McMaster University

UNIVERSITY SECRETARIAT
• Board of Governors
• Senate

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UNDERGRADUATE COUNCIL
Tuesday, December 10, 2019 at 2:30 p.m.
Gilmour Hall, Council Room (Room 111)

AGENDA

Page

1. MINUTES OF PREVIOUS MEETING – OCTOBER 29, 2019

Approval

3 - 6 **a.** Minutes - October 29, 2019

2. BUSINESS ARISING

3. CHAIR'S REMARKS

4. REPORT FROM THE AWARDS COMMITTEE

7 Report from the Awards Committee

a. TERMS OF AWARD

Approval

8 - 10 **i.** New Awards, New Bursaries, and Award Name Change

5. REPORT FROM THE CERTIFICATES AND DIPLOMAS COMMITTEE

11 Report from Certificates and Diplomas Committee

a. REVISIONS TO CERTIFICATE AND DIPLOMA PROGRAMS

Approval

12 - 13 **i.** Certificate in Business Technology Management

14 - 15 **ii.** Concurrent Certificate in Biomedical Sciences

6. REPORT FROM THE CURRICULUM AND ADMISSIONS COMMITTEE

16 - 18 Report from the Curriculum and Admissions Committee

a. CURRICULUM REVISIONS FOR THE 2020-2021 UNDERGRADUATE CALENDAR

Approval

19 - 21 **i.** Arts & Science Program
22 - 24 **ii.** Faculty of Business
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45 - 50 **iv.** Faculty of Health Sciences
51 - 164 **v.** Faculty of Humanities
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7. REPORT FROM THE AD-HOC COMMITTEE ON DEFERRED EXAMINATIONS

Approval

240 - 248 **a.** Final Report - Ad-Hoc Committee on Deferred Examinations

8. REVISED 2020-2021 SESSIONAL DATES

Approval

249 - 250 **a.** Revised 2020-2021 Sessional Dates

9. OTHER BUSINESS

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REPORT TO UNDERGRADUATE COUNCIL
from the
UNDERGRADUATE COUNCIL AWARDS COMMITTEE

FOR APPROVAL

I Terms of Award

At its November 12, 2019 meeting, the Undergraduate Council Awards Committee approved the following for recommendation to Undergraduate Council. Details of the proposed recommendations are contained in Attachment I of the circulated report.

i. New Awards

The Arts and Science Scholarships
The DeGroote School of Business Scholarships
The Dr. Paula Alexandra Meyer Scholarship
The Faculty of Engineering Scholarships
The Faculty of Health Sciences Scholarships
The Faculty of Humanities Scholarships
The Part-Time Students Scholarships
The Faculty of Science Scholarships
The Faculty of Social Sciences Scholarships

ii. New Bursaries

The Arts and Science Bursaries
The Faculty of Health Sciences Bursaries
The Interim Room Program Emergency Fund
The Part-Time Students Bursaries
The Faculty of Science Bursaries
The Dr. Ian Scott Cornell Bursary
The Dr. Barber Mueller Bursary
The Dr. Robin Richards Bursary
The Edward Vogelman MD Bursary

The Undergraduate Council Awards Committee now recommends,

that Undergraduate Council approve nine new awards and nine new bursaries, as set out in the attached.

FOR INFORMATION

II Award Name Change

At the same meeting, the Awards Committee also received, for information, one Awards Name Change.

Undergraduate Council
December 10, 2019

OFFICE OF THE REGISTRAR, STUDENT FINANCIAL AID & SCHOLARSHIPS
To Undergraduate Council
From Undergraduate Council Awards Committee
December 10, 2019

PROPOSED NEW AWARDS FOR APPROVAL

In-Course and Renewal Awards

The Arts and Science Scholarships
Established in 2019 by McMaster University.
Requirements: To be awarded to students enrolled in the Arts and Science Program on the basis of academic and, in some cases, other forms of earned merit.
Typically Available: 1x $1,500

The DeGroote School of Business Scholarships
Established in 2019 by McMaster University.
Requirements: To be awarded to students enrolled in the DeGroote School of Business on the basis of academic and, in some cases, other forms of earned merit.
Typically Available: 1x $1,500

The Dr. Paula Alexandra Meyer Scholarship
Established in 2019 by the estate of Dr. E. Constance Meyer who, along with her late husband Dr. Roberto J. Meyer, acknowledge the impact of McMaster University on the life and career of their daughter Dr. Paula Alexandra Meyer.
Requirements: To be awarded to students enrolled in Level II or above of a Mechanical Engineering program who attain high averages.
Typically Available: 1x $1,500

The Faculty of Engineering Scholarships
Established in 2019 by McMaster University.
Requirements: To be awarded to students enrolled in the Faculty of Engineering on the basis of academic and, in some cases, other forms of earned merit.
Typically Available: 1x $1,500

The Faculty of Health Sciences Scholarships
Established in 2019 by McMaster University.
Requirements: To be awarded to students enrolled in the Faculty of Health Sciences on the basis of academic and, in some cases, other forms of earned merit.
Typically Available: 1x $1,500

The Faculty of Humanities Scholarships
Established in 2019 by McMaster University.
Requirements: To be awarded to students enrolled in the Faculty of Humanities on the basis of academic and, in some cases, other forms of earned merit.
Typically Available: 1x $1,500

The Part-Time Students Scholarships
Established in 2019 by McMaster University.
Requirements: To be awarded to part-time students enrolled in any undergraduate degree program on the basis of academic and, in some cases, other forms of earned merit.
Typically Available: 1 x $800

The Faculty of Science Scholarships
Established in 2019 by McMaster University.
Requirements: To be awarded to students enrolled in the Faculty of Science on the basis of academic and, in some cases, other forms of earned merit.
Typically Available: 1x $1,500

The Faculty of Social Sciences Scholarships
Established in 2019 by McMaster University.
Requirements: To be awarded to students enrolled in the Faculty of Social Sciences on the basis of academic and, in some cases, other forms of earned merit.
Typically Available: 1x $1,500

PROPOSED NEW BURSARIES FOR APPROVAL

The Arts and Science Bursaries
Established in 2019 by McMaster University.
Requirements: To be granted to students enrolled in the Arts and Science Program who demonstrate financial need.

The Faculty of Health Sciences Bursaries
Established in 2019 by McMaster University.
Requirements: To be granted to students enrolled in the Faculty of Health Sciences who demonstrate financial need.

The Interim Room Program Emergency Fund
Established in 2019 by McMaster University.
Requirements: To be granted to students experiencing personal safety concerns related to their housing to help with the immediate costs of relocation so that they can continue to pursue their academic studies and reach their potential.

The Part-Time Students Bursaries
Established in 2019 by McMaster University.
Requirements: To be granted to part-time students enrolled in any undergraduate degree program who demonstrate financial need.

The Faculty of Science Bursaries
Established in 2019 by McMaster University.
Requirements: To be granted to students enrolled in the Faculty of Science who demonstrate financial need.

Submitted by the Faculty of Health Sciences

The Dr. Ian Scott Cornell Bursary
Established in 2019 by Dr. Ian Scott Cornell M.D (Class of 77) to commemorate the 50th Anniversary of the McMaster Medical School.
Requirements: To be granted to students enrolled in the Michael G. DeGroote School of Medicine who demonstrate financial need.

The Dr. Barber Mueller Bursary
Established in 2019 by Dr. Mark J. Magenheim, MD (Class of 74), to celebrate the 50th Anniversary of McMaster's medical school and in memory of Dr. C. Barber Mueller, an esteemed faculty member, who Joined McMaster in 1967 as the medical school was being established and contributed to the development of a new problem-based teaching model that revolutionized medical education around the world.
Requirements: To be granted to students in the Michael G. DeGroote School of Medicine who demonstrate financial need and an interest in a career in surgery.

The Dr. Robin Richards Bursary
Established in 2019 by Dr. Robin Richards (MD ’76) to commemorate the 50th Anniversary of the McMaster Medical School.
Requirements: To be granted to students enrolled in the Michael DeGroote School of Medicine who demonstrate financial need. Preference will be given to students from Guelph or Wellington County.

The Edward Vogelman MD Bursary
Established in 2019 from the Estate of Shirley Foran in memory of her father Edward Vogelman.
Requirements: To be granted to students enrolled in the Michael G. DeGroote School of Medicine who demonstrate financial need.

FOR INFORMATION

AWARD NAME CHANGES

The Yves & Cynthia Bled Canadian Future Achievers Award for Women in Engineering ~~Fund~~
The ~~Douglas Ian~~ Lois Aileen Menzies Brown Bursary

McMaster University

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REPORT TO UNDERGRADUATE COUNCIL
from the
UNDERGRADUATE COUNCIL
CERTIFICATES AND DIPLOMAS COMMITTEE

FOR APPROVAL

I. Revisions to Certificate and Diploma Programs

At its November 12, 2019, the Undergraduate Council Certificates and Diplomas Committee approved minor revisions to the following Certificate and Diploma Programs. Details of the proposed revisions are contained in Attachments I and II of the circulated report.

a. Certificate in Business Technology Management (Attachment I)
b. Concurrent Certificate in Biomedical Sciences (Attachment II)

It is now recommended,

that the Undergraduate Council approve revisions to the Certificate in Business Technology Management, as set out in the attached.

It is now recommended,

that the Undergraduate Council approve revisions to the Concurrent Certificate in Biomedical Sciences, as set out in the attached.

FOR INFORMATION

II. Establishment of New Certificate of Completion Programs

At the same meeting, the Certificates and Diplomas Committee received, for information, proposals to establish three Certificates of Completion.

a. Certificate of Completion in Enhanced Geriatrics Competencies & Education
b. Certificate of Completion in Entrepreneurship
c. Certificate of Completion in Engaging Teachers in STEM Education

[Details of the Certificate of Completion proposals are available for review in the University Secretariat.]

Undergraduate Council
December 10, 2019

FACULTY OF BUSINESS

BUSINESS TECHNOLOGY MANAGEMENT (BTM) CERTIFICATE REQUIREMENTS TO THE CERTIFICATES AND DIPLOMA COMMITTEE

NOVEMBER 2019

Certificate in Business Technology Management (BTM)

Notes

1. ~~The courses comprising the BTM certificate will count as elective courses for students enrolled in an Honours Bachelor of Commerce (B.Com.) program.~~
2. SFWRTECH 3IT3 and SFWRTECH 3PR3 are anti-requisites.

Admission

Enrolment in an Honours Bachelor of Commerce (B.Com.) program is required for admission to the certificate.

Requirements

27 units total

21 units

- COMMERCE 3KA3 - System Analysis and Design
- COMMERCE 3KD3 - Database Design Management and Applications
- COMMERCE 3KE3 - Management of Enterprise Data Analytics
- COMMERCE 4KF3 - Project Management
- COMMERCE 4KG3 - Data Mining For Business Analytics
- COMMERCE 4KH3 - Strategies for Electronic and Mobile Business
- COMMERCE 4KI3 - Business Process Management

6 units
from

- SFWRTECH 3CS3 - Computer Security
- SFWRTECH 3IT3 - Fundamentals of Networking
- SFWRTECH 3OS3 - Operating Systems
- SFWRTECH 3PR3 - Procedural and Object Oriented Programming Concepts
- SFWRTECH 3RQ3 - Software Requirements and Specification
- SFWRTECH 4SD3 - Software Design

Rationale: *Redundant note.*

McMaster University

Bachelor of Health Sciences (Honours) Program
Faculty of Health Sciences
Michael G. DeGroote Centre for Learning and Discovery

Room 3308
1280 Main Street West
Hamilton, Ontario, Canada
L8S 4K1

October 18, 2019

c/o Tristan Paul
Governance Coordinator
University Secretariat

Certificate & Diploma Committee Members:

BHSc (Hons) is submitting a minor curriculum change to its *Concurrent Certificate in Biomedical Sciences (BMS)* for the 2020/21 Undergraduate Calendar as shown below.

Brad Coburn, Curriculum Officer, Registrar's Office will present this change on our behalf at the next Certificate & Diploma Committee.

Concurrent Certificate in Biomedical Sciences (BMS)
Faculty of Health Sciences

The Concurrent Certificate in Biomedical Sciences is administered by the Bachelor of Health Sciences (Honours) Program.
Michael G. DeGroote Centre for Learning and Discovery, Room 3300, ext. 22815.
bhsc.mcmaster.ca

The Concurrent Certificate in Biomedical Sciences (BMS Certificate) is designed to provide students with an interest in biomedical research with an opportunity to develop an academic focus in this area, with the BMS Certificate serving to recognize that they have gained core knowledge in this area through their coursework.

Notes

~~1. **Selection to the BMS Certificate:** No formal application is required; however, because enrollment in HTHSCI 3V03 and 4AL3 is limited, students interested in completing the BMS Certificate should declare their intention to complete the certificate to the BMS Coordinator in the Bachelor of Health Sciences (Honours) Program so that the department can manage enrollment and offer academic counselling accordingly.~~

~~2.~~ 1. In order to obtain the BMS Certificate, at least 12 units (above Level 1) must be elective to the degree.

~~3.~~ 2. No more than 6 units can be counted toward both the BMS Certificate and a Biochemistry Minor.

Rationale: *The first note has been deleted. This year (19/20) was the first year we introduced the BMS Concurrent Certificate. We were uncertain last year when 19/20 curriculum was submitted if we would need students to declare their interest in the certificate as we phased-out the Biomedical Sciences Specialization in BHSc (Hons), and given the limited enrolment in HTHSCI 3V03 and 4AL3 – both courses are required for the specialization and concurrent certificate. After reviewing the process this year, we are confident that we can accommodate the students working towards the completion of the BMS Specialization and the BMS Concurrent*

Tel: (905) 525-9140 Ext 22815 Fax: (905) 540-3825 Website: http://www.fhs.mcmaster.ca/bhsc/

Certificate in these two courses without students having to declare their interest in the BMS Concurrent Certificate. This change will also eliminate any administrative barriers for the BMS Coordinator, BHSc Office and students working towards the BMS Concurrent Certificate.

Regards,

Teresa Basilio
BHSc (Hons) Program Manager
Faculty of Health Sciences.

McMaster University

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REPORT TO UNDERGRADUATE COUNCIL
from the
UNDERGRADUATE COUNCIL
CURRICULUM AND ADMISSIONS COMMITTEE

FOR APPROVAL

I Curriculum Revisions for Inclusion in the 2020-2021 Undergraduate Calendar

At its November 25, 2019 and November 26, 2019 meetings, the Undergraduate Council Curriculum and Admissions Committee approved, for recommendation to Undergraduate Council, curriculum revisions for inclusion in the *2020-2021 Undergraduate Calendar.*

Arts & Science Program	(Attachment I)
Faculty of Business	(Attachment II)
Faculty of Engineering	(Attachment III)
Faculty of Health Sciences	(Attachment IV)
Faculty of Humanities	(Attachment V)
Faculty of Science	(Attachment VI)
Faculty of Social Sciences	(Attachment VII)
Glossary, Application Requirements, General Academic Regulations	(Attachment VIII)

MOTIONS:

The Undergraduate Council Curriculum and Admissions Committee now recommends,

1. **that the Undergraduate Council approve, for recommendation to the University Planning Committee, the closure of the *Combined Honours Arts & Science and Human Geography* program, as recommended by the Arts & Science Program, and set out in the attached.**

2. **that the Undergraduate Council approve, for recommendation to Senate, major revisions to the *Honours Bachelor of Applied Science in Computer Science Sciences* program, for inclusion in the *2020-2021 Undergraduate Calendar*, as recommended by the Faculty of Engineering, and set out in the attached.**

3. **that the Undergraduate Council approve, for recommendation to Senate, 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.**

4. **that the Undergraduate Council approve, for recommendation to Senate, 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.**

5. **that the Undergraduate Council approve, for recommendation to Senate, 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.**

6. **that the Undergraduate Council approve, for recommendation to the University Planning Committee, the closure of the *Honours Bachelor of Science in Geography and Environmental Sciences* and *Honours Bachelor of Science in Geography and Environmental Sciences Co-op* programs, as recommended by the Faculty of Science, and set out in the attached.**

7. **that the Undergraduate Council approve, for recommendation to Senate, the establishment of the *Honours Bachelor of Science in Biodiversity and Environmental Sciences* program and corresponding name change, as a modification of the *Honours Bachelor of Science in Biology and Environmental Sciences* program, for inclusion in the *2020-2021 Undergraduate Calendar*, as recommended by the Faculty of Science, and set out in the attached.**

8. **that the Undergraduate Council approve, for recommendation to Senate, the establishment of *Combined Honours Bachelor of Arts in Environment & Society and Another Subject, Honours Bachelor of Arts in Environment & Society,* and *Bachelor of Arts in Environment & Society* programs and corresponding name changes, as modifications of the *Combined Honours Bachelor of Arts in Geography and Another Subject, Honours Bachelor of Arts in Geography,* and *Bachelor of Arts in Geography* programs for inclusion in the *2020-2021 Undergraduate Calendar,* as recommended by the Faculty of Social Sciences, and set out in the attached.**

9. **that the Undergraduate Council approve, for recommendation to the University Planning Committee, the closure of the *Honours Bachelor of Arts in Geography and Environmental Studies* program, as recommended by the Faculty of Social Sciences, and set out in the attached.**

10. **that the Undergraduate Council approve, for recommendation to Senate, revisions to Admission Requirements and General Academic Regulations, for inclusion in the *2020-2021 Undergraduate Calendar*, as recommended by the Office of the Registrar, and set out in the attached.**

11. **that the Undergraduate Council approve the establishment of the *Minor in Environment & Society* program for inclusion in the *2020-2021 Undergraduate Calendar*, as recommended by the Faculty of Science, and set out in the attached.**

12. **that the Undergraduate Council approve the closure of the *Minor in Environmental Studies* program, as recommended by the Faculty of Science, and set out in the attached.**

13. **that the Undergraduate Council approve the closure of the *Minor in Geography* program, as recommended by the Faculty of Science, and set out in the attached.**

14. **that the Undergraduate Council approve the closure of the *Minor in Geography and Earth Sciences* program, as recommended by the Faculty of Science, and set out in the attached.**

15. **that the Undergraduate Council approve the establishment of the *Minor in Diversity and Equity* program for inclusion in the *2020-2021 Undergraduate Calendar*, as recommended by the Faculty of Social Sciences, and set out in the attached.**

16. **that the Undergraduate Council approve the establishment of the *Minor in Gender, Sexualities and Families* program for inclusion in the *2020-2021 Undergraduate Calendar*, as recommended by the Faculty of Social Sciences, and set out in the attached.**

17. **that the Undergraduate Council approve the establishment of the *Minor in Immigration, Race Relations and Indigenous-Settler Relations* program for inclusion in the *2020-2021 Undergraduate Calendar*, as recommended by the Faculty of Social Sciences, and set out in the attached.**

18. **that the Undergraduate Council approve the establishment of the *Minor in Asian Studies* program for inclusion in the *2020-2021 Undergraduate Calendar*, as recommended by the Faculty of Social Sciences, and set out in the attached.**

19. **that the Undergraduate Council approve the closure of the *Minor in Japanese Studies* program as recommended by the Faculty of Social Sciences, and set out in the attached.**

20. **that Undergraduate Council approve curriculum revisions for inclusion in the *2020-2021 Undergraduate Calendar*, as outlined in Attachments I to VIII.**

Undergraduate Council
December 10, 2019

ARTS & SCIENCE PROGRAM

UNDERGRADUATE CURRICULUM REPORT TO

UNDERGRADUATE COUNCIL

FOR THE 2020-2021

UNDERGRADUATE CALENDAR

25 November 2019

REPORT TO SENATE

ARTS & SCIENCE PROGRAM
SUMMARY OF MAJOR CURRICULUM CHANGES FOR 2020-2021

This report highlights substantive changes being proposed. For a complete review of all changes, please refer to the November 2019 Arts & Science Program Report to Undergraduate Council for changes to the 2020-2021 Undergraduate Calendar, found at https://artsci.mcmaster.ca/app/uploads/2019/11/2020-21-Arts-Science-Undergraduate-Curriculum-Report_25-Nov.pdf.

NEW PROGRAMS:
N/A

PROGRAM CLOSURES:

Combined Honours Arts & Science and Human Geography

Rationale: There are currently three combined honours programs involving the Arts & Science Program and the School of Geography and Earth Sciences (renamed the School of Earth, Environment & Society): Combined Honours Arts & Science and Environmental Sciences; Combined Honours Arts & Science and Geography; Combined Honours Arts & Science and Human Geography. As part of their curricular review process, SGES collaborated with the Arts & Science Program on the decision to close the latter combined honours option and retain only two combined honours options: Combined Honours Arts & Science and Environmental Sciences and Combined Honours Arts & Science and Environment and Society (formerly Combined Honours Arts & Science and Geography).

MAJOR REVISIONS:
N/A

REPORT TO UNDERGRADUATE COUNCIL

ARTS & SCIENCE PROGRAM
SUMMARY OF CURRICULUM CHANGES FOR 2020-2021

This report highlights substantive changes being proposed. For a complete review of all changes, please refer to the November 2019 Arts & Science Program Report to Undergraduate Council for changes to the 2020-2021 Undergraduate Calendar, found at https://artsci.mcmaster.ca/app/uploads/2019/11/2020-21-Arts-Science-Undergraduate-Curriculum-Report_25-Nov.pdf.

ARTS & SCIENCE PROGRAM

- Housekeeping changes
- Minor changes to program requirements that reflect the addition and deletion of courses
- 3 new courses
- 3 deleted courses
- Minor revisions to 5 course listings

INTERDISCIPLINARY MINOR IN SUSTAINABILITY

- Minor revisions to the Interdisciplinary Minor in Sustainability description and notes
- Revisions to course names and codes on the Interdisciplinary Minor in Sustainability Course List
- Addition of 4 courses to the Interdisciplinary Minor in Sustainability Course List
- Deletion of 4 courses from the Interdisciplinary Minor in Sustainability Course List

INTERSESSION

- 4 new courses

Faculty of Business, Undergraduate Curriculum Report to Undergraduate Council, for the 2020-2021 Undergraduate Calendar

Approved by The Faculty of Business Faculty Council (October 31, 2019)

FACULTY OF BUSINESS
REPORT TO SENATE
SUMMARY OF MAJOR CURRICULUM CHANGES FOR 2020-2021 ACADEMIC CALENDAR

NOVEMBER 2019

This report highlights substantive changes being proposed to the Undergraduate curriculum. For a complete review of all changes, please refer to the Faculty of Business Curriculum Report for Changes to the 2020-2021 Undergraduate Calendar, located electronically at:
http://ug.degroote.mcmaster.ca/curriculum-report/

New Programs

N/A

Program Closures

N/A

Major Revisions

N/A

FACULTY OF BUSINESS
REPORT TO UNDERGRADUATE COUNCIL
SUMMARY OF CURRICULUM CHANGES FOR 2020-2021 ACADEMIC CALENDAR

NOVEMBER 2019

This report highlights substantive changes being proposed to the Undergraduate curriculum. For a complete review of all changes, please refer to the Faculty of Business Curriculum Report for Changes to the 2020-2021 Undergraduate Calendar, located electronically at:
http://ug.degroote.mcmaster.ca/curriculum-report/

Below is a summary of the proposed changes for approval by the Faculty of Business. Full proposals and course outlines can be found in the appendices beginning on page 9.

REVISIONS TO MCMASTER GENERAL ACADEMIC REGULATIONS

N/A

REVISIONS TO DEGROOTE SCHOOL OF BUSINESS (FACULTY OF BUSINESS) – ACADEMIC REGULATIONS

N/A

NEW COURSES

- **Commerce 3DA3** – Predictive Analytics
- **Commerce 3FK3** – Intermediate Corporate Finance
- **Commerce 3FL3** – Sustainable and Social Finance

REVISIONS TO EXISTING COURSES

- **Commerce 3FI3 –** Market Trading with Options
- **Commerce 4MI3** – Marketing Analytics
- **Commerce 4SD3** – Commercial Law
- **Commerce 4SH3** – Case Analysis and Presentation Skills
- **IBH 2AF3** – Global Business Experience

REVISIONS TO EXISTING CERTIFICATES

- Business Technology Management (BTM)

COURSE DELETION:

- **Commerce 4FI3** – Market Trading with Futures and Forwards

FACULTY OF ENGINEERING

UNDERGRADUATE CURRICULUM REPORT

TO UNDERGRADUATE COUNCIL

FOR THE 2020 – 21 CALENDAR

Faculty approved Nov. 26, 2019

FACULTY OF ENGINEERING
REPORT TO SENATE
SUMMARY OF MAJOR CURRICULUM CHANGES FOR 2020-21

This report highlights substantive changes being proposed. For a complete review of all changes, please refer to the Faculty of Engineering Curriculum Report for changes to **2020-21 Engineering Undergraduate Curriculum Report.docx** on MacDrive:
https://macdrive.mcmaster.ca/f/16e8e27fadcc4ffba3f8/

NEW PROGRAMS

None

PROGRAM CLOSURES

None

MAJOR REVISIONS

1. COMPUTER SCIENCE

REVISION OF PROGRAMS:
RATIONALE: *Changed level 1 computer science courses from 3 to 5. Includes a new experiential course. Some of the upper year courses have been redesigned to be experiential courses. Replacing Math 1ZC3 with Math 1B03. This allows Linear Algebra course to be moved from term 2 to term 1.*

Department of Computing and Software

Faculty of the Department of Computing and Software as of January 1, 2020
CHAIR
~~**Ridha Khedri**~~ **Mark S. Lawford**
PROFESSORS
Antoine Deza/M.Eng. (*Ecole Nationale des Ponts et Chaussées, Paris*), Ph.D. (*Tokyo Institute of Technology*), P.Eng.
Douglas G. Down/B.A.Sc., M.A.Sc. (*Toronto*), Ph.D. (*Illinois-Urbana*), P.Eng.
William M. Farmer/B.A. (*Notre Dame*), M.A., M.S., Ph.D. (*Wisconsin-Madison*), P.Eng.
Frantisek Franek/M.Sc., R.N.Dr. (*Charles, Prague*), Ph.D. (*Toronto*), L.E.L.
Ryszard Janicki/M.Sc. (*Warsaw*), Ph.D., D.Hab. (*Polish Acad. Sci.*)
Ridha Khedri/Dipl.Eng. (*Tunis*), M.Sc., Ph.D. (*Laval*), P.Eng.
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Jacques Carette/B.Math. (*Waterloo*), M.Sc. (*Montreal*), Ph.D. (*Paris-Sud*), L.E.L.
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Wolfram Kahl/M.Sc. (*Oxford*), Dr.rer.nat. (*University of the German Armed Forces, Munich*)
George Karakostas/Dipl. Eng. (*Patras*), M.S.A., Ph.D. (*Princeton*), P.Eng.
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Fei Chiang/B.Sc. (*Toronto*), M.Math (*Waterloo*), Ph.D. (*Toronto*), L.E.L.
~~**Peter Robinson**/B.Sc., M.Sc., Ph.D. *(Vienna)*~~
Reza Samavi/B.Sc. (*Amirkabir*), M.Eng., Ph.D. (*Toronto*), P.Eng.

