vieta (Professor of Psychiatry at the University of Barcelona and Chair of the Department of Psychiatry and Psychology at the Hospital Clinic. Director of the Bipolar Research Program at the Spanish Research Network on Mental Diseases - CIBERSAM)
- Dr. Pierre-Marie Lledo (Director of the Neuroscience Program at Pasteur Institute).

16. Operational Review

16.1. Annual Review
The Director of the CCN will send reports annually to the Governing Board chaired by the Faculty Dean or designate that will monitor the status, progress and plans of the centre. The reports will include updates on administration, objectives for the next year, financial status, research productivity, grants, educational initiatives, external collaborations and any other research activities involving the centre.

16.2. Periodic Review
According to the University's Guidelines for the Governance and Review of Research Institutes, Centres and Groups, the CCN will undergo an external review every five years in keeping with University guidelines and at the discretion of the Governing Board (GB). The composition of the External Review Board (ERB) will be determined by the GB, as co-chaired by the Dean and Vice-President of the Faculty of Health Sciences and the President of St. Joseph's Healthcare Hamilton.

The composition of the ERB will be determined by the GB and should take into account the aspirations of the Centre and the availability of funds to support the review. The ERB would normally comprise three high-calibre scholars with an international perspective, who must be arms-length from the Centre. The ERB will assess the performance of the Centre's Director and its scientific program. The ERB will be furnished with documents describing the University's policy on Research Institutes and will be asked whether performance is compatible with expectations described in the policy.

The ERB is expected to use accepted measures of performance such as publication number and impact to assess the Centre's contributions in comparison with those of (a) the Centre during the preceding 5 years and/or (b) with the performance of Centre's of similar size in the same field of research.

The recommendations of the ERB will include the renewal of the Director, and whether the Centre's performance is consistent with that of a joint Centre. Their report will be submitted in confidence to the GB via the Dean and Vice-President of the Faculty of Health Sciences and the

President of St. Joseph's Healthcare Hamilton. Normally, the Governing Board chair would share the ERB's report or major recommendations from the ERB's report with either the current Director, or the successor to the current Director, so that the leadership of the Centre benefits from the perspective of the ERB.

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Appendix 1. Research Approach.

The main components of our research will be:

a. Clinical registries of patients followed at the West Fifth Campus: we have ongoing and long-term funded projects in the area of mood disorders, opiate addictions, early programming of mental disorders, autism, cannabis and alcohol use disorders, anxiety disorders, youth mental health and the Cleghorn centre for early intervention in Psychosis.

b. Data from the clinical registries will be linked to the ICES platform using the resources and collaboration of Dr Benicio Frey and Dr. Flavio Kapczinski and the McMaster ICES team - Dr. Richard Perez and Lindsay Favotto (Figure 1).

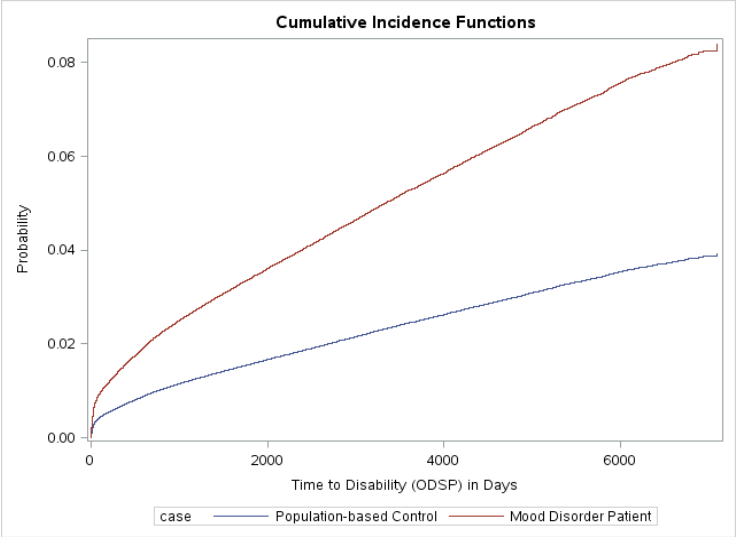

Figure 1. Cumulative incidence function of Ontario Disability Support Program (ODSP) among the specific mood disorder patients compared to birth and sex matched population-based controls, in Ontario between October 1, 1997 and March 31st, 2007 (N=139,148). Probability= probability of developing disability (ODSP). Preliminary data on file.

