UNIVERSITY
SECRETARIAT

- Board of Governors
- Senate

L8S 4L8

Phone: $\quad 905.525 .9140$, Ext. 24337
Fax: 905.526 .9884
E-mail: univsec@mcmaster.ca
http://www.secretariat.mcmaster.ca

UNDERGRADUATE COUNCIL
Tuesday, January 25, 2022 at 2:30 p.m.
Zoom

## Agenda

Page

1. MINUTES OF PREVIOUS MEETING - DECEMBER 7, 2021 (Approval)
a. Minutes - Dec 7, 2022
2. BUSINESS ARISING
3. CHAIR'S REMARKS
4. REPORT FROM THE EXECUTIVE COMMITTEE (Information.)

Report from the Executive Committee
a. Policy on Requests for Relief for Missed Academic Term Work - Winter Term 2022
5. REPORT FROM THE AWARDS COMMITTEE (Approval/information.)

Report from the Awards Committee
a. Terms of Award
i. New Awards
ii. Proposed New Bursaries
iii. Changes to Award Terms
iv. Awards Removed
v. Award Value Changes

Report from the Office of the Registrar, Aids \& Awards
6. REPORT FROM THE CERTIFICATES AND DIPLOMAS COMMITTEE (Approval)
16-17
18-37
Report from the Certificates and Diplomas Committee
a. Establishment of Certificates \& Diplomas Programs
i. Full-Stack Development Diploma
ii. Certificate of Professional Learning in User Experience and User Interface (UX/UI) Design
iii. Certificate of Professional Learning in Front-End Development
iv. Certificate of Professional Learning in Back-End Development

Support Letter for Full-Stack Development Program from Dr. S. Corner

Full-Stack Development Program Submission
7. REPORT FROM THE CURRICULUM \& ADMISSIONS COMMITTEE (Approval)

Report from the Curriculum \& Admissions Committee
a. Arts and Science Program

Undergraduate Curriculum Report to Senate and Undergraduate Council
(Nov. 2021)
Undergraduate Curriculum Addenda (Jan. 2022)
b. Faculty of Engineering

Undergraduate Curriculum Report to Senate and Undergraduate Council
(Nov. 2021)
Undergraduate Curriculum Addenda
c. Faculty of Health Sciences

Undergraduate Curriculum Report to Senate and Undergraduate Council (Nov. 2021)
d. Faculty of Humanities

Undergraduate Curriculum Report to Senate and Undergraduate Council (Nov. 2021)
e. Faculty of Science

Undergraduate Curriculum Report to Senate and Undergraduate Council (Nov. 2021)
Undergraduate Curriculum Addenda (Jan 11 2022)
f. Faculty of Social Science

Undergraduate Curriculum Report to Senate and Undergraduate Council
(Nov. 2021)
Undergraduate Curriculum Addenda (Jan. 11, 2022)
g. Glossary, General Academic Regulations

Office of the Registrar - Revisions to the 2022-23 Undergraduate Calandar

## 8. OTHER BUSINESS

## UNIVERSITY

SECRETARIAT

- Board of Governors
- Senate

Phone: $\quad 905.525 .9140$, Ext. 24337 Fax: 905.526.9884
E-mail: univsec@mcmaster.ca
http://www.secretariat.mcmaster.ca

MEETING MINUTES OF UNDERGRADUATE COUNCIL
Tuesday, December 7, 2021 at 2:30 p.m. via Zoom

PRESENT: Dr. K. Dej (Chair), Ms. Z. Ahmad, Ms. J. Azzi, Dr. L. Carter, Dr. S. Corner, Dr. R. da Silva, Dr. C. Grise, Dr. M. Farquharson, Dr. S. Hranilovic, Mr. J. Lawrence, Dr. S. McCracken, Dr. K. McGarry, Dr. P. Miu, Ms. M. Pool, Dr. T. Prowse, Dr. S Ritz, Ms. S. Sarhan, Dr. J. Wilson, Ms. C. Richard (Associate University Secretary), Ms. K. Snow (Governance Coordinator).

INVITED: Mr. B. Coburn, Mr. M. Downard, Ms. L. Giordano, Ms. A. Gullage, Ms. L. McDonough, Ms. J. Osterman, Ms. S. Robinson, Ms. N. Solano, Mr. G. Van Gastel, Ms. L. Way, Ms. M. White.