Notes

1. All programs in the Department of Computing and Software have limited enrolment.
2. For the purpose of admission to Level II B.A.Sc. programs, the three courses MATH 1A03, MATH 1AA3 and MATH 1B03 together are considered equivalent to MATH 1ZA3, MATH 1ZB3 and MATH 1ZC3.

For the Arts & Science and Computer Science (B.Arts.Sc.) program, see *Arts & Science Program*
For the Honours Economics and Computer Science (B.A.) program, see *Faculty of Social Sciences, Department of Economics*
For the Honours Mathematics and Computer Science (B.Sc.) program, see *Faculty of Science, Department of Mathematics and Statistics*

Major Area of Study

~~**Honours Business Informatics, Honours Business Informatics Co-op (B.A.Sc.)**~~

~~Admission to Level II Computer Science Programs~~

~~Admission to Level II Honours Computer Science requires completion of all non-elective Computer Science I courses with a minimum Grade Point Average (GPA) of 4.0.~~

~~Notes~~

1. ~~This program has limited enrolment.~~
2. ~~For the purpose of admission to Level II B.A.Sc. programs, the three courses MATH 1A03, MATH 1AA3 and MATH 1B03 together are considered equivalent to MATH 1ZA3, MATH 1ZB3, and MATH 1ZC3.~~

~~Requirements~~

~~Business Informatics is the study of the design and application of information systems for use in business. It lies within the intersection of Computer Science and Business. Admission to Level II Honours Business Informatics was last offered in September 2016.~~

~~Level IV: 30 Units~~

~~6 units~~

- ~~COMPSCI 4C03 - Computer Networks and Security~~
- ~~COMPSCI 4TB3 - Syntax-Based Tools and Compilers~~

~~3 units~~

- ~~COMMERCE 2BC3 - Human Resource Management and Labour Relations~~

~~6 units~~

~~from~~

- ~~COMMERCE 4KF3 - Project Management~~
- ~~COMMERCE 4KH3 - Strategies for Electronic and Mobile Business~~
- ~~COMMERCE 4FO3 - Small Business and Entrepreneurial Finance~~
- ~~COMMERCE 4OB3 - Analysis of Production/Operations Problems~~
- ~~COMMERCE 4OD3 - Purchasing and Supply Management~~
- ~~COMMERCE 4OI3 - Supply Chain Management~~

~~12 units~~

- ~~Levels III, IV Computer Science~~

~~3 units~~

- ~~Electives~~

Honours Computer Science as a Second Degree (B.A.Sc.)

Admission

Completion of a Bachelor's degree from a recognized university in a discipline other than Computer Science with a Grade Point Average of least 7.0 ; and completion of MATH 1ZA3, MATH 1ZB3 and a grade of at least C+ in COMPSCI 1MD3 or equivalent. As Second Degree candidates, applicants must first apply for admission to the University through the Enrolment Services (Admissions) indicating they wish to apply for the Honours Computer Science B.A.Sc. as a Second Degree program. For the purpose of admission to this program, the two courses MATH 1A03 and MATH 1AA3 together are considered as equivalent to MATH 1ZA3 and MATH 1ZB3.

Note

If a student in the program has previously taken a required course (or its equivalent), it is not a requirement to repeat the course. However, if the credit from that course has been used toward completion of a previous degree, the student will be required to take another course with the required number of units. Admission to this program is at Level III.

Level III: 30 Units

27 units

- COMPSCI 2C03 - Data Structures and Algorithms
- COMPSCI 2DM3 - Discrete Mathematics with Applications I
- COMPSCI 2FA3 - Discrete Mathematics with Applications II
- COMPSCI 2GA3 - Computer Architecture
- COMPSCI 2ME3 - Introduction to Software Development
- COMPSCI 2S03 - Principles of Programming
- COMPSCI 2XA3 - Computer Science Practice and Experience: Software Development Skills
- COMPSCI 2XB3 - Computer Science Practice and Experience: Binding Theory to Practice
- COMPSCI 3I03 - Communication Skills

3 units

- Levels III, IV Computer Science, or other approved technical electives from List G (contact the Department of Computing and Software)

Level IV: 30 Units

27 units

- COMPSCI 3AC3 - Algorithms and Complexity
- COMPSCI 3DB3 - ~~Data Bases~~ Databases
- COMPSCI 3MI3 - Principles of Programming Languages
- COMPSCI 3SD3 - Concurrent Systems
- COMPSCI 3SH3 - Computer Science Practice and Experience: Operating Systems
- COMPSCI 4C03 - Computer Networks and Security
- COMPSCI 4TB3 - Syntax-Based Tools and Compilers
- COMPSCI 4ZP6 A/B - Capstone Project

3 units

- Levels III, IV Computer Science, or other approved technical electives from List G (contact the Department of Computing and Software)

Honours Computer Science, Honours Computer Science Co-op (B.A.Sc.)

Admission to Level II Computer Science Programs

Admission to Level II Honours Computer Science requires completion of all non-elective Computer Science I courses with a minimum Grade Point Average (GPA) of 4.0.

Notes

1. This program has limited enrolment.
2. For the purpose of admission to Level II B.A.Sc. programs, the three courses MATH 1A03, MATH 1AA3 and MATH 1B03 together are considered equivalent to MATH 1ZA3, MATH 1ZB3, and MATH 1ZC3.

REQUIREMENTS FOR STUDNETS WHO ENTER IN OR 2020-2021

Level II: 30 Units

24 units

- COMPSCI 2C03 - Data Structures and Algorithms
- COMPSCI 2DM3 - Discrete Mathematics with Applications I
- COMPSCI 2FA3 - Discrete Mathematics with Applications II
- COMPSCI 2GA3 - Computer Architecture
- COMPSCI 2ME3 - Introduction to Software Development
- COMPSCI 2S03 - Principles of Programming
- COMPSCI 2XA3 - Computer Science Practice and Experience: Software Development Skills
- COMPSCI 2XB3 - Computer Science Practice and Experience: Binding Theory to Practice

6 units

- Electives

Level III: 30 Units

18 units

- COMPSCI 3AC3 - Algorithms and Complexity
- COMPSCI 3DB3 - ~~Data Bases~~ Databases

- COMPSCI 3I03 - Communication Skills
- COMPSCI 3MI3 - Principles of Programming Languages
- COMPSCI 3SD3 - Concurrent Systems
- COMPSCI 3SH3 - Computer Science Practice and Experience: Operating Systems

6 units

from

- Levels III, IV Computer Science, or other approved technical electives from List G (contact the Department of Computing and Software)

6 units

- Electives

Level IV: 30 Units

12 units

- COMPSCI 4C03 - Computer Networks and Security
- COMPSCI 4TB3 - Syntax-Based Tools and Compilers
- COMPSCI 4ZP6 A/B - Capstone Project

12 units

from

- Levels III, IV Computer Science, or other approved technical electives from List G (contact the Department of Computing and Software)
- SEP 4EP3 - New Enterprise Capstone Project

6 units

- Electives

REQUIREMENTS EFFECTIVE SEPTEMBER 2021-2022

Level II: 30 Units

24 units

- COMPSCI 2AC3 - Automata and Computability
- COMPSCI 2C03 - Data Structures and Algorithms
- COMPSCI 2DB3 - Databases
- COMPSCI 2LC3 - Logical Reasoning for Computer Science
- COMPSCI 2GA3 - Computer Architecture
- COMPSCI 2ME3 - Introduction to Software Development
- COMPSCI 2SD3 - Concurrent Systems
- COMPSCI 2XC3 - Computer Science Practice and Experience: Algorithms and Software Design

6 units

- Electives

Level III: 30 Units

18 units

- COMPSCI 3AC3 - Algorithms and Complexity
- COMPSCI 3I03 - Communication Skills
- COMPSCI 3MI3 - Principles of Programming Languages
- COMPSCI 3N03 - Computer Networks and Security
- COMPSCI 3SH3 - Computer Science Practice and Experience: Operating Systems
- COMPSCI 3TB3 - Syntax-Based Tools and Compilers

6 units

- from
- Levels III, IV Computer Science, or other approved technical electives from List G (contact the Department of Computing and Software)

6 units

- Electives

Level IV: 30 Units

6 units

- COMPSCI 4ZP6 A/B - Capstone Project

12 units

from

- Levels III, IV Computer Science, or other approved technical electives from List G (contact the Department of Computing and Software)
- SEP 4EP3 - New Enterprise Capstone Project

12 units

- Electives

Computer Science I/Computer Science I Co-Op (B.A.Sc.)

30 units total
Requirements

~~9~~ 15 units

- COMPSCI 1DM3 - Discrete Mathematics for Computer Science
- COMPSCI 1JC3 - Introduction to Computational Thinking
- COMPSCI 1MD3 - Introduction to Programming
- ~~COMPSCI 1XA3 - Computer Science Practice and Experience: Basic Concepts~~
- COMPSCI 1XC3 - Computer Science Practice and Experience: Development Basics
- COMPSCI 1XD3 - Computer Science Practice and Experience: Introduction to Software Design Using Web Programming

9 units

- MATH 1B03 – Linear Algebra I
- MATH 1ZA3 - Engineering Mathematics I
- MATH 1ZB3 - Engineering Mathematics II-A
- ~~MATH 1ZC3 - Engineering Mathematics II-B~~

~~12~~ 6 units

- ~~electives~~ Electives

1 course

- ENGINEER 1A00 or
- WHMIS 1A00 - Introduction to Health and Safety

COURSE DESCRIPTION CHANGES:

COMPSCI 1JC3 - Introduction to Computational Thinking
3 unit(s)
~~Inquiry into ideas and methods of computer science (CS), the science underlying our computational universe. Topics include what computers can and cannot do, the Internet and search engines, artificial intelligence, computer-controlled devices, and sustainability in computing.~~
Exploration of thinking that is inspired, supported, and enabled by computing. Survey of the salient ideas, methods, and technologies in the major areas of computing including basic data types, logic, operating systems, computer networking, web computing, information security, digital media, software development, and problem solving techniques. Introduction to the fundamentals of functional programming.
Three lectures, one tutorial (two hours), first term
Prerequisite(s): One of MATH 1K03, Grade 12 Advanced Functions and Introductory Calculus U, Grade 12 Calculus and Vectors, or registration in Computer Science 1

COMPSCI 1MD3 - Introduction to Programming
3 unit(s)
Introduction to fundamental programming concepts: values and types, expressions and evaluation, control flow constructs and exceptions, recursion, input/output and file processing.
Three lectures, one tutorial (one hour); ~~second~~ first term
Prerequisite(s): One of MATH 1K03, 1LS3, Grade 12 Advanced Functions and Introductory Calculus U, Grade 12 Calculus and Vectors
Antirequisite(s): ENGINEER 1D04, MATH 1MP3

COMPSCI 2C03 - Data Structures and Algorithms
3 unit(s)
Basic data structures: stacks, queues, hash tables, and binary trees; searching and sorting; graph representations and algorithms, including minimum spanning trees, traversals, shortest paths; introduction to algorithmic design strategies; correctness and performance analysis.
Three lectures, one tutorial (one hour); second term
Prerequisite(s): COMPSCI 1DM3 or 2DM3;and of COMPSCI 1MD3,1XC3, 1XD3
Antirequisite(s): SFWRENG 2C03
Effective 2021-2022, this course will be offered in first term.

COMPSCI 2DM3 - Discrete Mathematics with Applications I
3 unit(s)
Functions, relations and sets; the language of predicate logic, propositional logic; proof techniques, counting principles; induction and recursion, discrete probabilities, graphs, and their application to computing.
Three lectures, one tutorial (one hour); first term
Prerequisite(s): MATH 1ZC3 or MATH 1B03 or registration in the Honours Computer Science as a Second Degree (B.A.Sc.)
Antirequisite(s): COMPSCI 1FC3, SFWRENG 2DM3~~, 2E03, 2F03~~
Last offered 2020-2021

COMPSCI 2FA3 - Discrete Mathematics with Applications II
3 unit(s)
Predicate logic and formal proofs, grammars and automata, modular arithmetic, and their applications to computing.
Three lectures, one tutorial (one hour); second term
Prerequisite(s): COMPSCI 1FC3 or 2DM3
Antirequisite(s): SFWRENG ~~2E03, 2F03,~~ 2FA3
Last offered 2020-2021

COMPSCI 2GA3 - Computer Architecture
3 unit(s)
Introduction to logic gates, computer arithmetic, instruction-set architecture, assembly programming, translation of high-level languages into assembly. Computer system organization: datapath and control, pipelining, memory hierarchies, I/O systems; measures of performance.
~~Introduction to logic gates, number representation, computer arithmetic, instruction-set architecture, datapath and control, pipelining, memory hierarchies, I/O systems, multiprocessor systems, measures of performance.~~
Three lectures, one tutorial, (one hour); first term
Prerequisite(s): COMPSCI 1MD3 or ENGINEER 1D04 or IBEHS 1P10
Prerequisite(s) effective 2021-2022: COMPSCI 1XC3 and 1DM3
Antirequisite(s): COMPENG 3DR4, 4DM4, SFWRENG 2GA3, 3GA3

COMPSCI 2ME3 - Introduction to Software Development
3 unit(s)
Classes and inheritance, class invariants, interface specifications; object-oriented design patterns; exception handling; tools for interface documentation, testing, program analysis; requirements documentation; quality attributes; development models.
~~Software life cycle, quality attributes, requirements documentation, specifying behavior; classes and objects, interface specification; creational, structural, and behavioral software design patterns; implementation in code, reviews, testing and verification.~~
Three lectures one tutorial (two hours); second term
Prerequisite(s): COMPSCI 2DM3, 2S03
Prerequisite(s) effective 2021-2022: COMPSCI 1XC3 and 1XD3
Co-requisite(s) effective **2021-2022**: COMPSCI 2LC3
Antirequisite(s): SFWRENG 2AA4, SFWRENG 3K04, MECHTRON 3K04
Effective 2021-2022, this course will be offered in first term.

COMPSCI 2S03 - Principles of Programming
3 unit(s)
Fundamental concepts of programming: expressions, statements, procedures, control structures, iteration, recursion, exceptions; precise memory model of traditional imperative programming languages; basic data structures: records, arrays, dynamic structures; use of libraries.
Three lectures, one tutorial (one hour); first term
Prerequisite(s): COMPSCI 1MD3 or ENGINEER 1D04 or MATH 1MP3 or IBEHS 1P10
Antirequisite(s): COMPENG 2SH4, 2SC3, SFWRENG 2MP3, 2S03
Last offered 2020-2021

COMPSCI 2XA3 - Computer Science Practice and Experience: Software Development Skills
3 unit(s)
Unix and shell programming, makefiles, version control; assembly basics, translating high-level language into assembly, parameter passing, arrays, recursion; compiling, debugging, profiling, and software optimizations.
Two lectures, one lab (three hours per week), first term
Prerequisite(s): COMPSCI 1MD3 or ENGINEER 1D04 or IBEHS 1P10 A/B

Co-requisite(s): COMPSCI 2S03
Antirequisite(s): SFWRENG 2XA3
Last offered 2020-2021

COMPSCI 2XB3 - Computer Science Practice and Experience: Binding Theory to Practice
3 unit(s)
Open-ended design of computational solutions to practical problems that involve both theoretical (algorithmic) analysis and implementation; solving computational problems through an experiential approach.
~~One lecture, two labs (two hours each)~~Two lectures, one lab (three hours), second term
Prerequisite(s): COMPSCI 2S03, 2XA3
Co-requisite(s): COMPSCI 2C03, 2ME3
Antirequisite(s): SFWRENG 2XB3
Last offered 2020-2021

COMPSCI 3AC3 - Algorithms and Complexity
3 unit(s)
Basic computability models; the Church-Turing thesis, complexity classes; P versus NP; NP-completeness, reduction techniques; algorithmic design strategies; flows, distributed algorithms, advanced techniques such as randomization.
Three lectures, one tutorial (one hour), second term
Prerequisite(s): COMPSCI 2C03 or SFWRENG 2C03, COMPSCI 2AC3 or 2FA3 or SFWRENG 2FA3

COMPSCI 3DB3 - ~~Data Bases~~ Databases
3 unit(s)
Data modelling, integrity constraints, principles and design of relational databases, relational algebra, SQL, query processing, transactions, concurrency control, recovery, security and data storage.
Three lectures, one tutorial (one hour); first term
Prerequisite(s): COMPSCI 1FC3 or COMPSCI 2DM3
Antirequisite(s): COMPSCI ~~4EB3~~ 4DB3, SFWRENG 3DB3, 3H03, 4M03, 4DB3
Last offered 2021-2022

COMPSCI 3EA3 - ~~Software Specifications and Correctness~~Software and System Correctness
3 unit(s)
Formal specifications in software and system development; validation; verification; presentation of information; practical experience in formal specification and tool-supported verification. ~~Formal specifications in software development; logical formalisms; functional and relational specifications; completeness and consistency of specifications; verification; validation; presentation of information; tool supported verification.~~
Three lectures; one tutorial (one hour); ~~second~~ one term
Prerequisite(s): COMPSCI 2LC3 or 2DM3, 2AC3 or 2FA3, 2ME3, 2SD3 or 3SD3
Offered on an irregular basis.

COMPSCI 3FP3 - Functional Programming
3 unit(s)
Functional programming; lists and algebraic data types, pattern matching, parametric polymorphism, higher-order functions, reasoning about programs; lazy and strict evaluation; programming with monads; domain-specific languages.
Three lectures, one tutorial; ~~first~~ one term
Prerequisite(s): COMPSCI 2DM3 or 2LC3, 2FA3 or 2AC3
Antirequisite(s): SFWRENG 3FP3
~~**Cross-list(s):** SFWRENG 3FP3~~
Offered on an irregular basis.

COMPSCI 3GC3 - Computer Graphics

3 unit(s)
Mathematical foundations, the graphics pipeline, geometrical transformations, 3D visualization, clipping, illumination and shading models and the impact of graphics on society.
Three lectures, one tutorial (two hours every other week); ~~first~~ one term
Prerequisite(s): MATH 1B03 or 1ZC3, and COMPSCI 2C03 ~~Registration in Honours Computer Science or Honours Business Informatics, Honours Business Informatics Co-op (B.A.Sc.)~~
Antirequisite(s): SFWRENG 3GC3
~~Cross-list(s):~~ ~~SFWRENG 3GC3~~
Offered on an irregular basis.

COMPSCI 3IS3 - Information Security
3 unit(s)
Basic principles of information security; threats and defences; cryptography; introduction to network security and security management.
Three lectures; ~~first~~ one term
Prerequisite(s): ~~Credit or registration in~~ One of COMPSCI 2AC3, 2FA, ~~or~~ SFWRENG 2FA3; and COMPSCI 2C03 or SFWRENG 2C03
Offered on an irregular basis.

COMPSCI 3MI3 - Principles of Programming Languages
3 unit(s)
Principles of definition of and reasoning about programming languages and domain-specific languages; use of semantics for interpretation and in program analyses for correctness, security and efficiency.
~~Design space of programming languages; abstraction and modularization concepts and mechanisms; programming in non-procedural (functional and logic) paradigms; introduction to programming language semantics.~~
Three lectures; one tutorial (one hour); first term
Prerequisite(s): COMPSCI 2C03;and COMPSCI 2LC3 or 2DM3; and COMPSCI 2AC3 or 2FA3; and COMPSCI 2ME3

COMPSCI 3RA3 - Software Requirements and Security Considerations
3 unit(s)
Software requirements gathering. Critical systems requirements gathering. Security requirements. Traceability of requirements. Verification, validation, and documentation techniques. Software requirements quality attributes. Security policies. Measures for data confidentiality. Design principles that enhance security. Access control mechanisms.
Three lectures, one tutorial (one hour); first term
Prerequisite(s): COMPSCI 2AC3 or 2FA3~~,~~ ; COMP SCI 2ME3
Antirequisite(s): ~~COMPSCI 3SR3, 4EF3,~~ SFWRENG ~~3R03,~~ 3RA3~~, 4EF3~~
Cross-list(s): SFWRENG 3RA3

COMPSCI 3SD3 - Concurrent Systems
3 unit(s)
Models of concurrency: process algebras, Petri nets, temporal logics and model checking; concurrency as software structuring principle: processes, threads, synchronization mechanisms, resource management and sharing; deadlock, safety and liveness; design, verification and testing of concurrent systems.
Three lectures, one tutorial (two hours); first term
Prerequisite(s): COMPSCI 2C03, 2FA3, 2ME3
Antirequisite(s): SFWRENG 3BB4
Last offered 2021-2022

COMPSCI 3SH3 - Computer Science Practice and Experience: Operating Systems
3 unit(s)
Processes and threads, synchronization and communication; scheduling, memory management; file systems; resource protection; structure of operating systems.
Two lectures, one tutorial, two labs (one hour each); second term
Prerequisite(s): COMPSCI 2SD3 or 3SD3~~,~~ ;COMPSCI 2C03~~,~~ ; and COMPSCI 2GA3
Antirequisite(s): ~~COMPSCI 3MH3, 4SH3,~~ SFWRENG 3SH3

Effective 2021-2022, this course will be offered in first term.

COMPSCI 4AD3 - Advanced Databases
3 unit(s)
Advanced topics in database systems technology and design. Topics include: query processing; query optimization; data storage; indexing; crash recovery; physical database design; introductory data mining techniques.
Three lectures, one tutorial; ~~second~~ one term
Prerequisite(s): COMPSCI 3DB3
Antirequisite(s): SFWRENG 4AD3
Cross-list(s): SFWRENG 4AD3
Offered on an irregular basis.

COMPSCI 4AR3 - Software Architecture
3 unit(s)
Software architecture concepts; architectural styles; design patterns, components, libraries, configurations; modelling languages; software re-engineering.
Three lectures; ~~first~~ one term
Prerequisite(s): Credit or registration in COMPSCI 3RA3 or 3SR3
Offered on an irregular basis.

COMPSCI 4C03 - Computer Networks and Security
3 unit(s)
Physical networks, TCP/IP protocols, switching methods, network layering and components, network services. Information security, computer and network security threats, defence mechanisms, encryption.
Three lectures, one tutorial (one hour) ~~one lab (three hours every other week)~~; second term
Prerequisite(s): Credit or registration in COMP SCI 3MH3 or COMPSCI 3SH3
Antirequisite(s): COMP SCI 3CN3, 3C03, SFWRENG 4C03, COMPENG 4DN4
~~**Cross-list(s):** SFWRENG 4C03~~
Last offered 2022-2023

COMPSCI 4DC3 - Distributed Computing
3 unit(s)
Models of distributed computation, formal reasoning about distributed systems, time and message complexity, distributed agreement under adversarial attacks, distributed coordination and symmetry breaking, peer-to-peer computing, simulation as a tool for building more advanced functionality, actor-model programming.
Three lectures, one tutorial; ~~second~~ one term
Prerequisite(s): One of COMPSCI 2C03, ~~or~~ SFWRENG 2C03 ,~~or~~ SFWRENG 2MD3~~,~~; and one of COMPSCI 2SD3, 3SD3, ~~or~~ SFWRENG 3BB4 ~~or~~ ,SFWRENG 3SH3
Offered on an irregular basis.

COMPSCI 4EN3 A/B - Software Entrepreneurship
3 unit(s)
Issues in starting up a new software enterprise, with the focus on independent startups. This course will cover the technical, financial, legal and operational issues encountered by software startups. Small groups of students will take an idea and turn it into a prototype, a business plan, and a sales pitch. Lectures will cover issues from team formation to appropriate software development processes to patent protection to venture capital.
Three lectures; two terms
Prerequisite(s): Registration in Level III or IV of any Computer Science program
Offered on an irregular basis.

COMPSCI 4F03 - Parallel Computing
3 unit(s)
Parallel architectures, design and analysis of parallel algorithms; distributed-memory, shared-memory and GPU computing; communication cost, scalability; MPI, OpenMP and OpenACC; tuning parallel programs for performance.

Three lectures, one tutorial (one hour); ~~second~~ one term
Prerequisite(s): COMPSCI 2SD3 or Credit or registration in COMPSCI 3SD3. Completion of COMPSCI 3N03 or 4C03 is recommended.
Antirequisite(s): SFWRENG 4F03
Cross-list(s): SFWRENG 4F03
Offered on an irregular basis.

COMPSCI 4HC3 - Human Computer ~~Interaction~~ Interfaces
3 unit(s)
Design of user interfaces. Principles of good interface design. Task-oriented design. User experience design. Inclusive design. Communicating with graphics. Modes and mode awareness problem. Human cognition (memory, perception, motor systems). Help systems. Interface design tools.
~~Design of user interfaces. Principles of good interface design. Human input. Displaying complex data using graphics and virtual reality. Modes and mode awareness problem. Health issues, information overload. Special purpose graphics hardware. Interface design tools; on-line help systems.~~
Three lectures, one tutorial (one hour); first term
Prerequisite(s): COMPSCI ~~3MH3 or 3SH3~~ 2C03
Antirequisite(s): SFWRENG 4D03, 4HC3
Cross-list(s): SFWRENG 4HC3

COMPSCI 4ML3 - Introduction to Machine Learning
3 unit(s)
Regression, Classification and Decision Theory, Bias-Variance Trade-off, Linear Models, Kernel Methods, Probabilistic Models, Neural Networks, Model Aggregation, Unsupervised Learning.
Three lectures, one tutorial; one term
Prerequisite(s): One of COMPSCI 2C03 or SFWRENG 2C03 or SFWRENG 2MD3. One of STATS 1L03, STATS 2D03, STATS 3Y03 ~~is recommended~~. One of COMPSCI 4O03 or 4X03 or SFWRENG 3O03 or 4X03 is recommended.
~~Offered on an irregular basis.~~
Offered on an irregular basis.

COMPSCI 4TB3 - Syntax-Based Tools and Compilers
3 unit(s)
Lexical analysis, syntax analysis, type checking; syntax-directed translation, attribute grammars; compiler structure; implications of computer architecture; mapping of programming language concepts; code generation and optimization.
Two lectures, one tutorial, two labs (one hour each); second term
Prerequisite(s): COMPSCI 2C03 or SFWRENG 2C03, and COMPSCI 2GA3 or SFWRENG 2GA3 or 3GA3, and COMPSCI 2AC3 or 2FA3 or SFWRENG 2FA3, and COMPSCI 3MI3 or registration in Level IV or above of a Software Engineering program
Last offered 2022-2023

COMPSCI 4TE3 - Continuous Optimization
3 unit(s)
Fundamental algorithms and duality concepts of continuous optimization. Motivation, applicability, information requirements and computational cost of the algorithms is discussed. Practical problems will illustrate the power of continuous optimization techniques.
Three lectures, one tutorial (one hour); ~~first~~ one term
Prerequisite(s): One of MATH 2A03~~, 2M06 (or 2M03 and 2MM3), 2Q04~~, or 2ZZ3
Antirequisite(s): SFWRENG 4TE3
Cross-list(s): SFWRENG 4TE3
Offered on an irregular basis.

COMPSCI 4TH3 - Theory of Computation
3 unit(s)
Formal languages, models of computation, decidability, reduction techniques, time and space complexity classes.