c. Host and support the merger and multimodal analyses across different registries in the neuroinformatics platform Brain-CODE (www.braincode.ca), developed by Ontario Brain Institute (OBI) and the Indoc Consortium. Brain-CODE will provide data management systems and support to capture, monitor and curate multi-modal clinical, imaging and molecular data, and systems for harmonization, integration, query, and analysis across modalities. Raw and curated datasets, including metadata, from clinical and neuropsychiatric assessments, MRI sessions and biomarker assays will be periodically uploaded by trained personnel to REDCap (Harris et al, 2009), XNAT (Marcus et al, 2007), and LabKey (Nelson et al., 2011) systems, respectively, through a secure data portal hosted

on Brain-CODE. A standard fMRI QA process supported by Brain-CODE will be used based on the fBIRN phantom and pipeline software. Each imaging center will scan the phantom on a monthly basis and upload the raw data to XNAT. The fBIRN QA pipeline will process these data within 24 hours of upload, and generate a full QA report stored within the session. The phantom and QA procedures are more formally described in Friedman & Glover (2006), and Glover et al., (2012). Permission-controlled access to all data will allow investigators to work collaboratively to aggregate and prepare datasets for machine learning analyses and to share results. Brain-CODE will also enable future release of de-identified datasets to the broader scientific community.

d. Implement in vitro studies with neuronal cellular models, such as induced pluripotent stem cells (iPSc), and human neurospheres (mini-brains) obtained from patients' cells to study, in a longitudinal way, biological pathways related to mental illnesses and screening for compounds that have potential therapeutic applications - in collaboration with Dr. Karun Singh, FHS. In addition, implement brain donation of patients followed at the West Fifth Campus in order to create a brain bank in CCN, as a long-term goal.

e. Genetic analyses such as single nucleotide polymorphisms (SNPs), gene expression and whole-genome sequencing in samples from patients enrolled in funded longitudinal studies will be analyzed in order to identify molecular mechanisms potentially associated with psychiatric disorders. In this sense, we have investigated the transcriptional regulation in the brain using big data from gene expression datasets and applying gene network-based approaches by innovative bioinformatics analysis. We have shown that the regulatory unit of early growth response gene 3 (EGR3) is repressed in post-mortem prefrontal cortex of BD patients (Pfaffenseller et al., 2016; Figure 2). Considering that EGR3 is an immediate early gene that responds very rapidly to stress with the potential to translate environmental stimuli into long-term changes in brain, *a disruption in this biological pathway may impair neuronal plasticity, and ultimately the brain's ability to adapt to stress and new experiences, influencing the risk for mental disorders*. After identifying this network as a potential key target in psychiatry, our group has performed a follow-up experimental evaluation to understand the potential molecular players involved in the reduced neurobiological resilience seen in psychiatric patients.

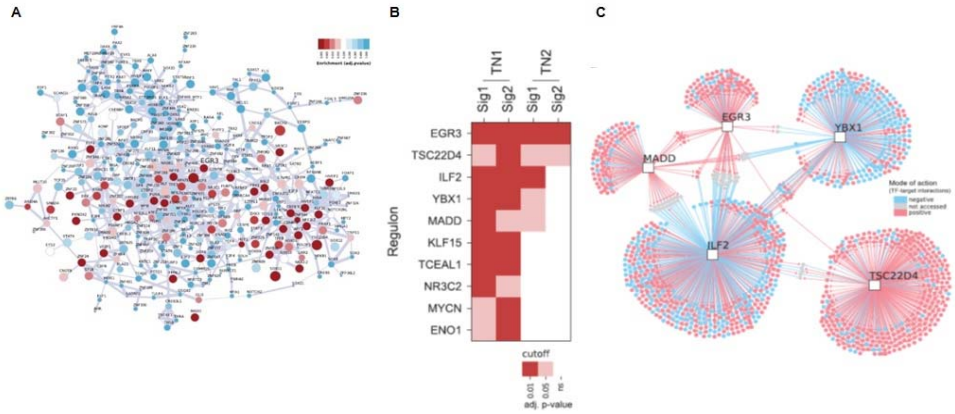

Figure 2. (A) A systems model of the human prefrontal transcriptional network, and the enrichment analysis using gene expression signature showing the distribution of the bipolar phenotype. **(B)** Consensus regulatory units (regulons) consistently enriched for two bipolar disorder signatures (Sig 1 and Sig 2). **(C)** Regulons associated with bipolar disorder. The regulatory network shows the transcription factor (square nodes) and its inferred targets (round nodes).