REGRETS: Ms. V. Lewis, Dr. R. Whyte.

## 1. MINUTES OF PREVIOUS MEETING - SEPTEMBER 28TH, 2021

It was duly moved and seconded,
that the Undergraduate Council approve the minutes of the September 28, 2021 meeting, as circulated.

The motion was Carried.

## 2. BUSINESS ARISING

I know of no business arising.

## 3. CHAIR'S REMARKS

Dr. Dej spoke briefly to Members and thanked everyone for their dedicated work during this governance cycle.. Dr. Dej noted that there were many opportunities presently afoot with the Teaching and Learning Strategy, and spoke to the Digital Learning Strategy in particular. It was also noted for Undergraduate Council Members that there remains quite a bit of work to complete around course management policy, including policies surrounding student guidelines and expectations.

## 4. REPORT FROM THE AWARDS COMMITTEE

Dr. Peter Miu, Chair of the Awards Committee, provided an overview of the circulated report.

## a. TERMS OF AWARD

i. Proposed New Awards
ii. Proposed New Bursaries
iii. Changes to Award Terms

It was duly moved and seconded,
that Undergraduate Council approve three new awards, one new bursary, and revisions to three terms from the Undergraduate Calendar, as set out in the attached.

The motion was Carried.
b. 2020-2021 AWARD RECIPIENTS REPORT

This material was presented for information.
c. 2020-2021 AWARD DISBURSEMENT SUMMARY

This material was presented for information.
d. 2021 MAJOR UNIVERSITY AND EXTERNAL AWARDS SELECTION COMMITTEE

This material was presented for information.

## 5. REPORT FROM THE CERTIFICATES AND DIPLOMAS COMMITTEE

Dr. Sean Corner, Chair of the Certificates \& Diplomas Committee provided an overview of the circulated report.
a. Closure of the Certificate of Metallurgy of Iron and Steel

It was duly moved and seconded,
that the Undergraduate Council approve, for recommendation to Senate, the closure of the Certificate in Metallurgy of Iron and Steel, effective November 2021, as set out in the attached.

The motion was Carried.
b. Health Humanities \& Social Science Concurrent Certificate Proposal

It was duly moved and seconded,
that the Undergraduate Council approve, for recommendation to Senate, the creation of the Health Humanities \& Social Science Concurrent Certificate, as set out in the attached.

The motion was Carried.
c. Continuing Education - Certificate of Attendance Program Proposals

This item was presented for information.

## 6. FINAL REPORT FROM THE AD HOC COMMITTEE ON MICROCREDENTIALS

The final report on 'Implementing Micro-Credentials at McMaster University' was provided to Undergraduate Council for information.

Dr. Dej noted that there was student, staff, and faculty representation to discuss the implementation of micro credentials. There will be continued policy work for Undergraduate and Graduate Councils beginning in January. There is currently no desire to centralize creation of micro-credentials; the intent is to have Faculties work with one another and with Continuing Education to identify opportunities for creating micro-credentials, and the central office will be responsible for administrative matters.

## 7. REVISIONS TO THE POLICY ON ACADEMIC PROGRAM DEVELOPMENT AND REVIEW

Dr. Amy Gullage, Educational Developer, MacPherson Institute, provided an overview of the proposed revisions to the Policy on Academic Program Development and Review. It was noted that these most recent revisions came about as Quality Council had revised the Quality Assurance Framework. There was strong encouragement to include meaningful and direct references to Equity, Diversity, Inclusion and Accessibility and colleagues in the Equity and Inclusion Office were consulted during the process.

It was duly moved and seconded,
that the Undergraduate Council approve, for recommendation to Senate, revisions to the Policy on Academic Program Development and Review, as set out in the attached.

The motion was Carried.

## 8. OTHER BUSINESS

In response to a question about timelines for the Digital Learning Strategy Proposal, Dr. Dej noted there have been several rounds of consultations which will continue in the new year, with plans to aim for a spring launch.

As there was no other business, the meeting was adjourned at 3:07 pm.