Three lectures, one tutorial (one hour); one term
Prerequisite(s): COMPSCI 2AC3 or 2FA3, 2C03
Antirequisite(s): SFWRENG 4TH3
Cross-list(s): SFWRENG 4TH3
Offered on an irregular basis.

COMPSCI 4TI3 - Fundamentals of Image Processing
3 unit(s)
Discrete-time signals and systems, digital filter design, photons to pixels, linear filtering, edge-detection, non-linear filtering, multi-scale transforms, motion estimation.
Three lectures; ~~first~~ one term
Prerequisite(s): Registration in Level III or above of a program offered by the Department of Computing and Software
Offered on an irregular basis.

COMPSCI 4WW3 - Web Systems and Web Computing
3 unit(s)
Network protocols underlying the world wide web; client-side programming: markup, styles, scripts, design, mobile/desktop; server-side programming: databases, dynamic languages; web services; cloud technologies; security.
Three lectures; one term
Prerequisite(s): COMPSCI 2ME3 or SFWRENG 2AA4; completion of COMPSCI 2DB3 or 3DB3, 3IS3, or 3N03 or 4C03 is recommended.
Offered on an irregular basis.

COMPSCI 4X03 - Scientific Computation
3 unit(s)
Computer arithmetic, stability, sensitivity. Numerical methods for polynomial manipulation, interpolation, data fitting, integration, differentiation, solving linear and non-linear systems, ordinary differential equations and eigenvalue problems.
Three lectures, one tutorial (one hour); second term
~~Prerequisite(s):~~ ~~MATH 1ZZ5; or both MATH 1AA3 and MATH 1B03; or both MATH 1H03 and 1NN3; or both MATH 1ZB3 and MATH 1ZC3~~
Prerequisite(s): MATH 1AA3 or 1ZB3, and MATH 1B03 or 1ZC3
Antirequisite(s): COMPENG 3SK3, 3SK4, ~~COMPSCI 3X03, 4MN3,~~ SFWRENG 3X03, 4X03
Cross-list(s): SFWRENG 4X03

NEW COURSE(S):

COMPSCI 1DM3 - Discrete Mathematics for Computer Science
3 unit(s)
Sets, functions, relations, trees and graphs; counting principles, modular arithmetic, discrete probabilities; induction and recursion, recurrence relations.
Three lectures, one tutorial (two hours), second term
Prerequisite(s): MATH 1B03 or MATH 1ZC3 or registration in the Honours Computer Science as a Second Degree (B.A.Sc.)
Antirequisite(s): COMPSCI 1FC3, 2DM3, SFWRENG 2DM3, 2E03, 2F03

COMPSCI 1XC3 - Computer Science Practice and Experience: Development Basics
3 unit(s)
Acquiring familiarity with professional software development settings via practical experience with interaction with UNIX-like systems, programming in C, with documentation, testing, benchmarking, profiling and debugging; shell interaction and programming, pipes and filters; revision control.
Two lectures, two labs (two hours each); second term
Prerequisite(s): One of COMPSCI 1MD3 or ENGINEER 1D04
Antirequisite(s): COMPSCI 1XA3, 2XA3, 2S03, SFWRENG 2MP3, 2S03, 2XA3, COMPENG 2SH4

COMPSCI 1XD3 - Computer Science Practice and Experience: Introduction to Software Design Using Web Programming

3 unit(s)
Introduction to different aspects of design: Identifying user needs, goals and desires and translating them into software, and structuring and communicating the structure of software to improve reliability, readability and adaptability. Topics include web languages and protocols, types and design patterns.
Two lectures, two labs (two hours each); second term
Prerequisite(s): COMPSCI 1JC3 and 1MD3
Antirequisite(s): COMPSCI 1XA3

COMPSCI 2AC3 - Automata and Computability
3 unit(s)
Finite state machines, regular languages, regular expressions, applications of regular languages, grammars, context-free languages, models of computation, computability and decidability.
Three lectures, one tutorial (two hours); second term
Prerequisite(s): COMPSCI 2LC3, 2C03
Antirequisite(s): COMPSCI 2FA3, 2MJ3, SFWRENG 2FA3
First offered 2021-2022

COMPSCI 2DB3 - Databases
3 unit(s)
Data modelling, integrity constraints, principles and design of relational databases, relational algebra, SQL, query processing, transactions, concurrency control, recovery, security and data storage.
Three lectures, one tutorial (one hour); second term
Prerequisite(s): COMPSCI 2LC3 or COMPSCI 2DM3
Antirequisite(s): COMPSCI 3DB3, 4DB3, SFWRENG 3DB3, 3H03, 4M03, 4DB3
F*irst offered 2021-2022*

COMPSCI 2LC3 - Logical Reasoning for Computer Science
3 unit(s)
Introduction to logic and proof techniques for practical reasoning: propositional logic, predicate logic, structural induction; rigorous proofs in discrete mathematics and programming.
Three lectures, one tutorial (two hours); first term
Prerequisite(s): COMPSCI 1DM3, COMPSCI 1MD3 or 1XC3 or 1XD3
Antirequisite(s): COMPSCI ~~1FC3~~, 2DM3, SFWRENG 2DM3
First offered 2021-2022

COMPSCI 2SD3 - Concurrent Systems
3 unit(s)
Models of concurrency: process algebras, Petri nets, temporal logics and model checking; concurrency as software structuring principle: processes, threads, synchronization mechanisms, resource management and sharing; deadlock, safety and liveness; design, verification and testing of concurrent systems.
Three lectures, one tutorial (two hours); second term
Prerequisite(s): COMPSCI 2C03, 2LC3 or 2DM3, 2ME3
Co-**requisite(s):** COMPSCI 2AC3
Antirequisite(s): COMPSCI 3SD3, SFWRENG 3BB4
First offered 2021-2022

COMPSCI 2XC3 - Computer Science Practice and Experience: Algorithms and Software Design
3 unit(s)
Implementation of computational solutions to practical problems that combine algorithmic design and analysis with software design principles, through an experiential approach in simulated workplace environments. Communication skills: Technical documentation and presentation.
Two lectures, one lab (three hours), second term
Prerequisite(s): COMPSCI 1XC3, 1XD3, 2C03, 2ME3
Antirequisite(s): COMPSCI 2XB3, SFWRENG 2XB3
First offered 2021-2022

COMPSCI 3N03 - Computer Networks and Security
3 unit(s)
Physical networks, TCP/IP protocols, switching methods, network layering and components, network services. Information security, computer and network security threats, defence mechanisms, encryption.
Three lectures, one tutorial (one hour); second term
Prerequisite(s): COMP SCI 3MH3 or credit or registration in COMPSCI 3SH3
Antirequisite(s): COMP SCI 3CN3, 3C03, COMPSCI 4C03, SFWRENG 4C03, COMPENG 4DN4
First offered 2022-2023

COMPSCI 3TB3 - Syntax-Based Tools and Compilers
3 unit(s)
Lexical analysis, syntax analysis, type checking; syntax-directed translation, attribute grammars; compiler structure; implications of computer architecture; mapping of programming language concepts; code generation and optimization.
Two lectures, one tutorial, two labs (one hour each); second term
Prerequisite(s): COMPSCI 2C03 or SFWRENG 2C03, and COMPSCI 2GA3 or SFWRENG 2GA3 or 3GA3, and COMPSCI 2AC3 or 2FA3 or SFWRENG 2FA3, and COMPSCI 3MI3 or registration in Level IV or above of a Software Engineering program
First offered 2022-2023

COURSE DELETION(S):

COMPSCI 1XA3 - Computer Science Practice and Experience: Basic Concepts
3 unit(s)
Practical experience with implementing basic CS concepts such as data representation, recursion, computer architecture, concurrency. Hands-on application of CS concepts to formulating, analyzing, and solving problems.
One lecture, two labs (two hours each); second term
Prerequisite(s): Registration in Computer Science or permission of the Instructor
Co-requisite(s): One of COMPSCI 1MD3 or ENGINEER 1D04

ENGINEER 2GB3 - Digital Media (Audio and Video) for Software Engineering
3 unit(s)
A study of digital media where students will create and critique digital audio and video. Readings will explore the evolution of digital media and the technical and social aspects of digital audio and video.
One lecture (two hours), one lab (two hours); first term
Prerequisite(s): Registration in Software Engineering - Game Design, Software Engineering - Game Design Co-op (B.Eng.) or permission of the department
Antirequisite(s): MMEDIA 2B03, 2BE3

ENGINEER 3GA3 - Introduction to Animation for Software Engineering
3 unit(s)
An introduction to the history and basic principles of animation. Students will create a significant work of computer animation displaying a variety of techniques. Readings and discussions will cover theatre, film studies and narrative.
One lecture (two hours), one lab (two hours); first term
Prerequisite(s): ENGINEER 2GB3 or MMEDIA 2BE3
Antirequisite(s): MMEDIA 2H03, 2HE3

ENGINEER 4GA3 - Interactive Digital Culture for Software Engineering
3 unit(s)
Covers works, forms, theories of digitally interactive culture. Works may include hypertext fiction, computer games, interactive digital art, video, music; theories may cover hypertext, interactivity, immersion, simulation, reception, participatory culture.
Three lectures; first term
Prerequisite(s): ENGINEER 3GA3 or MMEDIA 2HE3
Antirequisite(s): MMEDIA 3E03, 3EE3

None

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FACULTY OF ENGINEERING
REPORT TO UNDERGRADUATE COUNCIL
SUMMARY OF CURRICULUM CHANGES FOR 2020-21

This report highlights substantive changes being proposed. For a complete review of all changes, please refer to the Faculty of Engineering Curriculum Report for changes to the 2020-21 Undergraduate Calendar, found at: https://macdrive.mcmaster.ca/f/16e8e27fadcc4ffba3f8/

FACULTY OF ENGINEERING (General)

- Revisions in Faculty information
- Transferring to Graduate with a Three-Year B.A.Sc. Degree from one of the B.Eng.BME Biomedical Engineering streams of the Integrated Biomedical Engineering and Health Sciences Program

Engineering 1

- Revision of program requirements (approved 2019-20)
- One new course (approved 2019-20)
- Three course description changes

CHEMICAL ENGINEERING

- Revision of program requirements
- Nine course description changes
- One course deletion
- One new courses

CIVIL ENGINEERING

- Revision of program requirements
- Eleven course description changes

COMPUTING AND SOFTWARE

- Computer Science
  - Revision of program requirements
  - Thirty-four course description changes
  - Ten new course
  - Four course deletion
- Mechatronics
  - Revision of program requirements
  - Two course description changes
  - Two new course
- Software Engineering
  - Revision of program requirements
  - Phasing out Software Engineering (Game Design) approved in 2017-18
  - Fifteen course description changes
  - One new courses
  - Two course deletion

ELECTRICAL AND COMPUTER ENGINEERING

- Revision of program requirements
- Twelve course description changes
- Three new courses
- Five course deletion

ENGINEERING PHYSICS

- Revision of program requirements
- Eleven course description changes
- Six new course
- Four course unit changes

ENGINEERING AND MANAGEMENT

- One course description changes
- One course unit change
- Three course deletion
- Revision of program requirements

Minor in Innovation

- Three new courses
- Eight course description changes
- Revision to the minor requirements

ENGINEERING AND SOCIETY

- Three course description revisions
- Two new courses
- One course deletion
- Revision to program requirements

MATERIALS ENGINEERING

- Twenty-nine course descriptions revisions
- Three new course
- Two course deletion
- One course unit change

MECHANICAL ENGINEERING

- Four course description revisions
- One new course

W. BOOTH SCHOOL OF ENGINEERING PRACTICE AND TECHONOLOGY

- 4 – year programs
  - Minor revision of program requirements
  - Admission editorial revisions

- Degree Completion programs (DCP)
  - Minor revision of program requirements

- Seventy-one description changes
- Eight course deletions
- Ten new courses

INTEGRATED BIOMEDICAL ENGINEERING HEALTH SCIENCES

- Revision of program requirements – Each of the department specific Engineering and Biomedical programs are listed under each department
- Ten course description changes
- Two new courses

- Transferring to Graduate with a Three-Year B.A.Sc. Degree from one of the B.Eng.BME Biomedical Engineering streams of the Integrated Biomedical Engineering and Health Sciences Program (listed in Faculty of Engineering (General) section

FACULTY OF HEALTH SCIENCES

UNDERGRADUATE CURRICULUM REPORT

TO UNDERGRADUATE COUNCIL

FOR THE 2020-2021 CALENDAR

Wednesday December 4th, 2019

HSEC approved November 13, 2019
Faculty Executive Council approved November 12, 2019

REPORT TO SENATE

FACULTY OF HEALTH SCIENCES
SUMMARY OF CURRICULUM CHANGES FOR 2020-2021

This report highlights substantive changes being proposed. For a complete review of all changes, please refer to the Faculty of Health Sciences Curriculum Report for changes to the 2020-2021 Undergraduate Calendar, found at:
https://fhs.mcmaster.ca/main/documents/health_sciences_curriculum_report_2020_21.pdf

NEW PROGRAMS
NONE

PROGRAM CLOSURES
NONE

MAJOR REVISIONS
NONE

REPORT TO UNDERGRADUATE COUNCIL

FACULTY OF HEALTH SCIENCES
SUMMARY OF CURRICULUM CHANGES FOR 2020-2021

This report highlights substantive changes being proposed. For a complete review of all changes, please refer to the Faculty of Health Sciences Curriculum Report for changes to the 2020-2021 Undergraduate Calendar, found at:
https://fhs.mcmaster.ca/main/documents/health_sciences_curriculum_report_2020_21.pdf

FACULTY OF HEALTH SCIENCES.....1

- Revision to the Faculty of Health Sciences Information
  - Contact List
  - Overview Section
- Revision to Undergraduate Health Sciences Education Program
  - Deadlines
- Transferring to graduate with B.H.Sc. from HESE

BACHELOR OF HEALTH SCIENCES (HONOURS) PROGRAM.....4

- Revision to Program Overview
- Revision to Curriculum
  - Bachelor of Health Sciences (Honours)(B.H.Sc.)
  - Bachelor of Health Sciences (Honours)(B.H.Sc.) - Level 2 Transfer
  - Bachelor of Health Sciences (Honours)(B.H.Sc.) - Child Health Specialization
  - Bachelor of Health Sciences (Honours)(B.H.Sc.) - Global Health Specialization
- New Courses - 4
- Revision to Courses - 33
- Course Deletions - 3

HONOURS BACHELOR OF HEALTH SCIENCES IN BIOMEDICAL DISCOVERY AND COMMERCIALIZATION PROGRAM.....22

- Revision to Program Information
  - Office Location
  - Contact Information
- Revision to Academic Regulations
  - Letters of Permission Section
- New Course - 1
- Revision to Course - 1

HONOURS BIOLOGY AND PHARMACOLOGY CO-OP PROGRAM.....24

- Revision to Program Overview
  - Admission Requirements
- Revision to Academic Requirements
  - Letters of Permission
- Revision to Honours Biology & Pharmacology Co-Op

    - Admissions
    - Program Notes
    - Course List
    - Requirements
        - All
        - Students transferring from BSc to B.H.Sc. in 2018
- Revision to Courses - 1

INTEGRATED BIOMEDICAL ENGINEERING AND HEALTH SCIENCES PROGRAM (IBEHS) 29

- Revision to Program Information]
- Revision to the Academic Advising Contact Information
- Graduation
- Health, Engineering Sciences and Entrepreneurship (HESE) Specialization: Health, Engineering Science and Entrepreneurship (HESE) Specialization Co-Op (B.H.Sc. (Honours)
    - Revision to Program Requirements
    - New Courses - 2
    - Revision to Courses - 10
    - Course Deletions - 2

UNDERGRADUATE MEDICAL PROGRAM.....37

- Revision to Program Information
    - Contact information
    - Waterloo Regional and Niagara Regional Campuses
- Revision to Undergraduate Medical (MD) Program
    - Title
    - The ~~COMPASS~~ Pre-Clerkship Curriculum
- Revision to Learning Methods
- Revision to Student Assessment Methods
- Revision to Curriculum Plan - Compass Curriculum
    - Medical Foundations 2
    - The Clerkship
    - Electives
    - Concept Integration and Review (CIR)
    - Enrichment Program
    - MD/Ph.D. Program
    - Basic Life Support Training
    - ~~Immunization~~ Health Screening
    - Police Records Check
    - Laptop Requirement
    - Transportation Costs
- Revision to Admission Policy for the Undergraduate Medical Program
    - Title
    - Academic Eligibility Requirements
    - Indigenous Applicants

    - Transcripts Requirements and Transcript Request Forms (TRF)
    - Credentialing of Non-Canadian Grades
    - Selection
- Revision to Financial Information
    - Updated title
    - Updated fees
    - International (VISA) students
    - Donor Bursaries and Elective Travel Awards

BACHELOR OF SCIENCE NURSING PROGRAM.....49

- Revision to Program Information
    - Contacts
    - The B.Sc.N. Program
    - ~~Goals for Students~~ BScN Program Goals
    - Registration to Practise Nursing in Ontario
- Revision to Admission Policy, Procedure and Requirements
    - Academic Policy
    - Admission Procedure
    - Academic Requirements
    - B.Sc.N. Basic (A) Stream - McMaster Site Admission
    - B.Sc.N. Basic (A) Stream - Mohawk and Conestoga Sites Admission requirements
    - B.Sc.N. Accelerated (F) Stream - McMaster Site Admission Requirements
- Revision to Academic Regulations
    - Student Communication Responsibility
    - Continuation in the B.Sc.N. Program
    - Removal from the Program
    - ~~Re-Entry to the Program~~
    - Reinstatement to the Program and University
    - Readmission after Voluntary Withdrawal
    - Dropping/Withdrawing from Courses
    - Leave of Absence (LOA)
    - Transfer Credits/Course Exemptions
    - Letters of Permission
    - Professional Practice Regulations
    - Reintegration to Professional Practice
    - Non-Academic Requirements
        - Immunization
        - Police Record Check
        - CPR Certification
    - Travel within the Program
    - Access to Clinical Courses
    - Global Health Professional Practice
    - Documentation for Licensure outside of Canada
- Revision to Curriculum

    - Accelerated (F) Stream (B.Sc.N.) McMaster Site
    - Basic (A) Stream (B.Sc.N.) McMaster Site, Conestoga Site, Mohawk Site
    - Post Diploma R.P.N. (E) Stream (B.Sc.N.) Conestoga Site Mohawk Site
    - Indigenous Section Post Diploma R.P.N. (E) Program Stream Mohawk Site
- New Courses - 5
- Revision to Courses - 13
- Course Deletions - 7

BACHELOR OF HEALTH SCIENCES MIDWIFERY PROGRAM 80

- Revision to Program Information
- Revision to Academic Regulations
    - Continuation in the Program
    - Good Standing
    - Probation
    - Required to Withdraw
- Revision to Program Requirements
    - Level I
    - Level II
- Revision to Financial Information

BACHELOR OF HEALTH SCIENCES PHYSICIAN ASSISTANT PROGRAM 84

- Revision to Financial Information

FACULTY OF HUMANITIES

UNDERGRADUATE CURRICULUM REPORT

TO UNDERGRADUATE COUNCIL

FOR THE 2020 CALENDAR

NOVEMBER 2019

As approved by the Faculty of Humanities on November 11, 2019

REPORT TO SENATE
FACULTY OF HUMANITIES
SUMMARY OF MAJOR CURRICULUM CHANGES FOR 2020-21

NEW PROGRAMS

iARTS (Integrated Arts) Honours B.F.A. and Honours B.A. Programs *(Appendix I)*

MAJOR REVISIONS

None

DELETION OF A PROGRAM

None

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For a complete review of all changes, please refer to the November 2019 Faculty of Humanities Report to Undergraduate Council for changes to the 2020-2021 Undergraduate Calendar, found at http://www.humanities.mcmaster.ca/about/faculty-meetings/

REPORT TO UNDERGRADUATE COUNCIL

FACULTY OF HUMANITIES
SUMMARY OF CURRICULUM CHANGES FOR 2020-21

This report highlights substantive changes being proposed. For a complete review of all changes, please refer to the November 2019 Faculty of Humanities Report to Undergraduate Council for changes to the 2020-2021 Undergraduate Calendar, found at http://www.humanities.mcmaster.ca/about/faculty-meetings/

1. SCHOOL OF THE ARTS

● Proposed new program proposal: iARTS BFA and BA Programs (see Appendix I)

- **Studio Art**:
  ○ Addition of course to optional list
  ○ Addition of 1 new course (ART 3VA3)

- **Art History:**
  ○ Addition of 1 new course (ARTHIST 1PA3)
  ○ Minor revisions to 2 existing courses (ARTHIST 4AA3, 4X03)
  ○ Deletion of 1 course (ARTHIST 4H03)

- **Music:**
  ○ Minor revision to Music 1 notes and requirements
  ○ Updating of all Music program lists
  ○ Addition of 1 new course (MUSIC 1CR3)
  ○ Minor revision to 30 courses (MUSIC 1CB3, 1EE6, 1GF3/2GF3/3GF3/4GF3, 1GW3/2GW3/3GW3/4GW3, 2B03, 2CA3, 2CB3, 2MC3, 2MH3, 2MT3, 2MU3, 2U03, 3JJ3, 3K03, 3KK3, 3L03, 3M03, 3N03, 3P03, 4K03, 4L03, 4M03, 4N03, MUSICCOG 3MP3)
  ○ Deletion of 2 courses (MUSIC 1CA3, 2CG3)

- **Theatre & Film Studies:**
  ○ Addition of 1 new course (THTRFLM 1H03)
  ○ Revision to 14 existing courses (THTRFLM 1T03, 2AA3, 2BB3, 2CP3, 3FF3, 3L03, 3P03, 3PR3, 3PS3, 3S06, 3VS3, 3WW3, 3XX3, 4D03)
  ○ Updating of course notes

2. CLASSICS

● Deletion of optional course requirement from Concurrent Certificate in the Language of Medicine and Health *(as submitted to Certificates and Diplomas Committee)*
● Addition of 4 new courses (CLASSICS 2HA3, 2HB3, 2HC3, 2HD3)
● Revision to 2 existing courses (CLASSICS 3M03, 3X03)
● Deletion of 4 courses (CLASSICS 2LA3, 2LB3, 2LC3, 2LD3)
● Updating of course lists

3. COMMUNICATION STUDIES AND MULTIMEDIA

● **Communication Studies:**
○ Addition of courses to optional lists
○ Revision to 13 existing courses (CMST 2BB3, 2DD3, 2G03, 2H03, 2K03, 2LW3, 2PR3, 2RA3, 3H03, 3II3, 3JJ3, 3RR3, 3WR3)

- **Multimedia**:
  - Addition of courses to program course lists
  - Addition of 2 new courses (MMEDIA 3AN3, 3VA3)
  - Revision to 12 existing courses (MMEDIA 2G03, 3B03, 3BB3, 3C03, 3EE3, 3H03, 3I03, 3L03, 3PC3, 3Q03, 3S03, 3MU3)

4. DEPARTMENT OF ENGLISH AND CULTURAL STUDIES

- Updating of all program lists, and additional course options for Combined Math
- Addition of 4 new courses (ENGLISH 2CC3, 2CL3, 2M03, 4IW3)
- Revision to 1 existing course (ENGLISH 4Y06)
- Deletion of 4 courses (ENGLISH 2G06, 2M06, 3RR3, 4WI3)

5. DEPARTMENT OF FRENCH

- Minor changes to the French minor requirements
- Updating of Combined Math program requirements
- Addition of note regarding French course placement to Concurrent Certificate in Professional French *(as submitted to Certificates and Diplomas Committee)*
- Revision to 15 existing courses (FRENCH 1Z06, 2B03, 2BB3, 2G03, 2I03, 2JJ3, 2Z06, 3C03, 3CC3, 3GG3, 3II3, 3P03, 3V03, 4A03, 4CC3)
- Deletion of 1 course (FRENCH 4F03)
- Updating of course lists and notes

6. DEPARTMENT OF HISTORY

- Updating of all program course lists, and departmental notes
- Minor revision of requirements and notes for all current programs
- Addition of 6 new courses (HISTORY 1P03, 2GW3, 2IS3, 2SS3, 3GN3, 4RR3)
- Revision to 1 existing course (HISTORY 2HH3)
- Deletion of 10 existing courses (HISTORY 2HI3, 2IC3, 2MM3, 2S03, 2Y03, 3CP3, 3GH3/ARABIC 3GH3, 3S03, 4L03)

7. FACULTY OF HUMANITIES

- Updating of Level 1 course notes and lists to reflect current offerings

8. **DEPARTMENT OF LINGUISTICS AND LANGUAGES**

- Updating of Combined Cognitive Science of Language program notes
- Minor changes to all program language lists and optional course requirement lists
- Addition of 7 new courses (FARSI 1Z03, 1ZZ3, KOREAN 1Z03, 1ZZ3, 2X03, LINGUIST 4G03, 4HL3)
- Revision to 15 existing courses (ITALIAN 1A03, 1AA3, 1Z06, 2Z03, 2ZZ3, JAPANESE 1Z06, 2Z03, 2ZZ3, LINGUIST 2DD3, 2Sl3, 3NL3, 3SL3, 3TT3, 4AS3, 4E03)

9. PEACE STUDIES

- Updating of course lists and optional requirements in Combined program and Minor
- Addition of 3 new courses (PEACEST 2GW3, 4RR3, 4ST3)

● Revision to 13 existing courses (PEACEST 1A03, 2A03, 2B03, 2BB3, 2C03, 3P03, 3Y03, 4B03, 4FC3, 4G03, 4J03, 4L03, 4MA3)
● Deletion of 3 courses (PEACEST 3PA3, 4A03, 4MB3)

10. DEPARTMENT OF PHILOSOPHY

● Updating of JPPL course lists, and Combined Math requirements
● Revision to 3 existing courses (PHILOS 1F03, 3C03, 4V03)
● Change in title and notes to Concurrent Certificate in EPTIC *(as submitted to Certificates and Diplomas Committee)*

11. WOMEN'S STUDIES

● Updating of Minor notes and course lists
● Revision to 2 existing courses (WOMENST 2B03, 3BB3)

McMaster University | HUMANITIES

Humanities Academic Advising Office
Chester New Hall, Room 107
1280 Main Street West
Hamilton, ON L8S 4L9

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Date: December 2, 2019
To: Members of the Undergraduate Council

Re: Notification of Amendment to iARTS Program Proposal

Following review and approval of the Undergraduate Council's Curriculum and Admissions Committee of November 25, 2019, a minor amendment was made to the Integrated Arts new program proposal. This new draft, included here for review of Undergraduate Council, includes the addition of section 6.1.4 (p. 36), to provide further clarity on expected cohort size. This section now reads:

> **6.1.4** ANTICIPATED CLASS SIZE
> September 21/22, the first BFA class of 40 will be admitted. Sept. 22/23 add 61 steady state (10% attrition): 36 BFA +25 BA with 205 as program size in 2025/26.

A further minor addition on pages 42 and 43 will provide further clarity on approvals completed to date.

McMaster University

NEW PROGRAM PROPOSAL

Integrated Arts (iArts)

September 2019

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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.