f. The CCN will also enable protein analysis and analysis of samples of cellular/animal models for the assessment of molecular mechanisms underlying mental disorders and addictions. In this sense, the CCN will investigate neuropathological changes in brain tissue from human post-mortem samples collected in collaboration with the Department of Pathology and Molecular Medicine at General Hamilton Hospital; and in brain tissue from animal models assessed at the Central of Animal Facility at McMaster University. Moreover, in order to further understand the brain structure and function in patients with psychiatric disorders and addictions, the CCN will integrate biological data with neuroimaging and electroencephalogram (EEG) by means of big data analytics.

g. Big datasets gathered at CCN (genetics, biomarkers, neuroimaging, and data from animal and cellular models) will be integrated and analysed using machine learning approaches, and risk calculators for unfavorable outcomes will be developed to help in clinical decision-making. In the past decade, there has been an explosion of computational and statistical techniques for analyzing multimodal data related to mental health disorders. That includes clinical, neuropsychological, neuroimaging, 'omics' and EEG. Consequently, a focus on the computational integration and analysis of complex sets of data is a key component in modern clinical neuroscience research. In this sense, recent cross-sectional studies from our group have shown that machine learning algorithms coupled with clinical data can predict key clinical outcomes in mental illness, at an individual level. We recently showed that the risk of suicide attempts can be predicted using clinical variables (Passos et al., 2016 - Figure 3), while data from our research network suggests that clinical variables can estimate functional impairment in psychiatric disorders with high accuracy (Pinto et al., in prep - Figure 4). We also showed that a model using brain imaging, support vector machine

and feature selection routines can potentially estimate functioning among psychiatric patients (Kapczinski et al, in prep). Using machine learning algorithms coupled with whole-brain scans, our group has also shown that psychiatric patients and controls can be differentiated (Mwangi et al., 2016 - Figure 5).

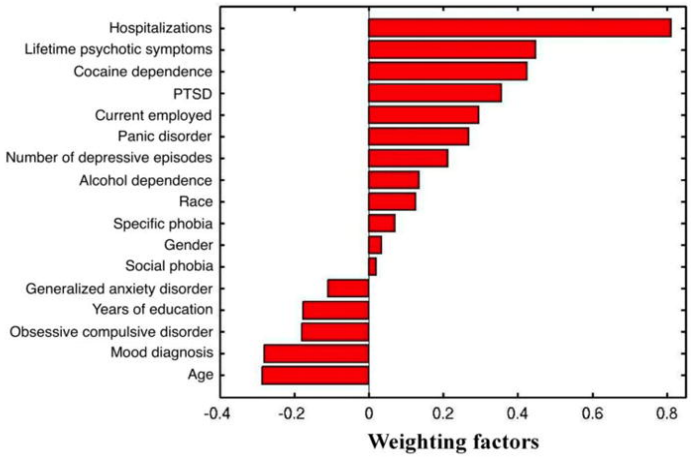

Figure 3. Bar graph showing weighting factors assigned to each clinical variable by relevance vector machine based on their relevance in distinguishing suicide attempters from non-attempters. Clinical variables which increase the probability of an individual patient being a suicide attempter were assigned positive weighting factors whilst those that decrease the probability of a patient being a suicide attempt were assigned negative weighting factors. PTSD= posttraumatic stress disorder.