# REPORT TO UNDERGRADUATE COUNCIL <br> from the UNDERGRADUATE COUNCIL EXECUTIVE COMMITTEE 

FOR INFORMATION
I Policy on Requests for Relief for Missed Academic Term Work - Winter 2022 Term
On January 13 ${ }^{\text {th }}$, 2022, the Undergraduate Council Executive Committee approved via electronic vote, and on behalf of Undergraduate Council, the Policy on Requests for Relief for Missed Academic Term Work - Winter 2022 Term, for inclusion in the General Academic Regulations and to temporarily supersede the Policy on Requests for Relief for Missed Academic Term Work, effective May $1^{\text {st, }}$, 2021. This item is being circulated for information.

Undergraduate Council
January 25, 2022
FOR INFORMATION.

## BRIGHTER WORLD

## Policies, Procedures and Guidelines

Complete Policy Title

Policy Number (if applicable):
Policy on Requests for Relief for Missed Academic Term Work - Winter Term 2022

Approved by

Senate Executive

Date of Original Approval(s)

Responsible Executive
Provost and Vice-President (Academic)
Date of Most Recent Approval
January 14, 2022, effective Winter Term 2022 from January 17, 2022 to April 30, 2022

Supersedes/Amends Policy dated

Policy Specific Enquiries
Provost and Vice-President (Academic)

General Policy Enquiries
Policy (University Secretariat)

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

## IMPORTANT NOTICE FOR WINTER TERM 2022

For the period of January 17, 2022 to April 30, 2022, this Policy will temporarily supersede the Policy on Requests for Relief for Missed Academic Term Work (effective May 1, 2021).

The Policy on Requests for Relief for Missed Academic Term Work (effective May 1, 2021), will be reinstated effective May 1, 2022.

## PREAMBLE

1. The University recognizes that students periodically require relief from academic work for medical or other personal situations. This Policy 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 their course. Any concerns regarding the granting of relief should be directed to the respective Faculty/Program Office.
2. 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/or Code of Student Rights and Responsibilities, where appropriate.

## Exclusions

3. This Policy cannot be used:
a) for academic work that has already been completed or work that has been attempted (which includes the viewing and/or partial completion of on-line assessments (quizzes, tests, etc.);
b) to seek an accommodation to meet religious, Indigenous or Spiritual Observances (see the Policy on Academic Accommodation for Religious, Indigenous and Spiritual Observances);
c) to seek an accommodation related to a permanent or temporary disability, or a retroactive accommodation (see the policy Academic Accommodation of Students with Disabilities); or
d) to apply for relief for any final examination or its equivalent (see Petitions for Special Consideration in the Undergraduate Calendar).

## McMaster Student Absence Form (MSAF)

4. The McMaster Student Absence Form (MSAF) is a Mosaic tool that, for the purpose of this Policy:
a) is used to allow students to submit Self-Report (Type A) requests for relief; and
b) is used by Faculty/Program Offices for Administrative Report (Type B) requests to:
(i) manage requests for relief; and
(ii) communicate with students and instructors about these requests.
5. The MSAF is available in the MOSAIC Student Center (in the drop-down menu under OTHER ACADEMICS).

Effective January 17 to April 30, 2022

## REQUESTS FOR RELIEF: SELF-REPORT (TYPE A) - FOR WINTER TERM 2022 ONLY

6. Self Report (Type A) requests for relief are for:
a) missed academic work worth less than $25 \%$ of the final grade, resulting from medical or personal situations lasting up to five (5) calendar days.
7. Students are expected to use the MSAF tool to make Self Report (Type A) requests, which:
a) may only be submitted once per Term;
b) requires no supporting documentation; and
c) applies only to work that is due within the period for which the request applies, i.e. the 5-day period that is specified in the MSAF; however, all work due in that period can be covered by one request.
8. An email will be sent to the course instructor(s) to inform them of the request.
9. The instructor will determine the appropriate relief for the Self-Report (Type A) request.
10. Students must immediately follow up with their instructor(s) after submitting the Self-Report (Type A) request. Failure to do so may negate the opportunity for relief.