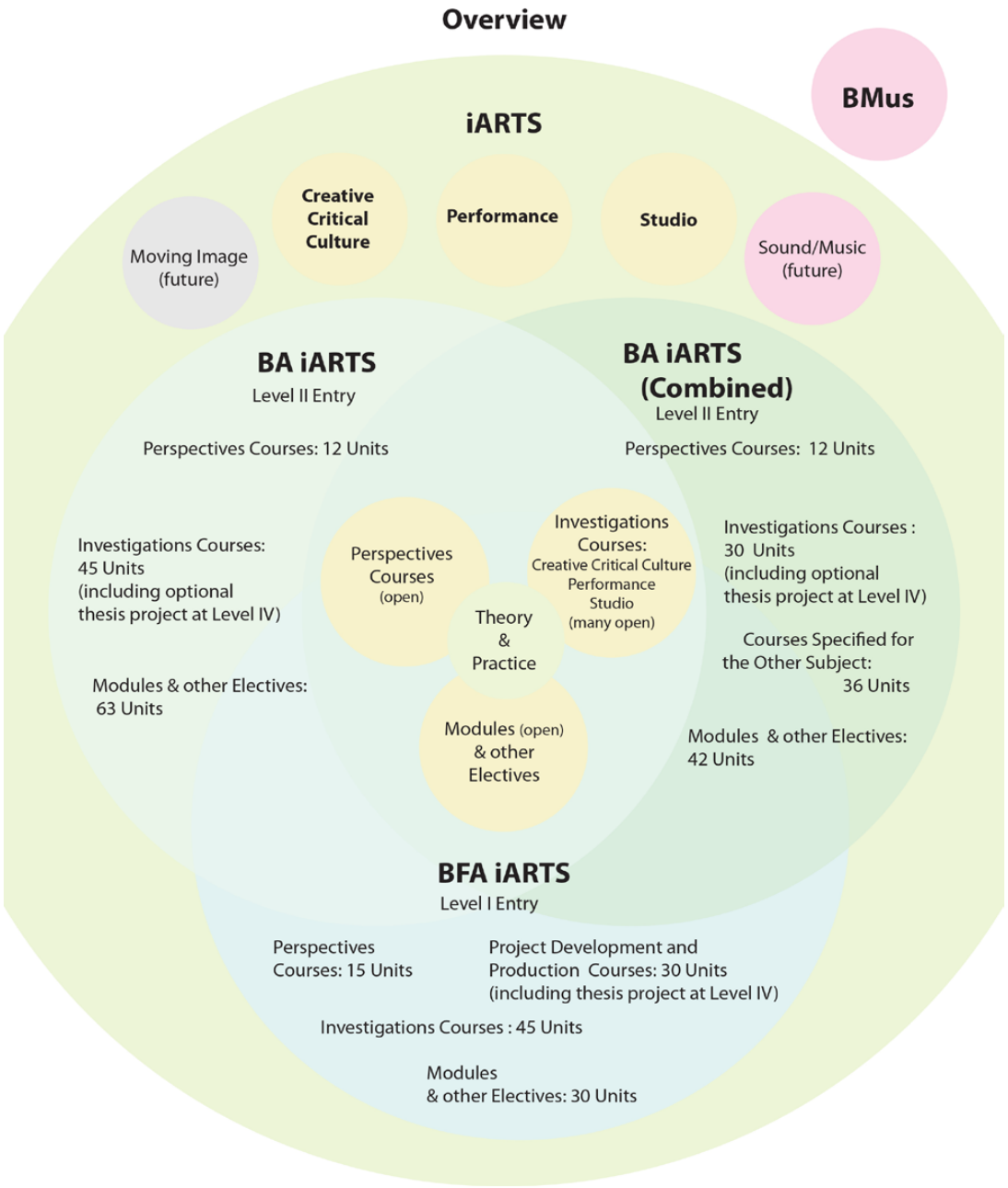
Modules are short one or two unit courses that might teach a specific technical-material practice, or explore a specific topic related to contemporary events, or study a particular idiosyncratic arts practice, or assemble interdisciplinary groups of students and scholars in content-based clusters, bringing 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

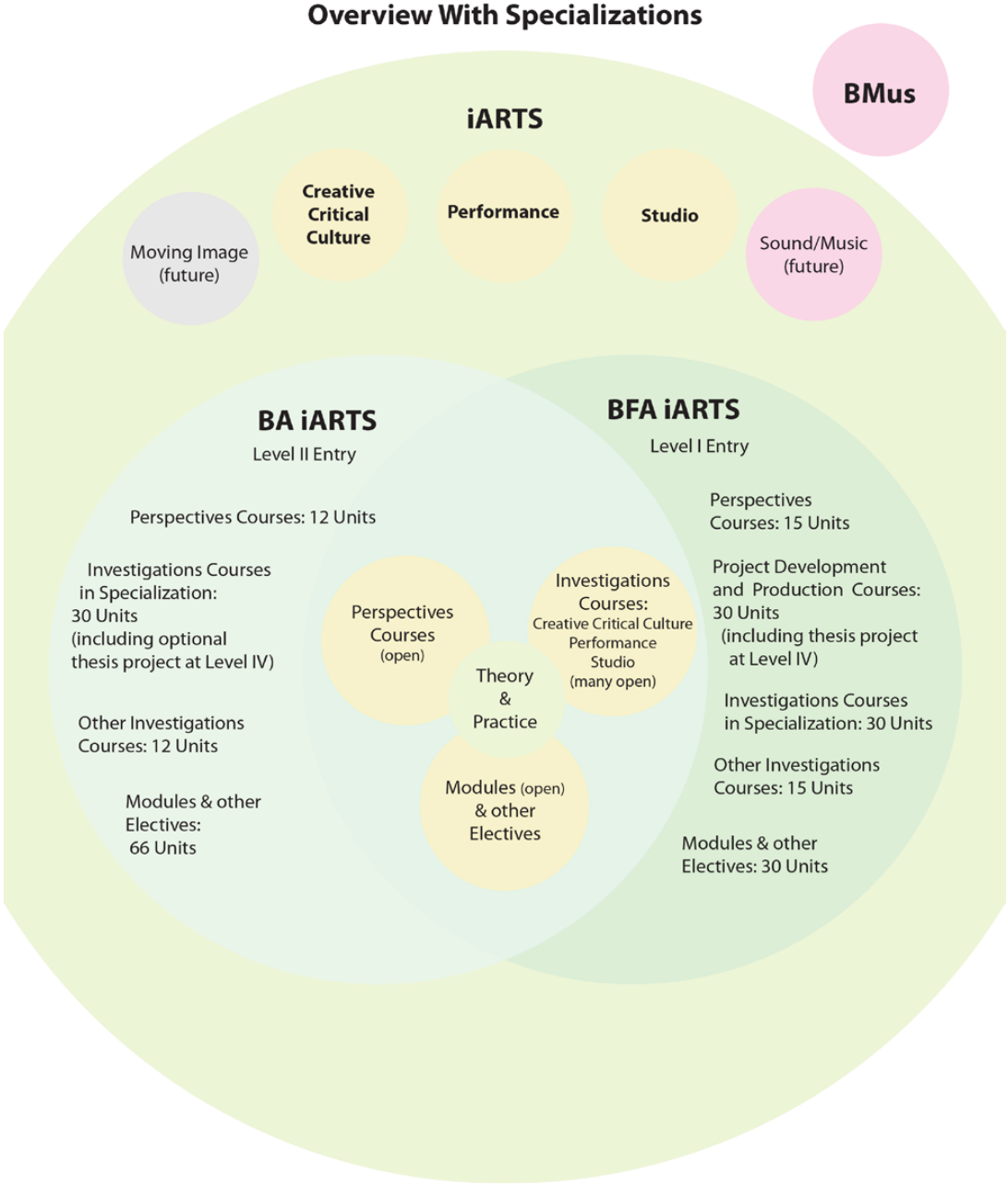
offer an opportunity for non-iArts students to find their way into upper level iArts courses as pre-requisites allow.

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 2010 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

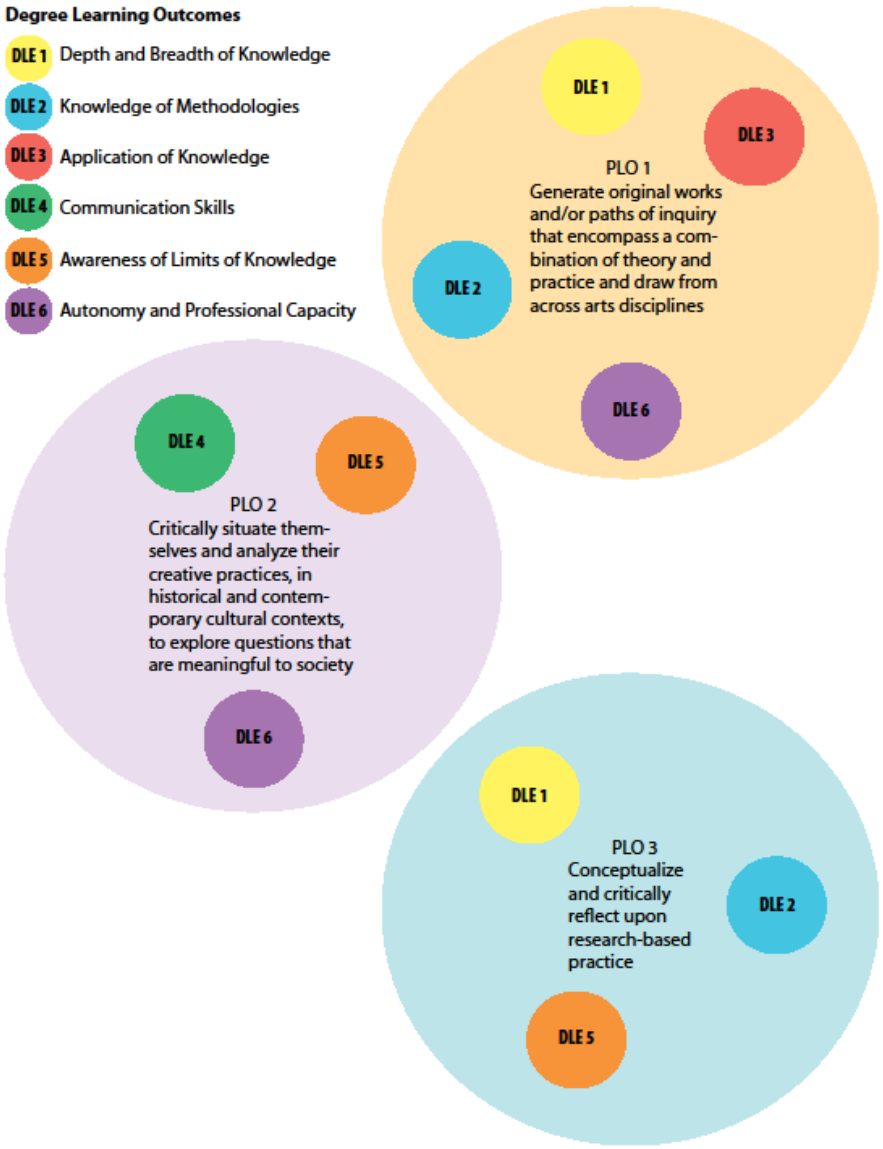
iArts IQAP Program Learning Outcomes

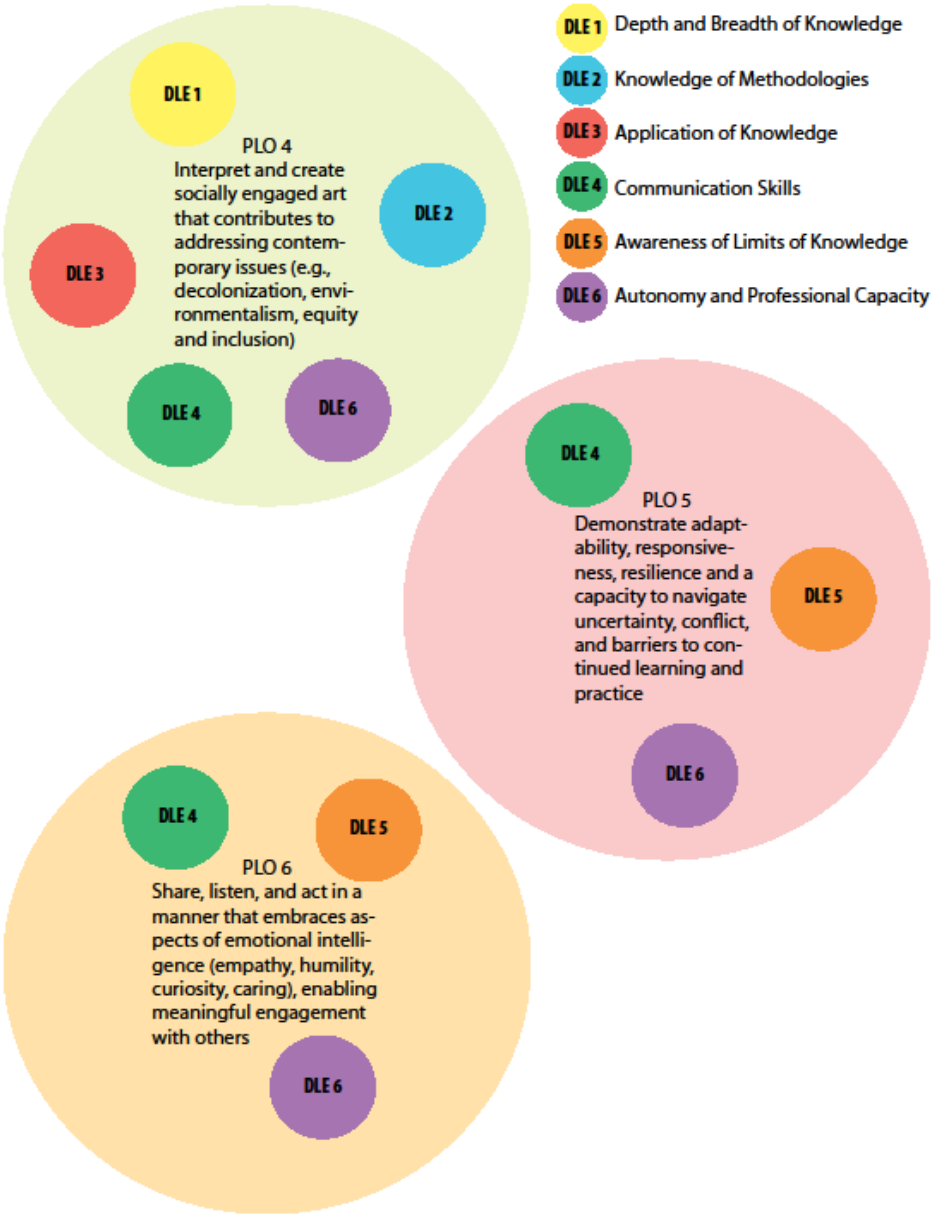
"Cultivating skills and strategies for life-long research supporting creative contributions to society"

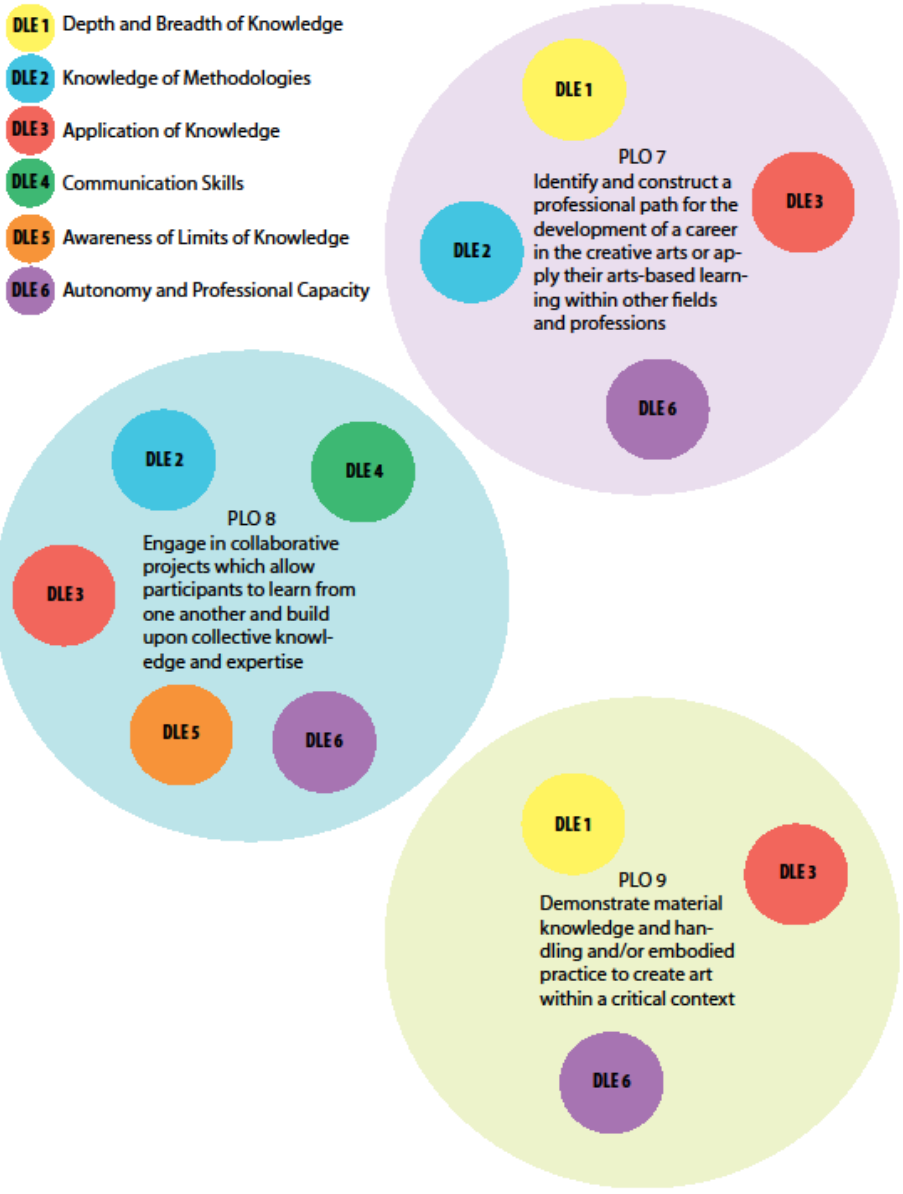
By the end of this program, successful students in the BFA and BA programs will be able to:

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
DLE 1
DLE 2
DLE 3
DLE 4
DLE 6
PLO 4
Interpret and create socially engaged art that contributes to addressing contemporary issues (e.g., decolonization, environmentalism, equity and inclusion)
DLE 4
DLE 5
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 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
DLE 3
PLO 9
Demonstrate material knowledge and handling and/or embodied practice to create art within a critical context
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

September 21/22, the first BFA class of 40 will be admitted. Sept. 22/23 add 61 steady state (10% attrition): 36 BFA +25 BA with 205 as program size in 2025/26.

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.

CHECKLIST FOR NEW PROGRAM PROPOSALS

The following section indicates all the items that are required as part of a ***complete*** new program proposal package which includes all the necessary documents. Part I, II and III should be submitted as separate files to iqap@mcmaster.ca.

PART I: COMPLETE NEW PROGRAM PROPOSAL DOCUMENT

- X **Complete New Program Proposal Template**
- X **Faculty CVs** (can be submitted on CD or USB)
- ☐ **Memorandum(s) of Understanding (Letters of Support)** (if applicable)

PART II: RESOURCE IMPLICATIONS AND FINANCIAL VIABILITY TEMPLATE

- X Completed
- ☐ Approved

PART III: FEES MEMO

- ☐ Completed
- ☐ Approved

TRACKING THE APPROVALS PROCESS FOR NEW UNDERGRADUATE PROGRAMS

PLEASE NOTE: This table must be appended to the New Program Proposal Document and updated as each step in the approvals process is completed.

STEP IN THE NEW PROGRAM APPROVALS PROCESS	NAME OF COMMITTEE/ INDIVIDUAL PROVIDING CONSULTATION	DATE OF DOCUMENT APPROVAL
Resource Implications & Financial Viability Template (Budget)	**Linda Coslovi, Executive Director, Finance & Planning (Academic)**	
University Students Fees Committee Approval of Budget		
Departmental & Faculty Approvals	**Sean Corner, Jackie Osterman, Faculty of Humanities DAC/APC**	**Nov. 7, 2019**
	Claude Eilers, Faculty of Humanities Meeting	**Nov. 11, 2019**

Please note that approvals from the following internal committees is also required before the New Program Proposal can be sent to Quality Council & MTCU: *Curriculum & Admissions Committee, Undergraduate Council, University Planning Committee* and *Senate.*

iARTS Calendar Copy & Course Descriptions

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iARTS Course Lists

iARTS Investigations Course List A

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- 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
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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

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

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 completion of McMaster University's Quality Assurance approval process.)

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
- 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

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 completion of McMaster University's Quality Assurance approval process.)

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.

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2.0 PROGRAM CLOSURES/MERGER:

2.1 Honours B.Sc. Geography & Environmental Sciences

See attached memorandum from Dr. Maureen MacDonald, Dean, Faculty of Science and Dr. Jerimiah Hurley, Dean, Faculty of Social Sciences

3.0 MAJOR REVISIONS:

3.1 Honours Biology and Environmental Sciences (B.Sc.)

Effective September 2021, this program will be renamed Honours Biodiversity and Environmental Sciences (B.Sc.) Students who enrolled prior to September 2021 will be given the choice to remain in Honours Biology and Environmental Sciences or transfer into Honours Biodiversity and Environmental Sciences (B.Sc.)

~~Honours Biology and Environmental Sciences is a flexible program that focuses on interdisciplinary studies among these two fields. Jointly offered by the Department of Biology and the School of~~

~~Geography and Earth Sciences, this program enables students to select courses according to their interests; to develop broad knowledge, and understanding of the linkages between biological and environmental processes; and to apply these to questions of biological, biomedical, or environmental interests. This program prepares students for graduate studies, careers in industry or academic research laboratories.~~ Honours Biodiversity and Environmental Science is a flexible program that enables students to obtain an understanding of how a variety of organisms are able to adapt to their changing environments at the community and ecosystem levels. Offered jointly by the Department of Biology and School of Geography and Earth Sciences, this program enables students to select courses according to their interests; to develop broad knowledge, and understanding of the linkages between biodiversity and environmental processes; and to apply these to questions of biological, biomedical, or environmental interests. This program prepares students for graduate studies, careers in industry or academic research laboratories.

Admission Note
Students are strongly recommended to take CHEM 1A03 and 1AA3 in Level I.

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,~~ ~~c~~Completion of any Level I program with a Grade Point Average of at least 5.0 including:

3 units from
- MATH 1A03 - Calculus For Science I
- MATH 1LS3 - Calculus for the Life Sciences I

6 units from the following courses, where an average of at least 6.0 (between the courses) is required
- BIOLOGY 1A03 - Cellular and Molecular Biology
- BIOLOGY 1M03 - Biodiversity, Evolution and Humanity

3 units from the following courses, with a grade of at least C+
- EARTHSC 1G03 - Earth and the Environment
- ENVIRSC 1C03 - Climate, Water And Environment
- ENVIRSC 1G03

12 units from
- ASTRON 1F03 - Introduction to Astronomy and Astrophysics
- BIOPHYS 1S03 - Biophysics of Movement and the Senses: From Microbes to Moose
- CHEM 1A03 - Introductory Chemistry I
- CHEM 1AA3 - Introductory Chemistry II
- COMPSCI 1JC3 - Introduction to Computational Thinking
- COMPSCI 1MD3 - Introduction to Programming
- COMPSCI 1XA3 - Computer Science Practice and Experience: Basic Concepts
- EARTHSC 1G03 - Earth and the Environment
- ENVIRSC 1C03 - Climate, Water And Environment
- ENVIRSC 1G03
- ENVSOCTY 1HA3 - Society, Culture and Environment
- ENVSOCTY 1HB3 - Population, Cities and Development
- GEOG 1HA3 - ~~Society, Culture and Environment~~
- GEOG 1HB3 - ~~Population, Cities and Development~~
- LIFESCI 1D03 - Medical Imaging Physics
- LIFESCI 1E03
- MATH 1AA3 - Calculus For Science II
- MATH 1B03 - Linear Algebra I
- MATH 1LT3 - Calculus for the Life Sciences II
- MEDPHYS 1E03
- PHYSICS 1A03 - Introductory Physics
- PHYSICS 1AA3 - Introduction To Modern Physics
- PHYSICS 1C03 - Physics for the Chemical and Physical Sciences

- PHYSICS 1CC3 - Modern Physics for the Chemical and Physical Sciences
- PSYCH 1F03 - Survey of Psychology
- PSYCH 1FF3 - Survey of Biological Basis of Psychology
- PSYCH 1X03 - Introduction to Psychology, Neuroscience & Behaviour
- PSYCH 1XX3 - Foundations of Psychology, Neuroscience & Behaviour
- SCIENCE 1A03 - Investigating Science: Opportunities & Experiences

(See *Admission Note* above.)

Program Notes

1. The Biology and Environmental Sciences program allows students (especially those focused on ecology and conservation) to choose Biology and Environmental Science courses that reflect their own interests. Students are strongly encouraged to discuss their course selections with an academic advisor in the Department of Biology or the School of Geography and Earth Sciences.
2. Prerequisites for upper year courses must be checked carefully when selecting courses in Level II. Biochemistry and Organic Chemistry prerequisites exist in many upper year biology courses. Students are encouraged to take six units from CHEM 2E03, 2OA3, 2OB3, 2OC3 , 2OD3, 2OG3.
3. Students interested in completing a thesis may take one of BIOLOGY 4C12 A/B S, 4F06 A/B S or EARTHSC 4MT6 A/B in Level IV, subject to meeting the prerequisites. Students considering graduate studies are recommended to complete a thesis course.
4. Only one of BIOLOGY 4C12 A/B S, 4F06 A/B S or EARTHSC 4MT6 A/B may be completed as part of the program requirements. Completion of EARTHSC 3RD3 in Level III is required preparation for EARTHSC 4MT6 A/B.