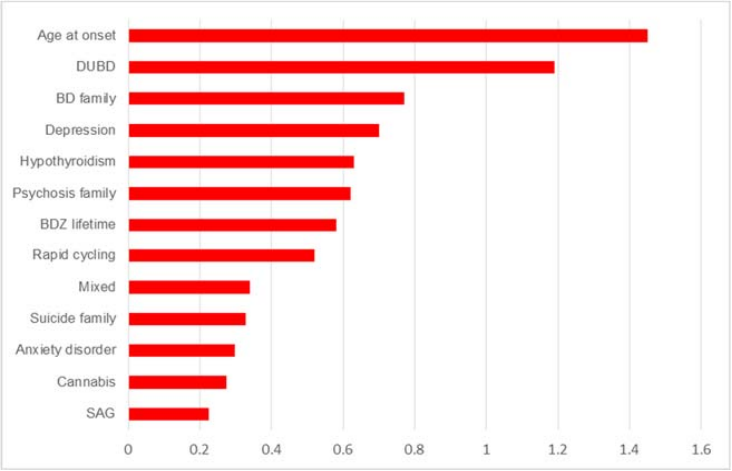

Figure 4. Bar graph showing factors based on their importance in differentiating patients with functional impairment from those without functional impairment. Anxiety: lifetime comorbid anxiety disorder; BD family: first-degree family history bipolar disorder; BZD lifetime: lifetime use of benzodiazepines; Cannabis: lifetime abuse or dependence of cannabis; Depression: type of first mood episode (depression); DUBD: duration of untreated bipolar disorder; hypothyroidism: lifetime hypothyrodism; mixed: type of first mood episode (mixed); Psychosis family: first-

degree family history psychotic disorder; Rapid cycling: presence of rapid cycling; SAH: systemic arterial hypertension; Suicide family: first-degree family history suicide attempts.

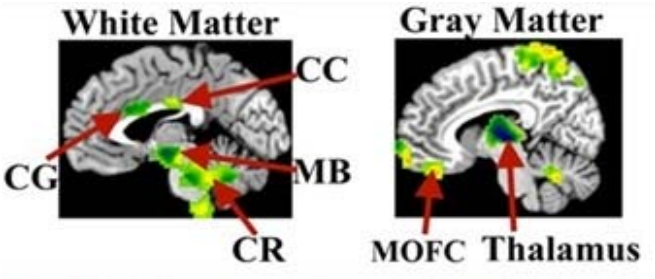

Figure 5. White matter brain regions identified during feature selection as most relevant in distinguishing patients with bipolar disorder from healthy control subjects. Gray matter regions most relevant in identifying patients with bipolar disorder from healthy control subjects. Green indicates anatomic regions with reduced gray/white matter density in patients with bipolar disorder compared with healthy control subjects. The cerebellum was used for post hoc tests because it reported the largest cluster size (391 voxels). White matter brain regions include cingulate gyrus (CG), corpus callosum (CC), midbrain (MB), and cerebellum (CR). Gray matter brain regions include medial orbitofrontal cortex (MOFC) and thalamus.

Appendix 2 - Budget

FHS, the Department of Psychiatry and to St. Joseph's Foundation / Research Institute have agreed to share these costs for the first three years, following which the Centre will-be self-sustaining.

		Year 1	Year 2	Year 3	Year 4	Year 5	Total	$ Secured	$ Anticipated
OPENING BALANCE/CARRY FORWARD		**$ -**	**$ -**	**$ -**	**$ -**	**$ -**	$ -		
REVENUE - indicate secured or anticipated		**Year 1**	**Year 2**	**Year 3**	**Year 4**	**Year 5**	**Total**	**$ Secured**	**$ Anticipated**
Please ensure that any anticipated revenue from grant funding will only support costs eligible for that grant and note funding available for indirect or general operations.									
St. Joseph's Healthcare Hamilton Foundation (SJHF)		$ 35,000	$ 70,000	$ 70,000	$ 35,000	$ -	$ 210,000	$ 210,000	
Faculty of Health Sciences		$ 35,000	$ 70,000	$ 70,000	$ 35,000	$ -	$ 210,000	$ 210,000	
Dept of Psychiatry		$ 35,000	$ 70,000	$ 70,000	$ 35,000	$ -	$ 210,000	$ 210,000	
Research Grants					$ 105,000	$ 210,000	$ 315,000		$ 315,000
TOTAL REVENUE		**$ 105,000**	**$ 210,000**	**$ 210,000**	**$ 210,000**	**$ 210,000**	$ 945,000	**$ 630,000**	**$ 315,000**
EXPENSES		**Year 1**	**Year 2**	**Year 3**	**Year 4**	**Year 5**	**Total**		
Administrative Expenses: *(add rows as required)*									
Personnel (costs include benefits);	% FTE (yr 2)						$ -		
Admin Assistant/Coordinator	0.5	$ 16,750	$ 33,500	$ 33,500	$ 33,500	$ 33,500	$ 150,750		
Lab Technician	0.5	$ 10,000	$ 20,000	$ 20,000	$ 20,000	$ 20,000	$ 90,000		
Research Laboratory Manager	1	$ 35,000	$ 70,000	$ 70,000	$ 70,000	$ 70,000	$ 315,000		
Research Scientifist Manager	0.5	$ 20,000	$ 40,000	$ 40,000	$ 40,000	$ 40,000	$ 180,000		
Resarch Analyst Manager	0.5	$ 20,000	$ 40,000	$ 40,000	$ 40,000	$ 40,000	$ 180,000		
Equipment: Licensing/Software		$ 2,500	$ 5,000	$ 5,000	$ 5,000	$ 5,000	$ 22,500		
Data Archiving: Brain-CODE provided by the Ontario		$ 750	$ 1,500	$ 1,500	$ 1,500	$ 1,500	$ 6,750		
Brain Inst (OBI)							$ -		
Ongoing costs for space to be provided by St. Joseph's Health Care Hamilton							$ -		
Total Administrative Expenses		**$ 105,000**	**$ 210,000**	**$ 210,000**	**$ 210,000**	**$ 210,000**	**$ 945,000**		
All other costs will be borne through the individual research programs of the members									
TOTAL EXPENSES		**$ 105,000**	**$ 210,000**	**$ 210,000**	**$ 210,000**	**$ 210,000**	**$ 945,000**		
IN-YEAR (Surplus/ Deficit)		**$ -**	**$ -**	**$ -**	**$ -**	**$ -**	**$ -**		