## REQUESTS FOR RELIEF: ADMINISTRATIVE REPORT (TYPE B) - FOR WINTER TERM 2022 ONLY

11. Administrative Report (Type B) requests for relief are for:
a) medical or personal situations lasting more than five (5) calendar days; and/or
b) missed academic work worth $25 \%$ or more of the final grade; and/or
c) any request for relief in a Term where the MSAF tool has been used previously in that Term.
12. 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).
13. If warranted, the Faculty/Program Office will process the relief request and will notify the instructor(s) and the student.
14. The instructor will determine the appropriate relief for these Administrative Report (Type B) requests.
15. Students must immediately follow up with their instructor(s) after being notified their request has been processed. Failure to do so may negate the opportunity for relief.

Policy on Requests for Relief for Missed Academic Term Work - Winter Term 2022

## Documentation Requirements - FOR WINTER TERM 2022 ONLY

16. 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 health care practitioner at the earliest possible date, normally on or before the date of the missed work and the health care practitioner must verify the duration of the illness.
17. If the reason is non-medical, appropriate documentation with verifiable origin covering the relevant dates must be submitted, normally within five (5) business days.
18. In some circumstances, students may be advised to submit a Petition for Special Consideration.

Privacy
19. All personal information, including supporting documentation (e.g. personal health information) requested by the University to facilitate relief requests shall be handled in accordance with the Freedom of Information and Protection of Privacy Act.

# REPORT TO UNDERGRADUATE COUNCIL from the AWARDS COMMITTEE 

## FOR APPROVAL

## a. Terms of Award

At its January 11th, 2022 meeting, the Undergraduate Council Awards Committee approved the following for recommendation to Undergraduate Council. Details of the proposed recommendations are contained within the circulated report.
i. New Awards

The Dr. Robert Scott Engineering Academic Grant
The Dr. Ram Nath Gupta Scholarship
ii. Proposed New Bursaries

The Betram Bursary
The Harry \& Eileen Coates Bursary
The Future Undergraduate Nursing Bursary
The Social Sciences Black Student Bursary
iii. Changes to Award Terms

The Createch Group Scholarship in Computer Science
The Robert John Morris Community Contribution Awards
The Ontario Professional Engineers Foundation for Education Entrance Scholarship
The Ontario Professional Engineers Foundation for Education Undergraduate Scholarship
iv. Awards Removed

The Columbia International College Community Leader Award

It is now recommended,
that Undergraduate Council approve two new awards, four new bursaries, revisions to four award terms, and the removal of one award from the Undergraduate Calendar, as set out in the attached.

## FOR INFORMATION

v. Award Value Changes

At the same meeting, the Awards Committee received 24 award value changes for information.

Undergraduate Council January 25, 2022

## PROPOSED NEW AWARDS FOR APPROVAL

## In-course Academic Grants

## The Dr. Robert Scott Engineering Academic Grant

Established in 2021 by Dr. Robert Scott, B.Eng.Mgt. (Class of '84), M.Eng. (Class of '87), and M.D. (Class of '89).
Requirements: To be granted to female undergraduate students enrolled in Level 2 in the Faculty of Engineering who attain high averages and demonstrate financial need.
Typically Available: $1 \times \$ 3,000$

## In-Course and Renewal Awards

The Dr. Ram Nath Gupta Scholarship
Established in 2021 by the Gupta family in honour of Ram Nath Gupta.
Requirements: To be awarded to undergraduate students enrolled in a Chemistry or Chemical Biology program who attain high averages.
Typically Available: $1 \times \$ 1,000$

## PROPOSED NEW BURSARIES FOR APPROVAL

## The Bertram Bursary

Established in 2021 by the H.G Bertram Foundation.
Requirements: To be granted to undergraduate students enrolled in any program who demonstrate financial need and who are registered with Student Accessibility Services. Preference will be given to students from Dundas or Hamilton.

## The Harry \& Eileen Coates Bursary

Established in 2021 by Gary Coates, B.Eng. (Class of '73) and his wife Faye, in loving memory of Gary's parents, Harry and Eileen Coates.
Requirements: To be granted to undergraduate students enrolled in the Faculty of Engineering who demonstrate financial need.

## The Future Undergraduate Nursing Students Bursary

Established in 2021, in celebration of the School of Nursing's 75th anniversary and faculty members' years of service to the school.
Requirements: To be granted annually to undergraduate students enrolled in the School of Nursing who demonstrate financial need.