Course List 1

- BIOCHEM 2EE3 - Metabolism and Physiological Chemistry
- BIOCHEM 3G03 - Proteins and Nucleic Acids
- BIOLOGY 2A03 - Integrative Physiology of Animals
- BIOLOGY 2B03 - Cell Biology
- BIOLOGY 2C03 - Genetics
- BIOLOGY 2D03 - Plant Biodiversity and Biotechnology
- BIOLOGY 2EE3 - Introduction to Microbiology and Biotechnology
- BIOLOGY 2F03 - Fundamental and Applied Ecology
- BIOLOGY 3ET3 - Ecotoxicology
- CHEM 2A03 - Quantitative Chemical Analysis
- CHEM 2AA3 - Quantitative Chemical Analysis
- CHEM 2OA3 - Organic Chemistry I
- CHEM 2OB3 - Organic Chemistry II
- CHEM 2OC3
- CHEM 2OD3 - Synthesis and Function of Organic Molecules
- CHEM 2OG3 - Structure and Reactivity of Organic Molecules
- CHEM 2P03 - Applications of Physical Chemistry
- ~~CHEM 2PD3~~
- CHEMBIO 2A03 - Introduction to Bio-Analytical Chemistry
- CHEMBIO 2P03 - Physical Chemistry Tools for Chemical Biology
- ~~LIFESCI 2H03~~
- LIFESCI 2X03 - Environmental Change and Human Health
- PSYCH 3T03 - Behavioural Ecology

Course List 2

- EARTHSC 2E03 - Earth History
- EARTHSC 2FE3 - Introduction to Field Methods in Earth Sciences
- EARTHSC 3CC3 - Earth's Changing Climate
- EARTHSC 3E03 - Clastic Sedimentary Environments
- EARTHSC 3RD3 - Research Design and Dissemination in Earth and Environmental Sciences
- EARTHSC 3W03 - Physical Hydrogeology

- EARTHSC 4CC3 - Stable Isotopes in Earth and Environmental Systems
- EARTHSC 4FF3 - Topics of Field Research
- EARTHSC 4G03 - Glacial Sediments and Environments
- EARTHSC 4MI3
- EARTHSC 4MT6 A/B - Senior Thesis
- EARTHSC 4P03 - Coral Reef Environments
- EARTHSC 4VV3 - Environmental Geophysics
- EARTHSC 4WB3 - Contaminant Hydrogeology
- ENVIRSC 2B03 - Soils and the Environment
- ENVIRSC 2C03 - Surface Climate Processes and Environmental Interactions
- ENVIRSC 2E03
- ENVIRSC 2EI3
- ENVIRSC 2GI3
- ENVIRSC 2L03
- ENVIRSC 2Q03 - Introduction to Environmental Geochemistry
- ENVIRSC 2W03 - Physical Hydrology
- ENVIRSC 3B03 - Ecosystems and Global Change
- ENVIRSC 3CC3
- ENVIRSC 3E03
- ENVIRSC 3EE3
- ENVIRSC 3MB3
- ENVIRSC 3ME3 - Environmental Field Camp
- ENVIRSC 3O03 - Contaminant Fate and Transport
- ENVIRSC 3SR3
- ENVIRSC 3U03 - Environmental Systems Modelling
- ENVIRSC 3W03
- ENVIRSC 4C03 - Advanced Physical Climatology
- ENVIRSC 4CC3
- ENVIRSC 4FF3
- ENVIRSC 4G03
- ENVIRSC 4GA3
- ENVIRSC 4HH3
- ENVIRSC 4MI3 - Independent Study in Earth and Environmental Sciences
- ENVIRSC 4N03 - Global Biogeochemical Cycles
- ENVIRSC 4W03 - Hydrologic Modelling
- ENVIRSC 4WB3
- ENVSOCTY 2EI3 - Environmental Issues
- ENVSOCTY 2GI3 - Geographic Information Systems
- ENVSOCTY 3EE3 - Energy and Society
- ENVSOCTY 3GI3 - Advanced Raster GIS
- ENVSOCTY 3GV3 - Advanced Vector GIS
- ENVSOCTY 3MB3 - Data Analysis
- ENVSOCTY 3SR3 - Remote Sensing
- ENVSOCTY 4GA3 - Applied Spatial Statistics
- ENVSOCTY 4HH3 - Environment and Health
- GEOG 2EI3 - ~~Environmental Issues~~
- GEOG 2GI3 - ~~Geographic Information Systems~~
- GEOG 3EE3 - ~~Energy and Society~~
- GEOG 3GI3 - ~~Advanced Raster GIS~~
- GEOG 3GV3 - ~~Advanced Vector GIS~~
- GEOG 3MB3 - ~~Data Analysis~~
- GEOG 3SR3 - ~~Remote Sensing~~
- GEOG 4GA3 - ~~Applied Spatial Statistics~~

- GEOG 4HH3 - ~~Environment and Health~~

Requirements
120 units total (Levels I to 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
9 units from
- BIOLOGY 2F03 - Fundamental and Applied Ecology
- ENVIRSC 2W03 - Physical Hydrology
- ENVSOCTY 2GI3 - Geographic Information Systems
- GEOG 2GI3 - ~~Geographic Information Systems~~

3 units from
- BIOLOGY 2C03 - Genetics
- LIFESCI 2G03 - Genes, Genomes and Society

3 units from
- ENVSOCTY 3MB3 - Data Analysis
- GEOG 3MB3 - ~~Data Analysis~~
- STATS 2B03 - Statistical Methods for Science

3 units from
- BIOLOGY 2B03 - Cell Biology
- BIOLOGY 2D03 - Plant Biodiversity and Biotechnology
- BIOLOGY 2EE3 - Introduction to Microbiology and Biotechnology
- LIFESCI 2X03 - Environmental Change and Human Health

3 units from
- EARTHSC 2E03 - Earth History
- ENVIRSC 2B03 - Soils and the Environment
- ENVIRSC 2C03 - Surface Climate Processes and Environmental Interactions
- ENVIRSC 2Q03 - Introduction to Environmental Geochemistry

9 units
- Electives

Level III: 30 Units
6 units from
- BIOLOGY 3EI3 - Ecological Indicators
- BIOLOGY 3ET3 - Ecotoxicology
- BIOLOGY 3JJ3 - Field Methods In Ecology
- ENVIRSC 3B03 - Ecosystems and Global Change
- ENVIRSC 3ME3 - Environmental Field Camp

6 units from
- BIOLOGY 3DD3 - Communities and Ecosystems
- BIOLOGY 3EI3 - Ecological Indicators
- BIOLOGY 3ET3 - Ecotoxicology
- BIOLOGY 3JJ3 - Field Methods In Ecology
- BIOLOGY 3R03 - Field Biology I
- BIOLOGY 3SS3 - Population Ecology
- ENVIRSC 3B03 - Ecosystems and Global Change

6 units from
- EARTHSC 3RD3 - Research Design and Dissemination in Earth and Environmental Sciences
- EARTHSC 3W03 - Physical Hydrogeology
- ENVIRSC 3O03 - Contaminant Fate and Transport
- ENVIRSC 3U03 - Environmental Systems Modelling
- ENVSOCTY 3GI3 - Advanced Raster GIS

- ENVSOCTY 3SR3 - Remote Sensing
- GEOG 3GI3 - ~~Advanced Raster GIS~~
- GEOG 3SR3 - ~~Remote Sensing~~

12 units
- Electives

Level IV: 30 Units
6 units from
- *Course List 1* or *Course List 2*

6 units
- Levels III, IV courses from *Course List 2*

6 units
- Levels III, IV Biology, Molecular Biology courses

3 units
- ENVIRSC 4EA3 - Environmental Assessment

9 units
- Electives

Requirements for Students Who Entered in September 2018
120 units total (Levels I to 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
9 units from
- BIOLOGY 2F03 - Fundamental and Applied Ecology
- ENVIRSC 2W03 - Physical Hydrology
- ENVSOCTY 2GI3 - Geographic Information Systems
- GEOG 2GI3 - ~~Geographic Information Systems~~

3 units from
- BIOLOGY 2C03 - Genetics
- LIFESCI 2G03 - Genes, Genomes and Society

3 units from
- ENVSOCTY 3MB3 - Data Analysis
- GEOG 3MB3 - ~~Data Analysis~~
- STATS 2B03 - Statistical Methods for Science

3 units from
- BIOLOGY 2B03 - Cell Biology
- BIOLOGY 2D03 - Plant Biodiversity and Biotechnology
- BIOLOGY 2EE3 - Introduction to Microbiology and Biotechnology
- LIFESCI 2X03 - Environmental Change and Human Health

3 units from
- EARTHSC 2E03 - Earth History
- ENVIRSC 2B03 - Soils and the Environment
- ENVIRSC 2C03 - Surface Climate Processes and Environmental Interactions
- ENVIRSC 2Q03 - Introduction to Environmental Geochemistry

9 units
- Electives

Levels III-IV: 60 Units
6 units from
- *Course List 1* or *Course List 2*

21 units
- Levels III, IV courses from *Course List 2*

18 units

- Levels III, IV Biology, Molecular Biology courses

3 units

- ENVIRSC 4EA3 - Environmental Assessment

12 units

- Electives

Students who entered the program prior to September 2018 should refer to the 2017-2018 Undergraduate Calendar or their personal Advisement Report for program requirements.

~~Requirements for Students Who Entered Prior to September 2018~~
~~*120 units total (Levels I to IV), of which no more than 48 units may be Level I*~~

~~Level I: 30 Units~~
~~30 units~~
~~(See *Admission* above.)~~

~~Levels II-IV: 90 Units~~
~~9 units from~~
- ~~EARTHSC 2E03 - Earth History~~
- ~~ENVIRSC 2B03 - Soils and the Environment~~
- ~~ENVIRSC 2C03 - Surface Climate Processes and Environmental Interactions~~
- ~~ENVIRSC 2E03~~
- ~~ENVIRSC 2GI3~~
- ~~ENVRISC 2L03~~
- ~~ENVIRSC 2Q03 - Introduction to Environmental Geochemistry~~
- ~~ENVIRSC 2W03 - Physical Hydrology~~
- ~~GEOG 2GI3 - Geographic Information Systems~~

~~9 units from~~
- ~~BIOLOGY 2A03 - Integrative Physiology of Animals~~
- ~~BIOLOGY 2B03 - Cell Biology~~
- ~~BIOLOGY 2C03 - Genetics~~
- ~~BIOLOGY 2D03 - Plant Biodiversity and Biotechnology~~
- ~~BIOLOGY 2EE3 - Introduction to Microbiology and Biotechnology~~
- ~~BIOLOGY 2F03 - Fundamental and Applied Ecology~~
- ~~LIFESCI 2X03 - Environmental Change and Human Health~~

~~3 units from~~
- ~~ENVIRSC 3MB3~~
- ~~STATS 2B03 - Statistical Methods for Science~~

~~6 units from~~
- ~~*Course List 1* or *Course List 2*~~

~~21 units~~
- ~~Levels III, IV courses from *Course List 2*~~

~~18 units~~
- ~~Levels III, IV Biology, Molecular Biology courses~~

~~3 units~~
- ~~ENVIRSC 4EA3 - Environmental Assessment~~

~~21 units~~
- ~~Electives~~

Justification:

Program has been renamed to reflect the flavor of curriculum and the courses students are selecting with focus on biodiversity, soil, ecology, hydrology, and climate. In-course students will be contacted and given the choice to remain enrolled in Biology and Environmental Sciences or switch to the newly named Biodiversity and Environmental Sciences program label. Program enrolment limit has been removed as all qualified students can be accommodated.

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November 12, 2019

TO: Associate Vice-President (Faculty)
Chair, Undergraduate Council

FROM: Dr. Maureen McDonald, Dean, Faculty of Science
Dr. Jeremiah Hurley, Dean, Faculty of Social Sciences

SUBJECT: Program Closure/Merger of Honours Geography & Environmental Science and Honours Geography and Environmental Studies

During the 2018-19 academic year, the School of Geography and Earth Science (SGES) undertook a comprehensive review of its undergraduate programs. The SGES program review involved focus groups with program students, an online survey of Level III students asking about program choice, meetings with academic advisors in Science and Social Sciences, and an analysis of SGES program and course enrolment data.

The review found significant overlap between the Honours Environmental Sciences and Honours Geography and Environmental Sciences programs. For this reason, SGES recommended merging these programs into a single Honours Environmental Sciences program (also available as a Coop program).

The review also found significant overlap between the Honours Geography program and the Honours Geography & Environmental Studies program. For this reason, SGES recommended merging these programs into a renamed Honours Environment & Society program. The new name signals the program's central focus on the interrelationship between human societies and the built, social, economic and natural environments they inhabit; and the explicitly interdisciplinary nature of the program, which spans Environmental Studies, Human Geography, Geographic Information Science, and Urban Studies.

For details, see Major Modifications section below.

As per the proposed changes, the Faculty is proposing to do the following:

- Notify students that the existing Honours Geography & Environmental Science program is no longer available and direct Level I students who intended to register in this program to the merged Honours Environmental Science program. Admissions requirements to the merged program will be the same as those required for Honours Geography & Environmental Science. All currently enrolled students will be given the opportunity to complete their program requirements.

- Notify students that the Coop version of the Honours Geography & Environmental Science program will be phased out. Admission will be last available in September 2020. All currently enrolled students will be given the opportunity to complete their program requirements.

- Notify students that the existing Honours Geography & Environmental Studies program is no longer available and direct Level I students who intended to register in this program to the merged Honours Environment and Society program. Admissions requirements to the merged program will be the same as those required for Honours Geography & Environmental Studies. All currently enrolled students will be given the opportunity to complete their program requirements.

- Notify students that the existing Honours Geography program will be renamed Honours Environment and Society. All currently enrolled students will be given the opportunity to graduate with the existing program name, but they can also elect to graduate with the new name.

Students were consulted extensively during the program review process (in focus groups and surveys), and the broader student population has been made aware of these impending changes through email communications from the SGES Associate Director (Undergraduate):

SGES Program Changes

I want to update you on some exciting changes to our undergraduate programs. Before I outline what's changing (and what's not changing), let me be clear that these revisions will not impact to you as current program students, although there are some changes that you can choose to adopt if you wish (see 1.c and 2.a below). If you have specific questions, please feel free to contact Kara Salvador or myself for further information. We'll also be organizing information sessions in the winter term to provide additional guidance for students.

Let me offer some context for the changes. As some of you know, we undertook a review of our undergraduate BA and BSc programs last year. This involved focus groups with students in BA and BSc program, an online survey of Level III students asking about program choice, meetings with academic advisors in Science and Social Sciences, and an analysis of SGES program and course enrolment data. From the review, we learned a number of things:

- *On the BSc side, students and academic advisors felt we had too many programs and the differences between them were not clear. This was particularly the case for our Honours Environmental Sciences and Geography & Environmental Sciences programs.*
- *On the BA side, we noted significant overlaps between our Human Geography and Geography & Environmental Studies programs.*
- *Across all programs, many students in focus groups and online surveys were very interested in environmental issues, expressing both academic interest and personal concern with current environment challenges.*
- *Many students value flexible programs that offer multiple pathways to degree completion (e.g., some BA students take courses on climate science, while many BSc students take urban planning, environmental policy and sustainability courses)*

On the basis of the review, we are making a number of changes that we believe will better showcase the strengths of the school and ensure future growth in enrolments.

1. Science

a. *Our Honours Earth and Environmental Sciences program is not changing.*

b. *We are merging our Honours Environmental Sciences and Geography & Environmental Sciences programs to create a single, flexible program that will allow students to take course from across the school. This program will retain the Honours Environmental Sciences name. As of Fall 2020, there will be no new students admitted to Honours Geography & Environmental Sciences. However, if you're currently in Level II and thinking about the co-op option for Honours Geography and Environmental Science, you will still be able to enroll in co-op for the 2020-21 academic year.*

c. *We are changing the name of Honours Biology and Environmental Science to Biodiversity and Environmental Sciences as of Fall 2020. This reflects a growing focus in ecological and environmental research generally (and in this program specifically) on how diverse organisms are able to adapt to their changing environments at both the community and ecosystem levels. If you are currently in this program you will graduate with the existing name, but you can choose to graduate with the new name if you wish.*

2. Social Sciences

a. *The big change to our BA programs is that we are merging our Honours Geography and Geography & Environmental Studies programs into a single program that will be called Honours Environment and Society. We believe this name captures our central focus on the dynamic interrelationship between human societies and the environments (built, social, economic and natural) they inhabit; and the interdisciplinary nature of our courses, which span Environmental Studies, Human Geography, Geographic Information Science, and Urban Studies. ~~This change will have no impact if you are currently enrolled in one of the existing programs unless you would like to graduate with the new program name~~. Please contact Kara if this is something you're interested in.*

a. *Reflecting the new program name, we are changing our GEOG course codes to ENVSOCTY. This means that when you go to register this summer all of our social science courses in the undergraduate calendar and on Mosaic will be listed under ENVSOCTY. For the most part, the course titles and descriptions will remain the same.*

As faculty members, we are really excited by these changes and firmly believe they will help us to welcome even more students into our programs and courses in the coming years. Again, please contact Kara or myself if you have further questions.

Faculty members within SGES have been made aware of these impeding changes through review process and an associated SGES retreat. The revisions were given unanimous faculty support. More broadly, the

changes were discussed and voted on the Faculty of Science Academic Planning & Policy Committee, and General Faculty. The changes to the Honours Geography and Honours Geography & Environmental Studies BA programs were also discussed and approved by the Faculty of Social Sciences Undergraduate Curriculum Committee.

The above changes are being made in the best interests of students, faculty, and the Faculty of Science.

FACULTY OF SCIENCE

REPORT TO UNDERGRADUATE COUNCIL

SUMMARY OF CURRICULUM CHANGES FOR 2020-2021

Below, is the summary of substantive curriculum revisions 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

Additionally, substantive amendments to existing course capacities and categories are included for information and can be found in the *Changes to Existing Courses* sections of the Departments and Schools.

1.0 Department of Biochemistry and Biomedical Sciences

- Honours Biochemistry program will require an additional six units of Biochemistry Course List to more closely align the requirements with those of the Honour Biochemistry Biomedical Research Specialization.
- Course Lists updated to include suitable offerings.

2.0 Department of Biology

- As a better reflection of the curriculum, effective, September 2021, the Honours B.Sc. Biology and Environmental Sciences program will be renamed Biodiversity and Environmental Sciences. In-course students will have the option of graduating with either program label. The program enrolment limit has been removed for the program as all interested and qualified students can be accommodated.
- Honours Biology and Math program requirements updated to reflect new offerings and a change in requirements as determined by the Department of Mathematics and Statistics.
- Honours Biology and Psychology, Neuroscience and Behaviour program requirements updated to reflect new offerings and a change in requirements as determined by the Department of Psychology, Neuroscience and Behaviour.

3.0 Department of Chemistry and Chemical Biology

- Honours B.A.Sc. in Sustainable Chemistry program (with a Co-op option) has been introduced. The flexible, interdisciplinary program is designed to allow graduates to be career ready.
- Requirements for the Honours Chemistry & Honours Chemical Biology programs updated to reflect course changes.
- CHEM 2BC3 has been introduced, replacing CHEM 3BC3.
- CHEM 2SC3, 3SC3, 4SC3 have been introduced and will be phased in to support the new Sustainable Chemistry program.
- CHEM 2AA3 and 2PC3 have been deleted.

4.0 School of Geography and Earth Sciences

- The School of Geography and Earth Sciences Changes recently completed a review of their undergraduate programs. The following curriculum decisions were made:
  - Given the significant overlap between Honours Environmental Science and Honours Geography and Environmental Science these programs will merge into one, named Honours Environmental Sciences. The program requirements have been blended to allow currently

enrolled Honours Geography and Environmental Sciences students to complete their program or switch to Honours Environmental Sciences.
- A new minor in Environment and Society has been introduced to replace both the Minor in Geography and the Minor in Environmental Sciences
- All courses with the designation GEOG are renamed ENVSOCTY.

- All program requirements, course lists, and requisites updated to reflect the change in course designation and other amendments to offerings.
- EARTHSC 3VV3 has been introduced and will replace EARTHSC 4VV3.
- ENVSOCTY 2TF3, ENVSOCTY 3EN3, ENVSOCTY 4SR3 are introduced as new offerings.
- EARTHSC 4IN3 has been deleted.

5.0 School of Interdisciplinary Science

Integrated Science (iSci)
- No substantive changes made.

Life Sciences
- Effective September 2021, admission to the Life Sciences Origins of Disease Specialization will require CHEM 1AA3.
- CHEM 1AA3 will be stated as an explicit program requirement (that must be completed by the end of Level 2) for the Life Sciences Sensory Motor Systems Specialization.

Medical Radiation Sciences
- Program requirements have been modified to ensure students meet professional accreditation.
- MEDRADSC 2AA3 and 3BB3 have been introduced.
- 18 units have been deleted including: MEDRADSC 2BB3, 2Z03, 3C03, 3HD3, 3T03, 3U03.

6.0 Department of Kinesiology
- KINESIOL 4W03 has been introduced.
- KINESIOL 3A03 and 3BB3 have been deleted.

7.0 Department of Mathematics and Statistics
- Requirements for all Honours Math and Stats programs including Actuarial and Financial Math (AFM) have been amended to include a new offering/option to fulfill the algebra requirement, a slight relaxation of the calculus/analysis requirement, and the opportunity to take Level V offerings.
- Effective September 2020, AFM students will require completion of non-life insurance offerings, deemed necessary and appropriate for the program and post-graduate credentials.
- Effective September 2021, admission to Honours Mathematics and Computer Science will require completion of COMPSCI 1DM3.
- Eight new courses have been introduced including: MATH 1XA3, MATH 2LA3, MATH 3IA3, MATH 5GT3, STATS 3ST3, STATS 4G03, STATS 4H03, STATS 5GT3.
- Included on the above list are MATH 5GT3 and STATS 5GT3. These offerings will allow undergraduate students to take 700-level graduate courses for credit toward their undergraduate degree.
- STATS 3H03 has been deleted.

8.0 Department of Physics and Astronomy
- Requirements for all programs have been updated to better balance work load and reflect new offerings including: one that exposes students to laboratory practice in Level II, a teaching placement offered as an alternative to a thesis course, and Level 5 courses.
- Seven courses have been introduced including: ASTRON 5X03, PHYSICS 2P03, PHYSICS 3ET3, PHYSICS 3G03, PHYSICS 3N04, PHYSICS 3P03, PHYSICS 5GT3.

- Included on the above list are ASTRON 5X03 and PHYSICS 5GT3. These offerings will allow undergraduate students to take 700-level graduate courses for credit toward their undergraduate degree.
- Three offerings have been deleted: PHYSICS 1X00, PHYSICS 2H04, PHYSICS 3N03.

9.0 Department of Psychology, Neuroscience & Behaviour

Human Behaviour
- No substantive changes made to the Human Behaviour programs
- HUMBEHV 4K06 has been deleted.

Neuroscience
- No substantive changes made**.**

Psychology, Neuroscience & Behaviour (PNB)
- Honours Psychology, Neuroscience and Behaviour programs will require students to complete at least one research experience.
- Nine units have been introduced including: PNB 2A03, 3QM3, PSYCH 3SE3.
- Nine units have been deleted including: PNB 3RM3, PSYCH 4S03, 4Y03.

10.0 Faculty of Science

Introductory Section:
- No substantive changes.

Level I Programs:
- *Science I Course List* updated to reflect changes to offerings.

Science Courses:
- No substantive changes.

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:

Level II: 30 Units
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

Level III, 30 units
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

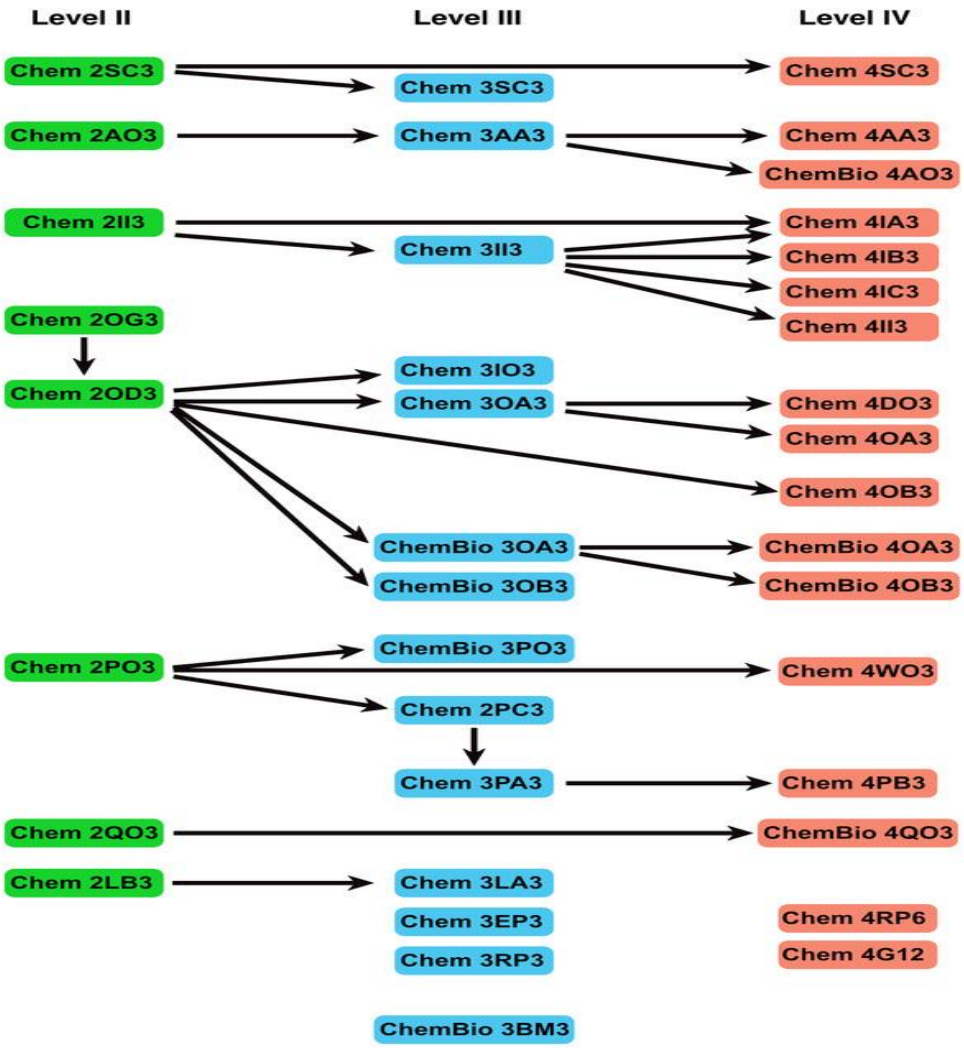
Level IV, 30 units
3 Units from CHEM 4SC3 - Sustainable Chemistry: Analysis and Regulation
12 Units from Level II-IV Chemistry or Chemical Biology (course list 1)
9 Units from elective courses
6 Units from course list 2

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.

Faculty of Social Sciences

Undergraduate Curriculum Report to

Undergraduate Council

FOR THE 2020-2021 UNDERGRADUATE CALENDAR

Approved by
The Faculty of Social Sciences
Faculty Council

November 11, 2019

REPORT TO SENATE

FACULTY OF SOCIAL SCIENCES

SUMMARY OF MAJOR CURRICULUM CHANGES FOR 2020-2021

Below is the summary of substantive curriculum changes being proposed by the Faculty of Social Sciences. For complete review of all of the changes, please refer to the November 2019 Faculty of Social Sciences Report to Undergraduate Council for changes to the 2020-2021 Undergraduate Calendar, found on MacDrive at https://macdrive.mcmaster.ca/f/ff988b9ff28d47a0aaf8/

1.0 NEW PROGRAMS: N/A

2.0 PROGRAM CLOSURES:

2.1 Honours Geography and Environmental Studies

See attached memo from Dr. Jeremiah Hurley, Dean of Social Sciences and Dr. Maureen McDonald, Dean of Science.