APPENDIX 2

McMaster/St. Joseph's Centre for Clinical Neuroscience

		Year 1	Year 2	Year 3	Year 4	Year 5	Total	$ Secured	$ Anticipated
OPENING BALANCE/CARRY FORWARD		$ -	$ -	$ -	$ -	$ -	$ -		

REVENUE - indicate secured or anticipated		Year 1	Year 2	Year 3	Year 4	Year 5	Total	$ Secured	$ Anticipated
Please ensure that any anticipated revenue from grant funding will only support costs eligible for that grant and note funding available for indirect or general operations.									
St. Joseph's Healthcare Hamilton Foundation (SJHF)		$ 35,000	$ 70,000	$ 70,000	$ 35,000	$ -	$ 210,000	$ 210,000	
Faculty of Health Sciences		$ 35,000	$ 70,000	$ 70,000	$ 35,000	$ -	$ 210,000	$ 210,000	
Dept of Psychiatry		$ 35,000	$ 70,000	$ 70,000	$ 35,000	$ -	$ 210,000	$ 210,000	
Research Grants					$ 105,000	$ 210,000	$ 315,000		$ 315,000
TOTAL REVENUE		**$ 105,000**	**$ 210,000**	**$ 210,000**	**$ 210,000**	**$ 210,000**	$ 945,000	**$ 630,000**	**$ 315,000**

EXPENSES		Year 1	Year 2	Year 3	Year 4	Year 5	Total
Administrative Expenses: ***(add rows as required)***							
Personnel (costs include benefits);	% FTE (yr 2)						$ -
Admin Assistant/Coordinator	0.5	$ 16,750	$ 33,500	$ 33,500	$ 33,500	$ 33,500	$ 150,750
Lab Technician	0.5	$ 10,000	$ 20,000	$ 20,000	$ 20,000	$ 20,000	$ 90,000
Research Laboratory Manager	1	$ 35,000	$ 70,000	$ 70,000	$ 70,000	$ 70,000	$ 315,000
Research Scientifist Manager	0.5	$ 20,000	$ 40,000	$ 40,000	$ 40,000	$ 40,000	$ 180,000
Resarch Analyst Manager	0.5	$ 20,000	$ 40,000	$ 40,000	$ 40,000	$ 40,000	$ 180,000
Equipment: Licensing/Software		$ 2,500	$ 5,000	$ 5,000	$ 5,000	$ 5,000	$ 22,500
Data Archiving: Brain-CODE provided by the Ontario		$ 750	$ 1,500	$ 1,500	$ 1,500	$ 1,500	$ 6,750
Brain Inst (OBI)							$ -
Ongoing costs for space to be provided by St. Joseph's Health Care Hamilton							$ -
Total Administrative Expenses		**$ 105,000**	**$ 210,000**	**$ 210,000**	**$ 210,000**	**$ 210,000**	**$ 945,000**

All other costs will be borne through the individual research programs of the members

TOTAL EXPENSES		**$ 105,000**	**$ 210,000**	**$ 210,000**	**$ 210,000**	**$ 210,000**	**$ 945,000**
IN-YEAR (Surplus/ Deficit)		**$ -**	**$ -**	**$ -**	**$ -**	**$ -**	**$ -**