## The Social Sciences Black Student Bursary

Established in 2021.
Requirements: To be granted to undergraduate students enrolled in the Faculty of Social Sciences who identify as Black students and demonstrate financial need.

## CHANGES TO AWARD TERMS FOR APPROVAL

## The Createch Group Scholarship in Computer Science

Established in 2009 by The Createch Group.
Requirements: To be awarded to astudent students in the Faculty of Engineering who is are enrolled in Level 2 or above of the Honours Computer Science (B.A.Sc.) or the Business Informatics program with the highest Fall-Winter Average. Preference to students who have completed Level 2 in the current term.

## McMaster <br> University

OFFICE OF THE REGISTRAR, AID \& AWARDS
To Undergraduate Council Awards Committee January 11, 2022

The Robert John Morris Community Contribution Awards
Established in 1996 by family, friends, and colleagues of Robert John Morris.
Requirements: Six awards: three to be granted to students upon completion of Level 42 or higher of a program in Engineering, and three to be granted to students upon completion of Level 2 or higher of a program in Engineering Physics who, in the judgment of the appropriate selection committee in the Faculty of Engineering, have demonstrated leadership or innovative skills in the field of Engineering or, through their participation in campus and community activities, have had a significant influence on the lives of Engineering students at McMaster University.

The Ontario Professional Engineers Foundation for Education Entrance Scholarship
Established in 1961 by the Ontario Professional Engineers Foundation for Education.
Requirements: Jwoscholarships to be awarded, one to a female student and one to a male student, enrolled-To be awarded to undergraduate students enteringin a CEAB (Canadian Engineering Accreditation Board) accredited program in the Faculty of Engineering who have demonstrated a combination of high academic achievement and exhibit characteristics of leadership. Recipients must have an Ontario-Secondary School Diploma with overall final admission average of at least 90 percent. leadership qualities through the participation of in extra-curricular activities.

The Ontario Professional Engineers Foundation for Education Undergraduate Scholarships
Established in 1961 by the Ontario Professional Engineers Foundation for Education.
Requirements: Eight scholarships $\ddagger$ To be awarded to undergraduate students enrolled in a CEAB (Canadian Engineering Accreditation Board) accredited program in the Faculty of Engineering with high academic achievement who; in the judgment of the Faculty of Engineering, have demonstrated leadership qualities in professional affairs and involvement in extracurricular activities.

Awards Removed from The Undergraduate Calendar for Approval

The Columbia International College Community Leader Award

## To Undergraduate Council Awards Committee January 11, 2022

## FOR INFORMATION

AWARD VALUE CHANGES

| The Stanley T. Bayley Scholarship in Biology | $\$$ | 800 | $\$$ | 1,000 |
| :--- | ---: | ---: | ---: | ---: |
| The Abe Black Memorial Prize | $\$$ | 600 | $\$$ | 475 |
| The P.J. Ferguson Academic Grant | $\$$ | 1,000 | $\$$ | 1,500 |
| The Rick D Hackett Schol in HR Mgt \& Org Behaviour | $\$$ | 1,300 | $\$$ | 1,400 |
| The Ross Hume Hall Memorial Scholarship | $\$$ | 600 | $\$$ | 700 |
| The Alise Alexanian Hassel Memorial Scholarship | $\$$ | 800 | $\$$ | 1,000 |
| The W. Norman Jeeves Scholarship | $\$$ | 475 | $\$$ | 500 |
| The A.I. Johnson Scholarship | $\$$ | 1,000 | $\$$ | 1,500 |
| The Cathryn E. Kaake Merit Award | $\$$ | 1,000 | $\$$ | 1,500 |
| The Linardic Family Academic Grant | $\$$ | 1,700 | $\$$ | 2,000 |
| The Lianne Marks Scholarship | $\$$ | 800 | $\$$ | 900 |
| The Karen M. Mason Academic Grant in Nursing | $\$$ | 1,000 | $\$$ | 2,500 |
| The John R. McCarthy Scholarship | $\$$ | 700 | $\$$ | 800 |
| The McMaster University Retirees Association Prize | $\$$ | 750 | $\$$ | 1,000 |
| The Donald G. McNabb Scholarship | $\$$ | 925 | $\$$ | 1,000 |
| The Simon McNally Scholarship | $\$$ | 650 | $\$$ | 1,400 |
| The Middleton/Walker Prize in Sedimentary Geology | $\$$ | 1,250 | $\$$ | 1,350 |
| The Robert Nixon Scholarship | $\$$ | 575 | $\$$ | 650 |
| The Derry Novak Prize | $\$$ | 800 | $\$$ | 1,000 |
| The Tony and Lucy Pickard Scholarship | $\$$ | 425 | $\$$ | 1,000 |
| The Marnie Spears Scholarship | $\$$ | 1,200 | $\$$ | 2,000 |
| The John H. Trueman Prize | $\$$ | 450 | $\$$ | 600 |
| The John H. Trueman Scholarship | $\$$ | 250 | $\$$ | 600 |
| The Jim Waddington Prize in Physics \& Astronomy | $\$$ | 1,500 | $\$$ | 2,500 |