3.0 MAJOR REVISIONS:

3.1 ~~Human Geography~~ Environment & Society Subfields (Applicable to all ~~Geography~~ Environment & Society programs)

~~Human Geography~~ Environment & Society programs at McMaster are interdisciplinary in nature, drawing from Human Geography, Environmental Studies, Geographic Information Science, and Urban Studies. Environment & Society courses reflect this interdisciplinarity and encompass five major subfields or themes: Economic Development, Environment and Sustainability, Geographic Information Science (GIS) & Spatial Analysis, Health & Population, and Urban Geography & Planning.~~encompasses five major subfields or themes: Economic Geography, Environmental Issues & Policy, Geographic Information Systems (GIS) & Spatial Analysis, Health & Population, and Urban Geography & Planning.~~ It should be noted that each subfield has its own sequence of courses and prerequisites (See the *Course Listings* section of this Calendar). Students can elect to take some or all of the upper- level courses from different subfields.

- **Economic Development:** ~~GEOG~~ ENVSOCTY 2LE3, ~~GEOG~~ ENVSOCTY 3LT3, ~~GEOG~~ ENVSOCTY 4LE3, ~~GEOG~~ ENVSOCTY 4LP3, ~~GEOG~~ ENVSOCTY 4LW3
- **Environment and Sustainability:** ~~GEOG~~ ENVSOCTY 2EI3, ~~GEOG~~ ENVSOCTY 2EK3, ~~GEOG~~ ENVSOCTY 3EC3, ~~GEOG~~ ENVSOCTY 3EE3, ~~GEOG~~ ENVSOCTY 3EG3, ~~GEOG~~ ENVSOCTY 3ER3, ~~GEOG~~ ENVSOCTY 4EA3, ~~GEOG~~ ENVSOCTY 4ET3, ~~GEOG~~ ENVSOCTY 4HH3

- **Geographic Information Science (GIS) & Spatial Analysis:** ~~GEOG~~ ENVSOCTY 2GI3, ~~GEOG~~ ENVSOCTY 3GI3, ~~GEOG~~ ENVSOCTY 3GV3, ~~GEOG~~ ENVSOCTY 3SR3, ~~GEOG~~ ENVSOCTY 4GA3, ~~GEOG~~ ENVSOCTY 4GS3, ~~GEOG~~ ENVSOCTY 4GT3
- **Health & Population:** ~~GEOG~~ ENVSOCTY 2HI3, ~~GEOG~~ ENVSOCTY 3HP3, ~~GEOG~~ ENVSOCTY 4HD3, ~~GEOG~~ ENVSOCTY 4HH3
- **Urban Geography & Planning:** ~~GEOG~~ ENVSOCTY 2UI3, ~~GEOG~~ ENVSOCTY 3UP3, ~~GEOG~~ ENVSOCTY 3UR3, ~~GEOG~~ ENVSOCTY 3UW3, ~~GEOG~~ ENVSOCTY 4UD3, ~~GEOG~~ ENVSOCTY 4UH3, ~~GEOG~~ ENVSOCTY 4US3

Other Courses

Courses not distinguished by subfield include core courses such as research methods, statistics, field courses, internship opportunities and capstone experiences, as well as a broad suite of regional and topical ~~geography~~ courses.

- **Core (Research Methods, Field Courses, Internships, and Capstone):** ~~GEOG~~ ENVSOCTY 3MA3, ~~GEOG~~ ENVSOCTY 3MB3, GEOG 3ME3, ENVIRSC 3ME3, ~~GEOG~~ ENVSOCTY 3MF3, ~~GEOG~~ ENVSOCTY 3MI3, ~~GEOG~~ ENVSOCTY 4MF3, ~~GEOG~~ ENVSOCTY 4MS3, ~~GEOG~~ ENVSOCTY 4MT6 A/B
- **Regional Geography:** ~~GEOG~~ ENVSOCTY 2OC3, ~~GEOG~~ ENVSOCTY 2RC3, ~~GEOG~~ ENVSOCTY 2RU3, ~~GEOG~~ ENVSOCTY 2RW3, ~~GEOG~~ ENVSOCTY 3RW3
- **Topics in Geography:** ENVSOCTY 2TF3, ~~GEOG~~ ENVSOCTY 2TS3, ~~GEOG~~ ENVSOCTY 3TG3, ~~GEOG~~ ENVSOCTY 4UF3

In planning a program, it is important for students to take note of the prerequisites for certain upper-level courses. Further, not every ~~Geography~~ Environment & Society course listed above is offered every year. For course availability, students are advised to consult "*Class Search*" on Mosaic or contact the School of Geography and Earth Sciences after April 1st for the list of courses that will be offered in the following academic year.

For additional information regarding Environmental Science ~~Geography and Earth Sciences~~, please see the School of Geography and Earth Sciences (Faculty of Science) section of this calendar.

3.2 Combined Honours in Environment & Society ~~Geography~~ and Another Subject (B.A.)

Completion of any Level I program with a Grade Point Average of at least 5.0 including a grade of at least C in one of ENVSOCTY 1HA3, ENVSOCTY 1HB3, GEOG 1HA3 or GEOG 1HB3 and satisfaction of admission requirements for the Honours program in the other B.A. subject (See *Note 1* and *4* below). For continuation in the program, see the section on *Minimum Requirements for Entering and Continuing in a Program Beyond Level I* in the Faculty of Social Sciences Academic Regulations.

Notes

1. Subject to meeting admission requirements, students may combine two subjects and be graduated with a combined Honours B.A. degree. These combinations are available within the Faculty of Social Sciences, with programs in the Faculty of Humanities and with the Arts & Science Program.
2. Not every ~~Geography~~ Environment & Society course listed in this Calendar is offered every year. For course availability, students are advised to consult "*Class Search*" on Mosaic or contact the School of Geography and Earth Sciences after April 1st for the list of courses that will be offered in the following academic year.
3. Students are strongly encouraged to check prerequisites of upper-level ~~Geography~~ Environment & Society courses and to speak with an Undergraduate Advisor in the School of Geography and Earth Sciences regarding course selection.
4. Two of ENVSOCTY 1HA3, ENVSOCTY 1HB3, GEOG 1HA3 and GEOG 1HB3 must be completed by the end of 60 units.
5. Students intending to enrol in ~~GEOG~~ ENVSOCTY 4MT6 A/B must submit an application to the course coordinator by April 1 of the academic year prior to registration. Application forms are available from the School of Geography and Earth Sciences main office after March 1. Students will be informed of their permission to register in ~~GEOG~~ ENVSOCTY 4MT6 A/B on April 15. Registration in this course is conditional upon achieving a GPA of at least 7.5.
6. Students interested in completing courses in the Geographic Information Systems (GIS) & Spatial Analysis subfield are strongly encouraged to complete MATH 1K03 if a Grade 12 Mathematics U was not completed.
7. Students interested in taking courses in Environmental Science and/or Earth Science subfields are strongly encouraged to complete ENVIRSC 1C03 and/or EARTHSC 1G03. ~~No more than 9 units from GEOG 2OC3, GEOG 2RC3, GEOG 2RU3, GEOG 2RW3, GEOG 3RW3 may count towards a student's program; additional units taken from this group of courses will count towards elective units.~~
8. With permission from an Undergraduate Advisor in the School of Geography and Earth Sciences, students enrolled in a combined Honours Environment & Society ~~Geography~~ program may substitute ~~GEOG~~ ENVSOCTY 3MA3 and/or ~~GEOG~~ ENVSOCTY 3MB3 with an equivalent research methods and/or statistics course from the other subject.

Requirements

Students who entered the Combined Honours in Geography and Another Subject (B.A.) program prior to September 2020 should refer to the 2019-2020 Undergraduate Calendar or their personal Advisement Report for program requirements.

120 units total (Levels I to IV), of which 48 units may be Level I

Level I: 30 Units
30 units
from

- the Level I program completed prior to admission to the program (See *Admission* above.)

Levels II to IV: 90 Units
~~3~~ 6 units
from

- ENVSOCTY 2GI3 - Geographic Information Systems
- ENVSOCTY 2EI3 – Environment & Society: Challenges and Solutions
- GEOG 2GI3 ~~– Geographic Information Systems~~

6 units
from
- ENVSOCTY 3MA3 - Research Methods
- ENVSOCTY 3MB3 - Data Analysis
- GEOG 3MA3 - ~~Research Methods in Human Geography~~
- GEOG 3MB3 - ~~Data Analysis~~
  (See *Note 8* above.)

3 units
from
- ENVSOCTY 3MF3 – Urban Field Camp
- ENVIRSC 3ME3 – Environmental Field Camp
- GEOG 3MF3 ~~– Human Geography Field Camp~~

~~12~~ 9 units
- Level II ~~Geography~~ ENVSOCTY, EARTHSC, ENVIRSC, GEOG
  (See *Note 7* above.)

15 units
- Level III or IV ~~Geography~~ ENVSOCTY, EARTHSC, ENVIRSC, GEOG
  (See *Note 7* above.)

36 units
- courses specified for the other subject

0-3 units

from

- ENVSOCTY 1HA3 - Society, Culture and Environment
- ENVSOCTY 1HB3 - Population, Cities and Development
- GEOG 1HA3 - ~~Society, Culture and Environment~~
- GEOG 1HB3 - ~~Population, Cities and Development~~
  (See *Note 4*)

12-15 units
- Electives

3.3 Honours ~~Geography~~ Environment & Society (B.A.)

Completion of any Level I program with a Grade Point Average of at least 5.0 including a grade of at least C in one of ENVSOCTY 1HA3, ENVSOCTY 1HB3, GEOG 1HA3 or GEOG 1HB3 (see *Note 3* below). For continuation in the program, see the section on *Minimum Requirements for Entering and Continuing in a Program Beyond Level I* in the Faculty of Social Sciences Academic Regulations.

Notes

1. Not every ~~Geography~~ Environment & Society course listed in this Calendar is offered every year. Students are advised to consult the Master Timetable published by the

Office of the Registrar or contact the School of Geography and Earth Sciences after April 1st for the list of courses that will be offered in the following academic year.

2. Students are strongly encouraged to check the prerequisites of upper-level ~~Geography~~ Environment & Society courses and to speak with an Undergraduate Advisor in the School of Geography and Earth Sciences regarding course selection.
3. Two of ENVSOCTY 1HA3, ENVSOCTY 1HB3, GEOG 1HA3 and 1HB3 must be completed by the end of 60 units.
4. Students intending to register in ~~GEOG~~ ENVSOCTY 4MT6 A/B must submit an application to the course coordinator by April 1 of the academic year prior to registration. Application forms are available from the School of Geography and Earth Sciences main office after March 1. Students will be informed of their permission to register in ~~GEOG~~ ENVSOCTY 4MT6 A/B on April 15. Registration in this course is conditional upon achieving a GPA of at least 7.5.
5. Students interested in completing courses in the Geographic Information Systems (GIS) & Spatial Analysis subfield are strongly encouraged to complete MATH 1K03 if a Grade 12 Mathematics U was not completed.
6. Students interested in taking courses in Environmental Science and/or Earth Science subfields are strongly encouraged to complete ENVIRSC 1C03 and/or EARTHSC 1G03. ~~No more than 9 units from GEOG 2OC3, GEOG 2RC3, 2RU3, 2RW3, 3RW3 may count towards a student's program; additional units taken from this group of courses will count towards elective units.~~
7. The School of Geography & Earth Sciences encourages students to embrace academic breadth in both knowledge and skills. As such, a minimum of 6 units of the 39 elective units (above Level I) must be taken from outside of the School of Geography & Earth Sciences.

Requirements

Students who entered the Honours Geography (B.A.) program prior to September 2020 should refer to the 2019-2020 Undergraduate Calendar or their personal Advisement Report for program requirements.

120 units total (Levels I to IV), of which 48 units may be Level I

Level I: 30 Units
30 units
from

- the Level I program completed prior to admission to the program (See *Admission* above.)

Level II: 30 Units
~~3~~ 6 units
from

- ENVSOCTY 2GI3 - Geographic Information Systems
- ENVSOCTY 2EI3 – Environment & Society: Challenges and Solutions
- GEOG 2GI3 - ~~Geographic Information Systems~~

~~15~~ 12 units

- Level II ~~Geography~~ ENVSOCTY, EARTHSC, ENVIRSC, GEOG (See *Note 6* above.)

0-3 units

from

- ENVSOCTY 1HA3 - Society, Culture and Environment
- ENVSOCTY 1HB3 - Population, Cities and Development
- GEOG 1HA3 - ~~Society, Culture and Environment~~
- GEOG 1HB3 - ~~Population, Cities and Development~~

(See *Note 3*)

9-12 units

- Electives

(See *Note 7* above.)

Levels III: 30 Units

~~9~~ 6 units

from

- ENVSOCTY 3MA3 – Research Methods
- ENVSOCTY 3MB3 - Data Analysis
- GEOG 3MA3 - ~~Research Methods in Human Geography~~
- GEOG 3MB3 - ~~Data Analysis~~
- ~~GEOG 3MF3 - Human Geography Field Camp~~

3 units

from

- ENVSOCTY 3MF3 – Urban Field Camp
- ENVIRSC 3ME3 – Environmental Field Camp

12 units

- Level III ~~Geography~~ ENVSOCTY, EARTHSC, ENVIRSC, GEOG

(See *Note 6* above.)

9 units

- Electives

(See note 7 above.)

Level IV: 30 Units

12 units

- Level IV ~~Geography~~ ENVSOCTY, EARTHSC, ENVIRSC, GEOG

18 units

- Electives

(See *Note 7* above.)

3.4 ~~Geography~~ Environment & Society (B.A.)

Completion of any Level I program with a Grade Point Average of at least 3.5 including a grade of C- 4.0 in one of ENVSOCTY 1HA3, ENVSOCTY 1HB3, GEOG 1HA3 or GEOG 1HB3. (See *Note 3* below.)

Notes

1. Not every ~~Geography~~ Environment & Society course listed in this Calendar is offered every year. For course availability students are advised to consult "*Class Search*" on Mosaic or contact the School of Geography and Earth Sciences after April 1st for the list of courses that will be offered in the following academic year.

2. Students are strongly encouraged to check prerequisites of upper-level ~~Geography~~ Environment & Society courses and to speak with an Undergraduate Academic Advisor in the School of Geography and Earth Sciences regarding course selection.
3. Two of ENVSOCTY 1HA3, ENVSOCTY 1HB3, GEOG 1HA3 and 1HB3 must be completed by the end of 60 units.
4. Students interested in completing courses in the Geographic Information Systems (GIS) & Spatial Analysis subfield are strongly encouraged to complete MATH 1K03 if a Grade 12 Mathematics U was not completed.
~~5.~~ Students interested in taking courses in Environmental Science and/or Earth Science subfields are strongly encouraged to complete ENVIRSC 1C03 and/or EARTHSC 1G03. ~~No more than 9 units from GEOG 2OC3, GEOG 2RC3, 2RU3, 2RW3, 3RW3 may count towards a student's program; additional units taken form this group of courses will count towards elective units.~~
6. The School of Geography & Earth Sciences encourages students to embrace academic breadth in both knowledge and skills. As such, a minimum of 6 units of the 36 elective units (above Level I) must be taken from outside of the School of Geography & Earth Sciences.

Requirements

Students who entered the Geography (B.A.) program prior to September 2020 should refer to the 2019-2020 Undergraduate Calendar or their personal Advisement Report for program requirements.

90 units total (Levels I to III), of which 42 units may be Level I

Level 1: 30 Units

30 units

from

- the Level I program completed prior to admission to the program.
  (See *Admission* above.)

Level II and III: 60 Units

12 units

- Level II ~~Geography~~ ENVSOCTY, EARTHSC, ENVIRSC, GEOG
  (See *Note 5* above.)

12 units

- Level III or IV ~~Geography~~ ENVSOCTY, EARTHSC, ENVIRSC, GEOG
  (See *Note 5* above.)

0-3 units

from

- ENVSOCTY 1HA3 - Society, Culture and Environment
- ENVSOCTY1HB3 - Population, Cities and Development
- GEOG 1HA3 - ~~Society, Culture and Environment~~
- GEOG 1HB3 - ~~Population, Cities and Development~~
  (See *Note 3*)

33-36 units

- Electives
  (See *Note 6* above.)

Justification: *The changes presented in 3.1-3.4 are the outcome of a review of the undergraduate programs in the School of Geography and Earth Sciences conducted in 2018-19. Over the course of the 2018-19 academic year, we conducted a comprehensive review of our undergraduate BA and BSc programs. This review gathered information from the following sources: 1) meetings with Assistant Deans and Academic Advisors in Science and Social Sciences; 2) focus groups with current students in BA and BSc program; 3) online survey of current Level III students asking about program choice; 4) analysis of program and course enrolment data; and informal conversations with both recent, and more distant, alumni.*

From the review we learned: 1) students in focus groups and online surveys are most interested in environmental issues, expressing both academic interest and personal concern with current environment problems; 2) reflecting these sentiments, interest and enrolment in our standalone Human Geography program has declined steadily in recent years while the Environmental Studies program has grown. In part, this stems from a systematic erosion of geography within the high school curriculum, 3) students value flexible programs that offer multiple pathways to degree completion; and 4) students want to see meaningful connections between subject matter and potential careers.

On the basis of the review, we are changing the name of our existing Honours and Combined Honours programs in Geography to Honours Environment & Society, while discontinuing the standalone Honours Geography & Environmental Studies program. The renamed program draws from Environmental Studies, Human Geography, GIS, and Urban Studies to offer a flexible program of study. Reflecting this change (and the forthcoming change to the name of our unit), we are changing our course codes from GEOG to ENVSOCTY.

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November 12, 2019

TO: Associate Vice-President (Faculty)
Chair, Undergraduate Council

FROM: Dr. Maureen McDonald, Dean, Faculty of Science
Dr. Jeremiah Hurley, Dean, Faculty of Social Sciences

SUBJECT: Program Closure/Merger of Honours Geography & Environmental Science and Honours Geography and Environmental Studies

During the 2018-19 academic year, the School of Geography and Earth Science (SGES) undertook a comprehensive review of its undergraduate programs. The SGES program review involved focus groups with program students, an online survey of Level III students asking about program choice, meetings with academic advisors in Science and Social Sciences, and an analysis of SGES program and course enrolment data.

The review found significant overlap between the Honours Environmental Sciences and Honours Geography and Environmental Sciences programs. For this reason, SGES recommended merging these programs into a single Honours Environmental Sciences program (also available as a Coop program).

The review also found significant overlap between the Honours Geography program and the Honours Geography & Environmental Studies program. For this reason, SGES recommended merging these programs into a renamed Honours Environment & Society program. The new name signals the program's central focus on the interrelationship between human societies and the built, social, economic and natural environments they inhabit; and the explicitly interdisciplinary nature of the program, which spans Environmental Studies, Human Geography, Geographic Information Science, and Urban Studies.

For details, see Major Modifications section below.

As per the proposed changes, the Faculty is proposing to do the following:

- Notify students that the existing Honours Geography & Environmental Science program is no longer available and direct Level I students who intended to register in this program to the merged Honours Environmental Science program. Admissions requirements to the merged program will be the same as those required for Honours Geography & Environmental Science. All currently enrolled students will be given the opportunity to complete their program requirements.

- Notify students that the Coop version of the Honours Geography & Environmental Science program will be phased out. Admission will be last available in September 2020. All currently enrolled students will be given the opportunity to complete their program requirements.

- Notify students that the existing Honours Geography & Environmental Studies program is no longer available and direct Level I students who intended to register in this program to the merged Honours Environment and Society program. Admissions requirements to the merged program will be the same as those required for Honours Geography & Environmental Studies. All currently enrolled students will be given the opportunity to complete their program requirements.

- Notify students that the existing Honours Geography program will be renamed Honours Environment and Society. All currently enrolled students will be given the opportunity to graduate with the existing program name, but they can also elect to graduate with the new name.

Students were consulted extensively during the program review process (in focus groups and surveys), and the broader student population has been made aware of these impending changes through email communications from the SGES Associate Director (Undergraduate):

SGES Program Changes

I want to update you on some exciting changes to our undergraduate programs. Before I outline what's changing (and what's not changing), let me be clear that these revisions will not impact to you as current program students, although there are some changes that you can choose to adopt if you wish (see 1.c and 2.a below). If you have specific questions, please feel free to contact Kara Salvador or myself for further information. We'll also be organizing information sessions in the winter term to provide additional guidance for students.

Let me offer some context for the changes. As some of you know, we undertook a review of our undergraduate BA and BSc programs last year. This involved focus groups with students in BA and BSc program, an online survey of Level III students asking about program choice, meetings with academic advisors in Science and Social Sciences, and an analysis of SGES program and course enrolment data. From the review, we learned a number of things:

- *On the BSc side, students and academic advisors felt we had too many programs and the differences between them were not clear. This was particularly the case for our Honours Environmental Sciences and Geography & Environmental Sciences programs.*
- *On the BA side, we noted significant overlaps between our Human Geography and Geography & Environmental Studies programs.*
- *Across all programs, many students in focus groups and online surveys were very interested in environmental issues, expressing both academic interest and personal concern with current environment challenges.*
- *Many students value flexible programs that offer multiple pathways to degree completion (e.g., some BA students take courses on climate science, while many BSc students take urban planning, environmental policy and sustainability courses)*

On the basis of the review, we are making a number of changes that we believe will better showcase the strengths of the school and ensure future growth in enrolments.

1. Science

a. *Our Honours Earth and Environmental Sciences program is not changing.*

b. *We are merging our Honours Environmental Sciences and Geography & Environmental Sciences programs to create a single, flexible program that will allow students to take course from across the school. This program will retain the Honours Environmental Sciences name. As of Fall 2020, there will be no new students admitted to Honours Geography & Environmental Sciences. However, if you're currently in Level II and thinking about the co-op option for Honours Geography and Environmental Science, you will still be able to enroll in co-op for the 2020-21 academic year.*

c. *We are changing the name of Honours Biology and Environmental Science to Biodiversity and Environmental Sciences as of Fall 2020. This reflects a growing focus in ecological and environmental research generally (and in this program specifically) on how diverse organisms are able to adapt to their changing environments at both the community and ecosystem levels. If you are currently in this program you will graduate with the existing name, but you can choose to graduate with the new name if you wish.*

2. Social Sciences

a. *The big change to our BA programs is that we are merging our Honours Geography and Geography & Environmental Studies programs into a single program that will be called Honours Environment and Society. We believe this name captures our central focus on the dynamic interrelationship between human societies and the environments (built, social, economic and natural) they inhabit; and the interdisciplinary nature of our courses, which span Environmental Studies, Human Geography, Geographic Information Science, and Urban Studies. ~~This change will have no impact if you are currently enrolled in one of the existing programs unless you would like to graduate with the new program name~~. Please contact Kara if this is something you're interested in.*

a. *Reflecting the new program name, we are changing our GEOG course codes to ENVSOCTY. This means that when you go to register this summer all of our social science courses in the undergraduate calendar and on Mosaic will be listed under ENVSOCTY. For the most part, the course titles and descriptions will remain the same.*

As faculty members, we are really excited by these changes and firmly believe they will help us to welcome even more students into our programs and courses in the coming years. Again, please contact Kara or myself if you have further questions.

Faculty members within SGES have been made aware of these impeding changes through review process and an associated SGES retreat. The revisions were given unanimous faculty support. More broadly, the

changes were discussed and voted on the Faculty of Science Academic Planning & Policy Committee, and General Faculty. The changes to the Honours Geography and Honours Geography & Environmental Studies BA programs were also discussed and approved by the Faculty of Social Sciences Undergraduate Curriculum Committee.

The above changes are being made in the best interests of students, faculty, and the Faculty of Science.

Faculty of Social Sciences
REPORT TO UNDERGRADUATE COUNCIL
SUMMARY OF CURRICULUM CHANGES FOR 2020-2021

Below is the summary of substantive curriculum changes being proposed by the Faculty of Social Sciences. For complete review of all of the changes, please refer to the November 2019 Faculty of Social Sciences Report to Undergraduate Council for changes to the 2020-2021 Undergraduate Calendar, found on MacDrive at
https://macdrive.mcmaster.ca/f/ff988b9ff28d47a0aaf8/

1. **Faculty of Social Sciences**
   - Housekeeping to Level 1 program course lists to reflect course changes submitted by Departments
   - Revision of course title for SOCSCI 1T03
   - Deletion of one course (SOCSCI 2V03)
   - Housekeeping updates to Faculty of Social Sciences section of the Calendar

2. **Department of Anthropology**
   - Housekeeping updates to Anthropology subfield lists that apply to all Anthropology programs.
   - Addition of 5 new courses (ANTHROP 3BA3, 3KK3, 3LL3, 4FF3, 4SG3)
   - Revisions to 8 existing courses with changes in title, description, antirequisites (ANTHROP 1AB3, 2EE3, 2R03, 3F03, 3GH3, 3HI3, 3P03, 3SS3)
   - Changes in enrolment for 2 courses (ANTHROP 1AA3, 2PA3)
   - Three course deletions (ANTHROP 2B03, 4H03, 4W03)
   - Updated list of Faculty Members

3. **Community Engagement**
   - Revisions to Program Notes
   - Update of course lists for the Minor in Community Engagement
   - Addition of 1 new course (CMTYENGA 3A03)
   - Revisions to 2 existing courses (CMTYENGA 2MC3, 2MD3)

4. **Department of Economics**
   - Revision to the Honours Economics and Mathematics program with the addition of math course choices (MATH 2LA3 and 3LA3) to reflect changes in the Honours Mathematics program as presented by Faculty of Science
   - Revisions to 3 existing courses – changes to prerequisites and/or antirequisites (ECON 2Z03, 2ZZ3, 3G03)
   - Updated list of Faculty Members

5. **School of Geography and Earth Sciences**

- Updates to the Human Geography subfields with new course code changes from GEOG to ENVSOCTY and references to Geography change to Environment & Society.
- Name change in all Honours BA, Combined Honours BA, and BA programs in Geography to "Environment & Society" and resulting housekeeping updates.
- Integration of environmental studies content into the Environment and Society programs.
- Phasing out of Honours Geography and Environmental Studies program
- Course changes throughout the program submissions to reflect that the GEOG course code is being replaced with ENVSOCTY.
- All course changes reported through the Faculty of Science.