# Report to Undergraduate Council 

## from the

CERTIFICATES AND DIPLOMAS COMMITTEE

## FOR APPROVAL

a. Establishment of Certificates and Diplomas Programs

At its January $11^{\text {th }}, 2022$ meeting, the Certificates \& Diplomas Committee received, for approval, the Committee of Continuing Education's plan to establish the Full-Stack Development Program. Details of the program are contained within the circulated report.
i. Full-Stack Development Diploma.
ii. Certificate of Professional Learning in User Experience and User Interface (UX/UI) Design.
iii. Certificate of Professional Learning in Front-End Development.
iv. Certificate of Professional Learning in Back-End Development.

It is now recommended,
that the Undergraduate Council approve, for recommendation to Senate, the establishment of the Full-Stack Development Diploma, as set out in the attached.

It is now recommended,
that the Undergraduate Council approve, for recommendation to Senate, the establishment of the Certificate of Professional Learning in User Experience and User Interface (UX/UI) Design, as set out in the attached.

It is now recommended,
that the Undergraduate Council approve, for recommendation to Senate, the establishment of the Certificate of Professional Learning in Front-End Development, as set out in the attached.

It is now recommended,
that the Undergraduate Council approve, for recommendation to Senate, the establishment of the Certificate of Professional Learning in Back-End Development, as set out in the attached.

Undergraduate Council
January 25, 2022

HUMANITIES

Office of the Dean
Humanities Chester New Hall, Room 112 1280 Main Street West
Hamilton, ON L8S 4L8

Be (905) 525-9140 26546
的 (905) 528-6733
(\#) http://www.humanities.mcmaster.ca

December 17, 2021
RE: Proposal for Certificates of Professional Learning in Web Development and Design; Proposal for Diploma in Full-Stack Development

## TO: Certificates \& Diplomas Committee

I have reviewed the following program submissions presented by McMaster Continuing Education for the establishment of three Certificates of Professional Learning within the field of Web Development and Design. The specific program titles are as follows:

- Certificate of Professional Learning in User Experience/User Interface Design
- Certificate of Professional Learning in Front-End Development
- Certificate of Professional Learning in Back-End Development

I have determined that the proposed programs meet the criteria set out by the Undergraduate Council in its guidelines for certificates and diplomas. I, therefore, endorse these submissions with the support of the Faculty of Humanities.

At my request, these program proposals were reviewed by Dr. David Harris Smith. His conclusion is that the objectives of the proposed programs are viable. The courses included in each program fulfil the stated objectives, and the programs meet Undergraduate Council's criteria for the designation of a Certificate of Professional Learning. I concur with Dr. Smith's assessment.

I also agree with Dr. Smith's assessment that students who successfully complete the three Certificates of Professional Learning qualify for a Diploma in Full-Stack Development through McMaster Continuing Education.

The Faculty of Humanities is pleased to have these high-quality programs available for individuals to meet their academic and professional goals. As the academic affiliate for the programs, the Faculty of Humanities recognizes that we provide both review expertise of the initial submissions and overview of ongoing curriculum issues. Additionally, we have provided McMaster Continuing Education with the guidelines their students will need for possible use of the advanced standing rules should they wish to enter our degree programs using credit from the completion of the above programs.