6. Institute on Globalization and the Human Condition

- Changes to the Course lists for the Globalization Studies Minor to reflect changes in course submissions from other departments.
- Updated list of Faculty Members

7. Department of Health, Aging & Society

- Addition of HLTHAGE 1ZZ3 to Admission requirements for Combined Honours Health and Society and Another Subject, Health, Aging and Society (B.A.), Honours Aging and Society Specialization in Mental Health and Addiction, Honours Heatlh and Society, Honours Health and Society Specialization in Mental Health and Addiction
- Addition of HLTHAGE 1ZZ3 to Minor in Health, Aging and Society, and Minor in Mental Health, Addiction and Society
- Addition of HLTHAGE 1ZZ3 to program requirements for Combined Honours in Aging and Society and Another Subject and Honours Aging and Society.
- Housekeeping of Course Lists to reflect changes in cross-listed courses (ANTHROP 3Y03)
- Addition of 2 new courses (HLTHAGE 1ZZ3, 3T03)
- Revision to 3 existing course (HLTHAGE 3B03, 3YY3, 4N03)

8. Indigenous Studies Program

- Housekeeping to Course lists to reflect course changes.
- Addition of one new course (INDIGST 4IW3 cross-listed with ENGLISH 4IW3, administered by Faculty of Humanities**)**
- Updated list of Faculty Members

9. School of Labour Studies

- Housekeeping to all programs to reflect new courses and course deletions
- Addition of 6 new courses (LABRST 1D03, 1E03, 3M03, 3P03, 3Q03, 4J03)
- Revisions to 12 courses (LABRST 2A03, 2G03, 2J03, 3C03, 3D03, 3E03, 3K03, 3L03, 4A06, 4C03, 4F03, 4G03)

- Deletion of 6 courses (LABRST 1A03, 1C03, 2C03, 2K03, 3H03, 3J03)
- Updated list of Faculty Members

10. Department of Political Science

- Housekeeping changes to Fields of Study to reflect new courses
- Revisions to Honours Political Science Specialization in Global Citizenship to clarify the 3 options for completion of the 18 units requirement. Course Lists were added for this purpose.
- Revisions to Notes in all Honours programs to clarify restrictions on Level 4 courses
- Revisions to Notes in Honour Political Science Specialization in Public Law and Judicial Studies clarifying restrictions for Minor in Justice, Law and Order
- Revisions to Notes for Minor in Justice, Law and Order clarifying admission restrictions
- Addition of 6 new courses (POLSCI 2EM3, 2LW3, 3IP3, 3PG3, 4RT3, 4UP3)
- Revisions to 4 existing courses (POLSCI 4RR3, 3JR3, 3GC3, 3LA3)
- Updated list of Faculty Members

11. Psychology, Neuroscience and Behaviour

- For all PNB programs, a previously required Research Methods course (PNB 3RM3) has been replaced with three units selected from a list of lab courses including an experiential research course. Research Methods has been incorporated into our two statistics courses (PNB 2XE3, 3XE3).
- For the Music Cognition Specialization, the Music Department has suggested removing the requirement of MUSIC 1CA3 and instead, it will only be needed by students not meeting a set of prerequisites for MUSIC 1CB3.
- Housekeeping to Course Lists and Program Notes
- All course changes reported through the Faculty of Science.

12. Department of Religious Studies

- Addition of new Minor in Asian Studies
- Removal of the Areas of Study – applicable to all Society, Culture & Religion programs since the Department no longer organizes their undergraduate program based on these lists.
- Phasing out Minor in Japanese Studies
- Course code updates throughout the submission to reflect that the Religious Studies - RELIGST course code is being replaced with Society, Culture & Religion - SCAR
- Reintroduction of all existing courses formerly with subject code RELIGST with new subject code of SCAR
- Addition of 10 brand new courses (SCAR 1SC3, 2BA3, 2CH3, 2SA3, 2SG3, 3BE3, 3EP3, 3JF3, 3RL3, 3US3)

- Revisions to 9 existing courses to update prerequisites and antirequisites (ARABIC 2AA3, 2AR3, 3GH3, HEBREW 2A03, 2B03, 3A03, 3B03, SANSKRIT 3A06A/B, 4B06 A/B)
- Deletion of 2 cross-listings with the following (ARTSSCI 3L03, HISTORY 3GH3)
- Deletion of 22 existing courses as part of curriculum overhaul in order to provide more coherent degree programs (RELIGST 2BF3, 2DD3, 2DS3, 2I03, 2JP3, 2KK3, 2TH3, 3B03, 3CP3, 3FA3, 3JB3, 3K03, 3KK3, 3L03, 3M03, 3RH3, 4H03, 4I03, 4N03, 4P03, 4RP3, 4S03)
- Deletion of all courses with subject code RELIGST (76)
- Updated list of Faculty Members

13. School of Social Work

- Revision of Course List to reflect course changes from other Departments
- Addition of INDIGST 2M03 to Progression Within Program notes in all programs
- Application Deadline date change to February 1
- Housekeeping changes to Notes
- Updated list of Faculty

14. Social Psychology Program

- Update course lists to reflect new course additions
- Addition of 3 new courses (SOCPSY 2C03, 3L03, 3RR3)
- Updated list of Faculty Members

15. Department of Sociology

- Addition of 3 new Minors: Diversity and Equity; Gender, Sexualities and Families, Immigration; and Race Relations and Indigenous –Settler Relations
- Addition of Fields of Studies that apply to all Sociology programs: Diversity and Equity, Gender, Sexualities and Families, Immigration, Race Relations and Indigenous-Settler Relations
- Revisions to all programs removing the restrictions on the allowable units of Sociology courses
- Addition of 5 new courses (SOCIOL 3NR3, 3QQ3, 3RR3, 3YY3, 3SS3)
- Revisions to 31 existing courses to remove restrictive prerequisites (SOCIOL 3B03, 3CC3, 3U03, 3W03, 4A03, 4AA3, 4BB3, 4DD3, 4E03, 4EE3, 4FF3, 4G03, 4GG3, 4J03, 4K03, 4KK3, 4LL3, 4M03, 4MM3, 4MM6 A/B, 4N03, 4QQ3, 4R03, 4RR3, 4SS3, 4TT3, 4U03, 4UU3, 4V03, 4W03, 4XX3)
- Deletion of 1 course (SOCIOL 4HH3)
- Updated list of Faculty Members

16. Interdisciplinary Minors

- Updates to all course lists

Attachment VIII

Office of the Registrar

Undergraduate Curriculum Report

to

Undergraduate Council

for the 2020-2021 Undergraduate Calendar

Revisions for the following sections:

- Glossary
- Admission Requirements
- General Academic Regulations

November 2019

1.0 Glossary

1.1 Intersession

The Intersession is a time period where students may explore novel interdisciplinary and experiential opportunities that may not be available during the Fall or Winter terms. The Intersession begins in the first week of May (concurrent with the Spring Session) and last for a 4-week period. See the *Sessional Dates* and INSPIRE course listings for more information.

Justification:

To provide students with a description of the upcoming Intersession project.

2.0 Admission Requirements

2.1 American High School Curriculum

~~Applicants from the continental United States of America or international schools offering the American high school curriculum must satisfactorily complete a secondary school diploma with a minimum overall average of at least 80% in the Grade 12 academic program of an accredited American high school/International American Curriculum high school and must present all prerequisite courses for their chosen program. Admission is competitive and many programs will require grades/averages well above the minimum 80% for admission consideration. For complete requirements for American Curriculum applicants, please visit our website: https://future.mcmaster.ca/admission/requirements/.~~

~~McMaster programs that have specific math and/or science prerequisites require Advanced Placement subjects only for those requirements. Non A.P. courses will not be deemed sufficient to meet the program prerequisites in the math and science subjects for students coming from American style curriculum schools. If applicants believe that their schools' locally developed curriculum in math and science subjects is equivalent to all of the topics covered in A.P. level courses, then the applicant must provide the Office of the Registrar, Admissions with a detailed and comprehensive syllabus supplied by their school for each course that they are seeking equivalency to A.P. level courses.~~

~~American Curriculum applicants must also present results from the Critical Reading and Mathematics components of SAT I with a minimum combined score of 1200 (minimum 580 Critical Reading, 520 Mathematics) OR a minimum combined score for the Redesigned SAT result of at least 1200 as a combined score with a minimum of 600 in each section OR from ACT with a minimum composite score of 27.~~

American Curriculum High School applications are reviewed for admission based on McMaster's own calculation of the admission average. McMaster's calculations of the admission averages may vary from those used at other institutions.

Applicants from an American high school curriculum must satisfactorily complete a secondary school diploma with a minimum overall average of at least 80% in a Grade 12 academic program from an accredited American high school/International American Curriculum high school AND must present all prerequisite courses for their chosen program(s).

Admission is competitive and many programs will require grades/averages well above the minimum 80% for admission consideration. For complete requirements for American Curriculum applicants, please visit our website: https://future.mcmaster.ca/admission/requirements/

General Requirements:

High school Diploma from an accredited school with prerequisite subjects including English completed at the AP or Senior Grade 12 academic level.

Students may be required to satisfy our English language proficiency requirements: https://future.mcmaster.ca/admission/language/

McMaster will consider a minimum of five Senior Grade 12 academic courses including all prerequisite subjects for the applicant's selected program(s). **Students applying to programs in Engineering, Science, Health Sciences, Economics and Business programming that have mandatory Science and/or Mathematics prerequisites should note the following requirements for each subject:**

Biology – 2 years/ 2 full credits (Junior and Senior) or AP Biology (or equivalent)

Physics - 2 years/2 full credits (Junior and Senior) or AP Physics (or equivalent)

Chemistry - 2 years/ 2 full credits (Junior and Senior) or AP Chemistry (or equivalent)

Calculus – 4 years of high school Mathematics including Pre-Calculus and AP Calculus or equivalent.

McMaster University will accept the results of an equivalent **AP challenge examination** in lieu of ONE of the science/math prerequisites for your chosen subject if your school does not offer the subject. A minimum score of 4 or 5 will be required for AP challenge exams.

Students who are presenting AP courses that are prerequisite to their selected program(s) will be required to complete and submit the AP Examination(s) via the College Board and minimum grades of at least 3 will be required from the examinations to meet admission conditions.
SAT II Subject Test with a score of at least 670 or higher may be considered on a case-by-case basis in lieu of ONE of the science/math prerequisites for your chosen program.
For claimed equivalencies, detailed syllabi including all topics covered, total hours and textbooks used are required for our evaluation and should be submitted alongside official high school transcripts/reports.
Students in continental US high schools must supply results from either the **SAT or ACT** testing. The SAT Essay and the ACT Writing Test are optional for McMaster. All other applicants in American Style Curriculum schools outside of the US are also encouraged to submit the results of SAT/ACT tests as admission to all of McMaster's undergraduate programs is highly competitive and preference may be given to applicants presenting excellent scores.
Students in **China** and who are completing an International hybrid curriculum (National curriculum concurrent with an AP/American style curriculum are required to supply results from either SAT or ACT testing:
SAT – minimum overall score of 1200 or greater (Reading/Math sections only) with minimum scores of 600 in each section. (Institutional Code for SAT/AP 0936)
ACT – minimum composite score of 27 or greater (Institutional Code 5326)
High scores in external tests such as SAT, SATII Subject Tests, ACT and AP may help your applications to be more competitive for your selected program.

Justification:

To clarify/provide more detail about admission requirements for students coming from an American high school curriculum.

3.0 General Academic Regulations

3.1 Academic Commitments

~~Students should expect to have academic commitments (e.g., classes, labs, tests, examinations, etc.) Monday through Saturday, normally 8:30 a.m. to 10:00 p.m., but not on Sunday or statutory holidays, as outlined in the *Sessional Dates*.~~ Students should expect to have academic commitments for instructional activities (e.g., lectures, labs, tutorials, etc.) Monday through Saturday, normally 8:30 a.m. to 10:30 p.m., but not on statutory holidays, as outlined in the *Sessional Dates*. Also, students may be required to write tests or examinations Monday through Sunday. Students are responsible for meeting all course requirements, including final examinations, as scheduled. Students who require accommodations to meet religious, Indigenous or spiritual observances must make their requests within 10 working days from the beginning of the start of term to their Faculty/Program Office.

Justification:

Provides the option for an extended time period to schedule tests and exams only when deemed necessary and/or to prevent the term from running too late in December.

3.2 Student Responsibilities

Academic
McMaster University provides many resources to help students achieve their academic goals, including the Undergraduate Calendar, program advisement reports and academic advisors. The University endeavours to enable students to enrol in required courses so that their program admission requirements and course requisites can be met in a timely manner. The University reserves the right to change a student's enrolment in classes should the need occur (e.g. low enrolment, urgent timetable changes, etc.).
Students must assume certain responsibilities. They include:

- meeting admission requirements and application deadlines for their intended program(s) of study
- selecting and completing courses in an order that meets requisite and program requirements
- becoming familiar with and respecting University Sessional Dates, the General Academic Regulations, their Faculty/Program-specific regulations, and the Regulations for Aid and Awards as found in the appropriate sections of this Calendar.

Students who do not follow these guidelines may experience academic consequences such as cancellation of course enrolment, completion of courses that are not counted toward their degree, or delayed graduation.
In addition to the responsibilities listed above, students are expected to:

- know and follow the Senate policies

- keep their student account in good standing, paying all charges on time
- be aware that changes to course load and program may affect eligibility for government and University aid and awards (e.g. OSAP, work programs, bursaries, scholarships, etc.)
- consult with Student Accessibility Services in a timely manner to make disability related accommodation requests under the *Academic Accommodation of Students with Disabilities* policy.

3.3 Academic Obligations

Religious, Indigenous or Spiritual Observances
Students who require accommodations to meet religious, indigenous or spiritual observances are expected to read the *Policy on Academic Accommodation for Religious, Indigenous and Spiritual Observances (“RISO policy”)* and must make their requests within 10 working days from the beginning of the start of term to their Faculty/Program Office.
~~Students are expected to submit the RISO form to their Faculty, electronically or in person, normally within ten working days from the beginning of each term in which they are anticipating a need for Accommodation.~~

Academic Accommodations: Permanent Disability, Temporary Disability, and Retroactive Accommodation
Students seeking an accommodation related to a permanent or temporary disability, or inquiring about a retroactive accommodation, are expected to read the *Academic Accommodation of Students with Disabilities* policy. Important excerpts from the current policy include:
- students are not to seek accommodation directly from their professors, instructors, and/or teaching assistants. Accommodation requests should be directed to Student Accessibility Services or the Faculty Office;
- students are not required to reveal their private medical information, such as the cause of the disability, diagnosis, symptoms or treatment (unless these clearly relate to the accommodation being sought) to register with Student Accessibility Services, or receive accommodations or supports;
- students may request interim accommodations for disabilities (this includes mental health disabilities) pending receipt of medical documentation;
- both Temporary and Permanent disabilities will be accommodated
  - **Permanent Disability** is where a functional limitation will occur for *more than one academic term or* as defined by a regulated health professional.
  - **Temporary Disability** may be a short-term injury or illness (such as mononucleosis, a broken limb or concussion) or an episodic condition (e.g. mental illness) where a functional limitation *generally occurs within one academic term or less* or as defined by a regulated health professional.
- requests for accommodation should be submitted in a prompt and timely manner. Requests made after a deadline has passed may be considered Retroactive Accommodations. A **Retroactive Accommodation** may be for either a Permanent or Temporary Disability when the request is made **after-the-fact** (e.g. after a course has been completed), as the result of the discovery or diagnosis of an existing disability of which the student was previously unaware.

Justification:
Provides appropriate information related to academic obligations for students, faculty and staff with specific focus on amended/new policies related to academic accommodations.

Due Date Restrictions:
Academic assessments, due dates and evaluations are described in course outlines except where other University policies, e.g., Student Accessibility Services (SAS) accommodations, deferred exams, etc. When students are aware of their progress early in a course they can make informed decisions. Restrictions are placed on academic obligations to enable students to plan their work schedules.
1. Due dates for all term work must be on or before the final day of classes for courses with a final examination. For courses with no final examination, academic assessments can be due on or before the final date of examinations.
2. Tests, quizzes, exams and take-home exams worth more than 10% cannot be assigned or due during the last 5 days of classes plus the day(s) between the end of classes and the beginning of examinations. Assignments worth more than 10% that are assigned at the beginning of the course and noted on the course outline can be due during this time period, provided students are given sufficient additional detail to enable them to work on the assignment in advance of the due date.

3. Academic assessments cannot be due during the December holiday break or the fall and winter mid-term recesses, with the exception of deferred exams scheduled by the Office of the Registrar.

Maximum Value of Academic Assessment

1. Student learning in undergraduate courses should be assessed on more than one occasion. To that end, no **single** academic obligation (e.g., essay, test, examination, etc.) should have a value of more than 75% of the final grade without approval from the Department Chair or Associate Dean's Office. Clinical, placement, thesis and capstone courses are exempt.

2. For students requiring relief from an academic obligation, it is at the discretion of the instructor to determine the nature of the relief. In cases such as this, students can be offered the choice of another assessment or the option of writing a final examination which may be worth more than 75% of the course grade.

Justification:

Provides clarity.

3.4 McMaster University Statement on the Collection of Personal Information and the Protection of Privacy

McMaster University collects and retains personal information of students, alumni and other parties, including but not limited to faculty, staff, visiting academics and private citizens using services provided by McMaster University, under the authority of The McMaster University Act, 1976. This information is used for the academic, administrative, employment-related, safety and security, financial and statistical purposes of the University, including for the administration of admissions, registration, awards and scholarships, convocation, alumni relations and other fundamental activities related to being a member of the University community, a user of services provided by McMaster or an attendee of, or applicant to, a public post-secondary institution in the Province of Ontario. The information will be used, among other things, to admit, register and graduate students, record academic achievement, issue library cards and, where applicable, local transit passes, event tickets etc., to provide access to information systems and to operate academic, financial, athletic, recreational, residence, alumni and other University programs. Additionally, this information may be shared with other institutions of higher education in order to administer collaborative programs. Information on admissions, registration and academic achievement may also be disclosed and used for statistical and research purposes by the University, other post-secondary educational institutions and the federal and provincial governments. The names of alumni, their Faculty and program, award information, degree(s) awarded and date of graduation is considered public information and may be published by McMaster University. In addition, student photographs posted by the University in the form of individual pictures or class pictures may be publicly displayed. Aside from the foregoing, the information you provide and any other information placed in a student record, or in a personnel record, will be protected and used in compliance with Ontario's Freedom of Information and Protection of Privacy Act (RSO 1990) and will be disclosed only in accordance with this Act. If you have any questions about the collection and use of this information please contact the University Registrar, University Hall, Room 209, Student Records, Gilmour Hall, Room 108, or the University Secretary, Gilmour Hall, Room 210, McMaster University. McMaster University may also collect personal information from other relevant sources including, without limitation, the Ontario Universities' Application Centre, secondary schools, colleges, universities and other institutions previously attended, including third-party services and test score providers where the items collected form a part of the application or admission process to a university program. Furthermore, McMaster is required to disclose personal information such as Ontario Education Numbers, student characteristics and educational outcomes to the Ministry of Training, Colleges and Universities (the "MTCU"). The Ministry collects this data for purposes such as planning, allocating and administering public funding to colleges, universities and other post-secondary educational and training institutions and to conduct research and analysis, including longitudinal studies, and statistical activities conducted by or on behalf of the Ministry for purposes that relate to post-secondary education and training. Any information collected by McMaster for the purposes of self-identification as a member of a specific group (i.e. First Generation, First Nations, etc.) may be subject to disclosure to the MTCU by McMaster and collected by the MTCU pursuant to its statutory authority. Further information on how the MTCU uses personal information is available on the ministry's website (http://www.tcu.gov.on.ca/). In addition to collecting personal information for the purposes noted above, McMaster University collects specific and limited personal information on behalf of the McMaster Student Union, Recognized Student Groups, the McMaster Association of Part-time Students and/or the McMaster Graduate Students Association. These constituent student groups use personal information for the purpose of membership, administration, elections, annual general meetings, health plans and other matters related to membership benefits only. Please contact the relevant Student Union or Association

office if you have questions about this collection, use and disclosure of your personal information and their respective privacy policies.
June 2019
~~McMaster University collects and retains personal information of students, alumni and other parties, including but not limited to faculty, staff, visiting academics and private citizens using services provided by McMaster University, under the authority of the *McMaster University Act, 1976*. This information is used for the academic, administrative, employment related, safety and security, financial and statistical purposes of the University, including for the administration of admissions, registration, awards and scholarships, convocation, alumni relations and other fundamental activities related to being a member of the University community, a user of services provided by McMaster or an attendee of, or applicant to, a public post-secondary institution in the Province of Ontario. The information will be used, among other things, to admit, register and graduate students, record academic achievement, issue library cards and, where applicable, local transit passes, to provide access to information systems and to operate academic, financial, athletic, recreational, residence, alumni and other University programs. Additionally, this information may be shared with other institutions of higher education in order to administer collaborative programs. Information on admissions, registration and academic achievement may also be disclosed and used for statistical and research purposes by the University, other post-secondary educational institutions and the federal and provincial governments. The names of alumni, their Faculty and program, award information, degree(s) awarded and date of graduation is considered public information and may be published by McMaster University. In addition, student photographs posted by the University in the form of individual pictures or class pictures may be publicly displayed. Aside from the foregoing, the information you provide and any other information placed in a student record, or in a personnel record, will be protected and used in compliance with Ontario's *Freedom of Information and Protection of Privacy Act (RSO 1990)* and will be disclosed only in accordance with this Act. If you have any questions about the collection and use of this information please contact the University Registrar, University Hall, Room 209, Student Records, Gilmour Hall, Room 108, or the University Secretary, Gilmour Hall, Room 210, McMaster University.~~

~~McMaster University may also collect personal information from other relevant sources including, without limitation, the Ontario Universities' Application Centre, secondary schools, colleges, universities and other institutions previously attended, including third-party services and test score providers where the items collected form a part of the application or admission process to a university program.~~

~~Furthermore, McMaster is required to disclose personal information such as Ontario Education Numbers, student characteristics and educational outcomes to the Ministry of Advanced Education and Skills Development (the "MAESD"; formerly known as the Ministry of Training, Colleges, and Universities). The Ministry collects this data for purposes such as planning, allocating and administering public funding to colleges, universities and other post-secondary educational and training institutions and to conduct research and analysis, including longitudinal studies, and statistical activities conducted by or on behalf of the Ministry for purposes that relate to post-secondary education and training. Any information collected by McMaster for the purposes of self-identification as a member of a specific group (i.e. First Generation, First Nations, etc.) may be subject to disclosure to the MAESD by McMaster and collected by the MAESD pursuant to its statutory authority. Further information on how the MAESD uses personal information is available on the ministry's website (https://www.ontario.ca/page/ministry-advanced-education-and-skills-development).~~

~~In addition to collecting personal information for the purposes noted above, McMaster University collects specific and limited personal information on behalf of the McMaster Student Union, the McMaster Association of Part-time Students and/or the McMaster Graduate Students Association. These constituent student groups use personal information for the purpose of membership, administration, elections, annual general meetings, health plans and other related matters only. Please contact the relevant Student Union or Association office if you have questions about this collection, use and disclosure of your personal information and their respective privacy policies.~~

~~*September 2015*~~

Justification:
Updated by Michelle Bennett.

3.5 Second Bachelor's Degree Programs

Requirements for Second Bachelor's Degree Programs

- Honours Degree following a Three-Level Degree in the Same Subject: For consideration into an Honours B.A., Honours B.A.Sc. or Honours B.Sc. degree program following a three-level degree in the same subject, a Cumulative GPA of at least 5.0 in the first degree program is required. For consideration into all other eligible degree programs, a Cumulative GPA of at least 6.0 in the first degree program is required. If admitted, at least 30 units beyond the first degree, including all program requirements, must be completed.
- B.A. or B.Sc. in Another Subject: For consideration, students must meet the admission requirements for the program. If admitted, at least 30 units beyond the first degree, including all program requirements, must be completed. Students are not eligible for a second B.A. or B.Sc. degree in a program in which they have been awarded a minor, however, they may apply for an honours second degree in that subject.
- Honours B.A., Honours B.A.Sc., Honours B.Sc. or Honours B.H.Sc. in Another Subject: For consideration, students must meet the admission requirements for the program and have a Cumulative GPA of at least 5.0. If admitted, at least 60 units beyond the first degree, including all program requirements, must be completed.
- B.M.R.Sc.: For consideration, students must meet the admissions requirements for the program. If admitted, students will be required to complete a minimum of 24 units during Level I of the program. Some of these units may be extra to the degree requirements.
- B. Eng., B.Tech., and B.A.Sc.: For consideration, students must meet the admission requirements for the program. If admitted, students must complete at least 60 units beyond the first degree including all program requirements.

Justification:

Need to include a note indicating that the Honours B.A.Sc. may be completed as a second undergraduate degree.

3.6 Petitions for Special Consideration

The University wishes to assist students with legitimate difficulties. It also has the responsibility to ensure that degree, program and course requirements are met in a manner that is equitable to all students. Students may submit, in a prompt and timely manner, a Petition for Special Consideration to the Faculty/Program Office in those instances where a student acknowledges that the rules and regulations of the University have been applied fairly, but is requesting that an exception to the regulations be made because of special circumstances. Petitions should be submitted in a prompt and timely manner for the relevant term, but no later than July 31 immediately following the Fall/Winter Term or November 15 immediately following the Spring/Summer Term.
Two forms are available from your Faculty/Program Office:

Petition for Special Consideration (Form A):
The *Petition for Special Consideration (Form A)* is submitted for a variety of issues, including, when a student wishes to have a leave of absence or seeks to depart from University requirements based on compelling medical or personal reasons; or a student believes that an adverse ruling or decision about their academic performance, such as failing a course, or being required to withdraw from a program for failure to meet program requirements, should be waived because of compelling medical or personal circumstances

Petition for Special Consideration: Request for Deferred Examination (Form B):
The *Petition for Special Consideration: Request for Deferred Examination (Form B)* is used when a student misses an examination because of compelling medical or personal reasons.

1. Once a student has completed an examination, no special consideration will be granted.
2. A student who misses an examination because of compelling medical or personal reasons may submit a Petition for Special Consideration: Request for Deferred Examination (Form B) to the Faculty/Program Office, normally within five working days of the missed examination.
3. If the reason is medical, the approved McMaster University Medical Form must be used. The student must be seen by a doctor at the earliest possible date, normally on or before the date of the missed exam and the doctor must verify the duration of the illness. Relief will not be available for minor

illnesses. If the reason is non-medical, appropriate documentation with verifiable origin covering the relevant dates must be submitted, normally within five working days.

4. In deciding whether or not to grant a petition, the adequacy of the supporting documentation, including the timing in relation to the due date of the missed work and the degree of the student's incapacitation, will be taken into account.

5. It is the student's responsibility to check Mosaic Student Center > Deferred Exam Approvals or with the Faculty/Program Office for a decision on the request for a deferred examination. If the deferred examination is granted, the student will be informed officially by means of the notation DEF which will appear against the relevant course on the student's academic record and via Mosaic > Student Center > View My Grades.

6. Deferred examinations are written during the next official University deferred examination period. Default of the deferred examination will result in a fail for that examination.

7. Students who have been granted more than one deferred examination may be required by their Faculty/Program Office to reduce their course load during the term in which the deferred examinations are being written. The decision on a reduced load will be made and communicated with the decision on the request for deferred examinations.

8. At the discretion of the Faculty/Program Office, students who have been granted one or more deferred examinations, may not be allowed to enrol in a subsequent term until all deferred examinations have been completed and the Academic Standing calculated. Students will be notified of this decision by their Faculty/Program Office.

9. Students who will be living more than 160 kilometres from Hamilton during the deferred examination period and wish to write their approved deferred examination at an institution other than McMaster must submit a Request to Write Deferred Examination Off-campus Form at least 15 working days prior to the deferred examination period. Students are responsible for making arrangements for a presider to conduct the deferred examination at an outside institution and for paying any fees such as invigilation and return courier.

10. The authority to grant any petitions lies with the Faculty/Program Office and is discretionary. It is imperative that students make every effort to meet the originally-scheduled course requirements and it is a student's responsibility to write examinations as scheduled.

Decisions made on Petitions for Special Consideration are final. In accordance with the *Student Appeal Procedures*, decisions made on Petitions for Special Consideration cannot be appealed to the Senate Board for Student Appeals. However, should students believe that a decision may be a violation of ~~violates~~ their human rights, they may wish to ~~consult~~ contact the Equity and Inclusion Office to identify appropriate avenues of recourse as per the McMaster's *Policy on Discrimination and Harassment: Prevention & Response* ~~and visit one of the four intake offices (Equity and Inclusion Office, Student Support & Case Management, Employee/Labour Relations, Professionalism Office in Faculty of Health Sciences) to initiate a complaint~~. Requests related to temporary or permanent disabilities, or for retroactive accommodations related to a disability, are excluded from Petitions for Special Consideration and, therefore, must be processed under the *Academic Accommodation of Students with Disabilities* policy

3.7 Requests for Relief for Missed Academic Term Work (MSAF)

The University recognizes that students periodically require relief from academic work for medical or other personal situations. This academic regulation aims to manage these requests by taking into account the needs and obligations of students, instructors and administrators. It is the prerogative of the instructor of the course to determine the appropriate relief for missed term work in his/her course.

Any concerns regarding the granting of relief should be directed to the respective Faculty/Program Office. Requests for relief should be made with a commitment to academic integrity in mind. Requests that deviate from this commitment will be handled under the *Academic Integrity Policy* and *Code of Student Rights and Responsibilities*, where appropriate.

1. Relief for missed academic work worth less than 25% of the final grade resulting from medical or personal situations lasting up to three calendar days:

- Use the McMaster Student Absence Form (MSAF) on-line self-reporting tool. No further documentation is required.
- Students may submit requests for relief using the MSAF once per term.
- An automated email will be sent to the course instructor, who will determine the appropriate relief. Students must immediately follow up with their instructors. Failure to do so may negate the opportunity for relief.
- The MSAF cannot be used to meet a religious obligation or to celebrate an important religious holiday.
- The MSAF cannot be used for academic work that has already been completed/ attempted.

- An MSAF applies only to work that is due within the period for which the MSAF applies, i.e. the 3-day period that is specified in the MSAF; however, all work due in that period can be covered by one MSAF.
- The MSAF cannot be used to apply for relief for any final examination or its equivalent. See *Petitions for Special Consideration*.

2. For medical or personal situations lasting more than three calendar days, and/or for missed academic work worth 25% or more of the final grade, and/or for any request for relief in a term where the MSAF has been used previously in that term:
   - Students must report to their Faculty/Program Office to discuss their situation and will be required to provide appropriate supporting documentation (see *Documentation Requirements* below).
   - If warranted, the Faculty/Program Office will approve the absence, and the instructor will determine appropriate relief.

Documentation Requirements

If the reason for a request for relief is medical, the approved McMaster University Medical Form covering the relevant dates must be submitted. The student must be seen by a doctor at the earliest possible date, normally on or before the date of the missed work and the doctor must verify the duration of the illness.
If the reason is non-medical, appropriate documentation with verifiable origin covering the relevant dates must be submitted, normally within three working days.
In some circumstances, students may be advised to submit a Petition for Special Consideration (Form A) seeking relief for missed academic work. In deciding whether or not to grant a petition, adequacy of the supporting documentation, including the timing in relation to the due date of the missed work and the degree of the student's incapacitation, may be taken into account. Failure to do so may negate the opportunity for relief.
If the petition is approved, the Faculty/Program Office will notify the instructor(s) recommending relief. It is the prerogative of the instructor of the course to determine the appropriate relief for missed term work in their course.

Justification (3.6 & 3.7):

Provides clarity.

3.8 Late Withdrawal

McMaster University provides a Late Withdrawal option to assist students who have become irretrievably behind in a course. Students who have fallen behind with assignments and/or are not prepared to write final examinations (or equivalent) in one or more courses are encouraged to make use of this option and must contact their Academic Advisor in the Faculty/Program Office. Students will work with their Academic Advisor to discuss the situation and what steps they can take to prevent a recurrence.
The maximum number of units for which students may request a Late Withdrawal is 18 units throughout their undergraduate degree.
Students may request a Late Withdrawal, without petition, no later than the last day of classes in the relevant Term. However, it is important to note that:

- Requests for Late Withdrawal cannot be made in courses for which the final exam (or equivalent)has been attempted or completed. This also includes courses where a final grade has been assigned (e.g. clinical courses).
- Such requests will be cancelled or revoked if it is determined that the student attempted or completed the final exam (or equivalent).
- Students cannot use the Late Withdrawal option for courses in which they are under investigation or for which they have been found guilty of academic dishonesty.

Course(s) approved for Late Withdrawal will be:

- Assigned a non-numeric grade of LWD, in lieu of an alpha/numerical grade
- Excluded from the calculation of the GPA
- Ineligible for tuition refund

Approval of a late withdrawal is final, and requests to be re-enrolled in the withdrawn course(s) will not be considered. A withdrawal will not preclude students from enrolling in the course(s) in a subsequent term.

Justification:

No changes – provided for information/reference only.

3.9 Examinations

Examinations conducted by the Office of the Registrar will appear in the Mosaic Student Center and may be scheduled in the morning, afternoon, or evening, Monday through ~~Saturday~~ Sunday. Other instructor-

scheduled tests and examinations may be held throughout each term in compliance with Academic Obligations: Restrictions.
Full details regarding examination procedures conducted by the Office of the Registrar are found in the *Undergraduate Examinations Policy*.

Justification:

To establish the possibility that examinations or tests may be conducted on Saturdays or Sundays to prevent the term from running too late in December.

3.10 Numeric Grading System

Non-Numeric Grades and Notations:

Non-Numeric Grades		~~Notations~~
AUD~~: Audit~~	Audit	~~DEF~~
CAN~~: Cancelled~~	Cancelled	~~EXTRA~~
COM~~: Complete~~	Complete	~~REPEAT~~
CR~~: Credit~~	Credit	~~UPGRADE~~
F~~: Fail~~	Fail	~~(R)~~
INC~~: Incomplete~~	Incomplete	
IP~~: In Progress~~	In Progress	
LWD	Late Withdrawal	
MT~~: Multi-Term~~	Multi-Term	
NC~~: No Credit~~	No Credit	
NMR~~: No Mark Received~~	No Mark Received	
P~~: Pass~~	Pass	
T~~: Transfer Credit~~	Transfer Credit	
W~~: Withdrawn~~	Withdrawn	
XCH~~: Exchange~~	Exchange	

Notations	
DEF	Deferred Examination
EXTRA	Extra credits not used towards degree
REPEAT	Repeat of a previously failed course (under discontinued repeat regulations)
(R)	Repeat of a previous course (under current repeat regulations)
UPGRADE	Repeat of a previously passed course (under discontinued repeat regulations)

Justification:

Provides up-to-date information and notations in a clear/concise manner. Reflects the information displayed on the official transcript.

Report from the Ad-Hoc Committee on Deferred Examinations

This committee was struck March 2019 based on a request by the Undergraduate Council Ad-Hoc Committee on Academic Structures for Student Success.

Committee membership is as follows:
Chair: Rosa da Silva (Elected Faculty Member, Faculty of Science; Associate Chair UG, Biology)

Members: Dr. Kim Dej (Acting Vice-Provost, Faculty), Prof. Cameron Churchill (Elected Faculty Member, Faculty of Engineering), Ms Raquel Munoz (2018-2019 Undergraduate Student Representative, Faculty of Social Sciences), Mr. Peter DeMaio (Graduate Student Representative, Faculty of Social Sciences)

Consultants: Ms Melissa Pool (University Registrar), Ms Bernadette Belan (Senior Associate Registrar, Scheduling and Examinations), Ms Joanne Smith (Assistant Dean, Academic, Faculty of Science), Ms Lynn Giordano (Assistant Dean, Academic, Faculty of Social Sciences), Mr. Tim Nolan (Director, Student Accessibility Services), Mr. Will Huang (Statistician and Programmer, Office of Institutional Research & Analysis)

University Secretariat: Tristan Paul (Governance Coordinator)

The purpose of the Ad-Hoc Committee on Deferred Examinations was:

1. To discuss the difference between accommodations and relief granted through petitions
2. Review the impacts on both students and McMaster University from:
    - The number of deferred examinations
    - The number of students who retroactively drop a course after being granted a deferred examination
    - The number of students who are granted but do not sit a deferred exam
    - Review the pass/fail rate of deferred examinations

This committee has worked closely with the Offices of Institutional Research and Analysis (IRA) and Scheduling and Examinations at McMaster University to be able to obtain quantitative data that can best be used to build recommendations towards the University Deferred Examination Policy. Data analysis and discussion was carried out based on data from the Fall/Winter Terms of 2015/2016; 2016/2017; 2017/2018 and 2018/2019 Academic school years. This report will cover data that is inclusive of Faculty- specific and student-specific analysis.

Average Percentage of Deferred Exams Per Course, Per Faculty

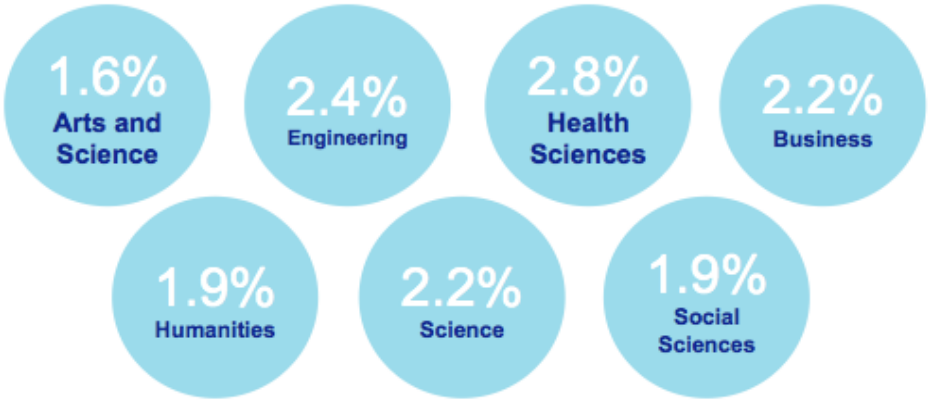

Figure 1: Based on data from the four analyzed Academic school years, an average of 2.14% of students enrolled in all courses per Faculty are granted a deferred final exam. These numbers are reported as percentage of total class enrollment with deferred exams granted per Faculty.

Overall Analysis: There are no abnormal numbers seen in any courses across all Faculties at McMaster. Some small courses appear to have high numbers of deferred exams, but this can be enrolment dependent (eg. 2/20 students who defer in a course is 10%). Some more challenging, high enrolment courses have higher percentages of students deferring their final exam (eg. 3-6%). We may be missing data, as we have no idea of the unofficial accommodations (eg. early writes) that are provided by an instructor

Table 1: Total number of students with at least one deferred exam was close to a total average of 4.9% of the total student population when examined across all Fall and Winter terms from 2015-2019. This is approximately an average of 1212 students/term with an average student population of 24,909/term during this time frame.

Term	Deferred Total	Regular	Total Student Headcount	% of Students who defer
Fall 2015	1,062	22,853	23,915	4.44
Winter 2016	1,274	21,809	23,083	5.52
Fall 2016	1,165	23,849	25,014	4.66
Winter 2017	1,248	22,948	24,196	5.16
Fall 2017	1,143	24,496	25,639	4.46
Winter 2018	1,283	23,454	24,737	5.19
Fall 2018	1,257	25,481	26,738	4.70
Winter 2019	1,266	24,681	25,947	4.88
Total	9,698	189,571	199,269	4.87

Table 2: Number of students who defer final exam but subsequently petition to WITHDRAW from the course

	Deferred and Withdraw	% of Total Student Headcount	% of Deferred that Withdraw
Fall 2015	43	0.18	4.05
Winter 2016	58	0.25	4.55
Fall 2016	79	0.32	6.78
Winter 2017	73	0.30	5.85
Fall 2017	72	0.28	6.30
Winter 2018	72	0.29	5.61
Fall 2018	90	0.34	7.16
Winter 2019	49	0.19	3.87
Total	536	0.27	5.53

Of the approximate 1212 students who deferred, per term, an average of approximately 5.5% (67 students) subsequently petitioned to withdraw from the course. This is roughly 0.27% of the average total undergraduate population. This data was once again examined across all Fall and Winter terms from 2015-2019.

Table 3: Number of students who defer final exam and FAIL the course

	Deferred and Failed	% of Total Student Headcount	% of Deferred that Fail
Fall 2015	179	0.75	16.9
Winter 2016	260	1.13	20.4
Fall 2016	243	0.97	20.9
Winter 2017	264	1.09	21.2
Fall 2017	233	0.91	20.4
Winter 2018	298	1.20	23.2
Fall 2018	295	1.10	23.5
Winter 2019	347	1.34	27.4
Total	2,119	1.06	21.8

Of the approximate 1212 students who deferred, per term, an average of approximately 22% (267 students) failed the course. This is roughly 1.1% of the average total undergraduate population when examined across all Fall and Winter terms from 2015-2019.

Table 4: Number of students who defer and PASS the course

	Deferred and Pass	% of Total Student Headcount	% of Deferred that Pass
Fall 2015	840	3.51	79.1
Winter 2016	956	4.14	75.0
Fall 2016	843	3.37	72.4
Winter 2017	911	3.77	73.0
Fall 2017	838	3.27	73.3
Winter 2018	913	3.69	71.2
Fall 2018	872	3.26	69.4
Winter 2019	870	3.35	68.7
Total	7,043	3.53	72.6

Of the approximate 1212 students per term who deferred, an average of approximately 73% (880 students) passed the course when examined across all Fall and Winter terms from 2015-2019. This is roughly 3.5% of the average total undergraduate population. As a whole, more students tend to pass the Winter than the Fall deferred exams.

Conclusion from Tables 2-4: Most students who are deferring exams are passing. Interesting dataset coming up: Winter 2020, there is a scheduled 4 day break before exams. It will be interesting to obtain deferred exam data at that time and compare to Fall 2019.

Table 5: Total number of students with multiple deferred exams

Of the approximate 1212 students per term who deferred, an average of approximately 20% of these students (241 students) deferred multiple exams. This is roughly 0.97% of the average total undergraduate population when examined across all Fall and Winter terms from 2015-2019.

Term	Students with Multiple Deferred Exams (SMDE)	Courses Taken by SMDE	Courses Deferred by SMDE (Fall 2015-Winter 2019	% of courses deferred by SMDE (Fall 2015-Winter 2019)
Fall 2015	181	3643	863	23.7
Winter 2016	289	6726	1429	21.2
Fall 2016	223	5821	1197	20.6
Winter 2017	226	6158	1143	18.6
Fall 2017	225	6253	1291	20.6
Winter 2018	259	7121	1395	19.6
Fall 2018	240	6075	1284	21.1
Winter 2019	281	6864	1344	19.6
Total	**1924**	**48661**	**9946**	**20.6**

Table 6: Total number of students at McMaster who are granted but do not sit a deferred exam (DNW)

Academic Year	Fall	Winter	Total/Academic Year
2015/2016	157	234	391
2016/2017	180	214	394
2017/2018	224	230	454
2018/2019	277	272	549

Of the approximate 1212 students per term who deferred, an average of approximately 18% (224 students) deferred multiple exams. This is roughly 0.9% of the average total undergraduate population when examined across all Fall and Winter terms from 2015-2019.

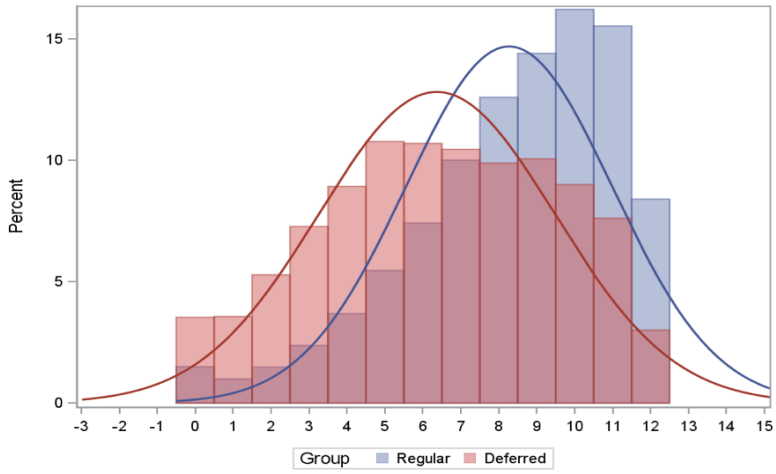

Figure 2: Overall student GPA when comparing students who have a deferred final exam to those students who do not defer a final exam when examined across all Fall and Winter terms from 2015-2019**.** Students who defer final exams have a lower final GPA. The breakdown of this data can be found in Table 7.

Table 7: GPA distribution of students who have deferred final exams compared to the GPA distribution of students who have not deferred a final exam when examined across all Fall and Winter terms from 2015-2019.

GPA	Deferred		Regular	
	#	%	#	%
A (GPA ≥ 10)	1433	15.8%	62427	33.6%
B (7 ≤ GPA < 10)	2700	29.7%	73305	39.5%
C (4 ≤ GPA < 7)	2834	31.2%	35622	19.2%
D (0 < GPA < 4)	1876	20.6%	11899	6.4%
F (GPA = 0)	250	2.7%	2440	1.3%
Average GPA	6.37		8.27	
Median GPA	6.40		8.80	

Summary:

Following discussions and analysis of the 2015-2019 data presented within this report, the Ad-Hoc Committee on Deferred Examinations acknowledges that a small percentage of students deferred at least one final exam during the Fall and Winter terms throughout this timeframe. The vast majority of students who deferred, passed the course (73% of students who defer a final exam). This is certainly a positive outcome, but there are still small subsets of students who requested to defer a final exam yet then subsequently failed a course or petitioned to withdraw from a course. There are also a small number of students who were granted a deferred final exam, but did not sit the exam. Of specific note, the committee highlights that of the average 1212 students/term with at least one deferred final exam, 20% of these students have more than one deferred exam per term. Based on this data analysis, and following the observation that students who defer final examination have a lower final GPA, the Ad Hoc Committee on Deferred Examinations has a series of recommendations that are not prescriptive, but may serve as guidelines. These are outlined below.

Instructor-specific recommendations:

- Exam scheduling has become more difficult over the last few years due to increasing student enrolment numbers. One of the outcomes has been a student examination schedule that has the potential to place a great deal of stress on students during the examination period. This pressure may contribute to the number of students who request a deferred final examination. The committee encourages instructors to consider alternative approaches to assessment throughout the academic term. A move towards fewer courses with final examinations would reduce pressure on scheduling and will directly reflect the possibility to creating more reasonable student examination schedules.

- The committee encourages instructors to consider the implementation of alternate sitting sessions for missed tests rather than re-weighting the value of a missed test to the final exam. This may minimize the number of students who petition to defer a final examination.

- McMaster University has an examination ban period that is scheduled during the last week of each term. Tests, quizzes or other course work that is worth more than 10% of the final course grade cannot be assigned during this period. In addition, due dates for all coursework must be on or before the final day of classes if the course has a scheduled final exam that is to take place during the final examination period. Please see Section B of the Undergraduate Course Management Policy for further details (https://secretariat.mcmaster.ca/app/uploads/2019/06/Undergraduate-Course-Management-Policy.pdf). The committee acknowledges that courses that adhere to this policy, may make it more feasible for students with final exams to prepare for their examinations as the examination period approaches.

- The data in this report outlines the recorded instances and outcomes where students requested an official deferred final exam. Unfortunately, we are not able to track any instructor-specific accommodations (eg. early writes). The committee encourages course instructors to follow the deferred examination policy. It is only by tracking student outcomes that are officially documented, that we will be able to track students at academic risk and be able to advise accordingly.

- In an effort to encourage equitable testing for all students, the committee encourages instructors to consider writing the deferred exam copy at the same time when the regularly deferred exam is being created. This practice may likely lead to exam copies that are of equal difficulty during the regular and deferred examination periods.

- The committee encourages course instructors to continue to work with the McMaster Student Accessibility Services (SAS) team to maximize accommodations within reasonable means to students with these needs.

Institution-specific recommendations:

- This upcoming Winter 2020 term, all students will have a 4-day "study" window following the last day of classes prior to the start of the scheduled examination period. The Ad-Hoc Committee on Deferred Examinations will reconvene at that time to evaluate the deferred examination data during the Winter 2020 term in comparison to data acquired and analyzed over the 2015-2019 Fall, Winter terms. It may be worthwhile to consider an official study period be instituted at McMaster prior to all examination periods. Such a study period can provide students with the additional opportunity to study for final examination following the last day of classes. This can potentially lead to a decrease in the requested deferred examination requests.

- Given the added stress of scheduling all student exams during a set examination period, the committee recommends an institutional consideration for designate examination/testing centre space. The implementation of such a space has the potential of minimizing a hectic student examination schedule and has the potential to reduce the number of deferred examination requests.

- In an effort to encourage equitable student testing, the committee recommends establishing an exam copy submission system such that instructors are able to submit the regular examination copy at the same time as the deferred examination test copy.

This will enable instructors to write both exam versions at the same time and minimize any potential discrepancies in the level of difficulty between examination copies.

- The committee has reviewed the current Petition for Special Consideration (Form B)-Request for Deferred Examination Form. This review resulted in proposed modifications to Form B whereby students will only be allowed to apply for one deferred exam per Term. Students needing to apply for more than one deferred exam per Term, must meet with an Academic Advisor. We present this modified Form B for consideration and possible implementation.

- Note: Most recently, McMaster has established and implemented a Late Withdrawal Policy. When the committee reconvenes in 2020, the deferred exam requests and outcomes will be evaluated taking into account the impact of the Late Withdrawal Policy.

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PETITION FOR SPECIAL CONSIDERATION (FORM B)
Request for Deferred Examination

Name: _____ **Student Number:** _____

Email: _____ **Program & Level:** _____

Reason examination not written: _____

_____

Supporting documentation must be attached.

SUBJECT & COURSE CODE	TERM	INSTRUCTOR	DATE & TIME OF EXAM

1. Have you applied for another deferred examination in this Term? ☐ Yes ☐ No
   a. If yes, please indicate course(s):_____

Note: If this is your second or more deferral request for the current Term, you MUST meet with an Academic Advisor. This request will <u>not</u> be considered until you have met with an advisor.

You must read the following important information, check each box, and sign below:

☐ I confirm that I **did not** attend or participate in any capacity in the above Examination.

☐ I confirm that I have completed all other requirements for the above course and have done sufficiently well to **pass** if granted a Deferred Examination. I understand that approval for a Deferred Examination will be **revoked** if this is found **not** to be true.

☐ I understand that misrepresentation of my academic situation may result in charges of ***academic dishonesty***.

☐ I understand, if granted, the above <u>Deferred Examination</u> **<u>must</u>** <u>be written as follows, and if not written</u> **<u>cannot be deferred a second time</u>**.
   a) Examinations for Fall Term courses are written during the Winter Mid-Term Recess Period.
   b) Examinations for Winter Term courses are written in late June.
   c) Examinations for Spring/Summer Term courses are written during the Fall Mid-Term Recess Period.

☐ I understand that if granted more than one Deferred Examination, I will be required to reduce my course load during the term in which the Deferred Examination(s) are being written. The decision regarding a reduced load will be communicated by email.

☐ I understand that it is my responsibility to check my academic record to confirm the decision for my Request for Deferred Examination.

2. Have you applied for a deferred examination in a previous Term? ☐ Yes ☐ No

Student Signature: _____ **Date:** _____

The information gathered on this form is collected under the authority of the *McMaster University Act, 1976*. The information is used for the academic, administrative, financial and statistical purposes of the University including, but not limited to, admissions; registration and maintaining records; awards and scholarships; convocation; provision of student services, including access to information systems; alumni; and disclosure to or on behalf of the applicable McMaster student government. This information is protected and being collected under section 39 (2) and section 42 of the *Freedom of Information and Protection of Privacy Act* of Ontario. Questions regarding the collection or use of this personal information should be directed to the University Registrar, University Hall 209, McMaster University.

FOR OFFICE USE ONLY

□ Approved Courses to be dropped (next term): _____ Maximum load (next term): _____

□ Denied

Comments: _____

Authorizing Signature: _____ Date: _____

McMASTER UNIVERSITY: SESSIONAL DATES 2020-2021

Fall and Winter Terms 2020-2021

	Fall Term (62 days)	**Winter Term** (62 days)	**Courses Spanning both Terms** (124 days)
Enrolment begins	*To be announced*		
Classes begin	Tuesday, September 8	Wednesday, January 6	Tuesday, September 8
Last day for enrolment and adding or dropping courses	Wednesday, September 16	Thursday, January 14	Wednesday, September 16
Mid-Term Recess(es)	Monday, October 12 to Sunday, October 18	Monday, February 15 to Sunday, February 21	Monday, October 12 to Sunday, October 18 and, Monday, February 15 to Sunday, February 21
Last day for withdrawing from courses without failure by default	Friday, November 13	Friday, March 12	Friday, March 12
Good Friday: No classes or examinations	--	Friday, April 2	Friday, April 2
Test and Examination Restriction	Thursday, December 3 to Wednesday, December 9	Monday, April 5 to Monday, April 12	Monday, April 5 to Monday, April 12
Classes end	Wednesday, December 9	Friday, April 9	Friday, April 9
Mid-Term Tests Level (I)	--	--	Thursday, December 10 to Wednesday, December 23
Final Examinations	Thursday, December 10 to Wednesday, December 23	Tuesday, April 13 to Wednesday, April 28	Tuesday, April 13 to Wednesday, April 28
Deferred examinations	Tuesday, February 16 to Friday, February 19	Monday June 21 to Thursday June 24	Monday June 21 to Thursday June 24

2021 Spring/Summer Term

	Spring Session (34 days)	**Summer Session** (33 days)	**Full-Term Courses** (67 days)	**Intersession**
Classes begin	Monday, May 3	Monday, June 21	Monday, May 3	Monday, May 3
Last day for enrolment and adding or dropping courses (drop/add)	Monday, May 10	Monday, June 28	Monday, May 10	Monday, May 10
Victoria Day: No classes	Monday, May 24	--	Monday, May 24	Monday, May 24
Canada Day: No classes	--	Thursday, July 1	Thursday, July 1	-
Last day withdrawing from courses without failure by default	Wednesday, June 2	Wednesday, July 21	Wednesday, July 21	Wednesday, May 19
Civic Holiday: No classes	--	Monday, August 2	Monday, August 2	-
Classes end	Friday, June 18	Friday, August 6	Friday, August 6	Friday, May 28
Final Examinations	*As arranged by instructor in class time*			-
Deferred Examinations	Tuesday October 12 to Friday, October 15, 2021			-