Sincerely,
Dr. Sean Corner
Associate Dean
Faculty of Humanities
Cc: Lorraine Carter, Director, McMaster Continuing Education
Dan Piedra, Assistant Director
Nathan Cheney, Program Manager

| CONTINUING EDUCATION <br> McM <br> Univer |  |
| :---: | :---: |
| Continuing Education Academic Program Submission - For Approval |  |
| Department \& Program Information (complete all fields): |  |
| Program Name: | Full-Stack Development |
| Academic Credential: | Diploma |
| Name of Representative: | Nathan Cheney, Program Manager |
| Effective Date: | 2022-02-01 |
| Date of Submission: | 2022-01-11 |
| Academic Merit (complete all fields; write "not applicable" as needed): |  |
| Program Overview: | The proposed Full-Stack Development program is designed to prepare students with skills and knowledge to become full-stack developers for websites and online content. This program will provide training across three disciplines in the web design and development: UX/UI Design, Front-End Development and Back-End Development. Students will leave the program with a strong knowledge of the web development language JavaScript, HTML, design best practices and working as part of a development team. This program will highlight the core competencies and skillsets that every full-stack development professional needs in today's workforce. |
| Learning Objectives: | Upon completion of this program, the students will demonstrate the skills in competencies in the following areas: <br> UX/UI Design: <br> 1. Use the design thinking process to better support clients and users <br> 2. Follow the design process to problem solve and develop new products/designs. <br> 3. Work in major design programs like Adobe Creative Suite. <br> 4. Work as part of a design team. <br> 5. Develop mockups/storyboards for design problems <br> 6. Demonstrate a basic understanding of HTML/CSS to work with developers throughout the design process. |

\(\left.$$
\begin{array}{|l|l|}\hline & \begin{array}{l}\text { 7. Apply accessibility and WCAG guidelines for design. } \\
\text { Front-End Development: } \\
\text { 1. Use HTML to develop the front-end of websites. } \\
\text { 2. Develop proficiency in JavaScript coding. } \\
\text { 3. Apply JavaScript frameworks. }\end{array}
$$ <br>
4. Work as part of a development team. <br>
5. Use source control software when developing websites. <br>
6. Identify the role and tasks of a front-end developer as <br>
part of the design process. <br>
7. Explain what an API is and how it is incorporated into <br>

website design.\end{array}\right\}\)| Back-End Development: |
| :--- |
| 1. Demonstrate how a server interacts with a database. |
| 2. Develop expertise in JavaScript coding. |
| 3. Demonstrate how to use API software. |
| 4. Critically analyze the future of full-stack |
| development through the lens of AWS and Shopify. |
| 5. Demonstrate how to run queries from a back-end |
| database. |
| 6. Identify the role and tasks of a back-end developer as |
| part of the website development process. |
| 7. Understand what an API is and how it is |
| incorporated into website design. |

$\left.\begin{array}{|l|l|l|}\hline \begin{array}{l}\text { Program Admission } \\ \text { Requirements and Pre- } \\ \text { requisites }\end{array} & \begin{array}{l}\text { In compliance with the Certificates and Diploma, admission } \\ \text { policy from Undergraduate Council, students who wish to } \\ \text { enter the program should meet the following requirements } \\ \text { based on their education and work experience: } \\ \text { 1. Be a mature student as defined in the Undergraduate } \\ \text { Calendar of McMaster University; or be deemed an } \\ \text { exceptional case by the Centre for Continuing } \\ \text { Education }\end{array} \\ \text { 2. English Language Proficiency requirements: Completion } \\ \text { of TOEFL exam with a minimum acceptable IBT score of } \\ \text { 86 overall with a minimum score of 20 on each of the } \\ \text { four components (Reading, Writing, Speaking, } \\ \text { Listening), valid for } 2 \text { years }\end{array}\right\}$

|  | been taken at a recognized post-secondary institution in the last 5 years. |  |  |
| :---: | :---: | :---: | :---: |
| Statement of Financial Viability: |  |  |  |
| I have reviewed the business case and financial projections which include enrolment projections and costs. Sources of revenue for this program include tuition and supplementary fees (MAPS). Expenses are typical and include significant upfront development and marketing costs, as well as typical ongoing delivery costs (such as payment of facilitators, honoraria for other guest facilitators, materials, advertising and administration). <br> Lorraine Carter, Director, McMaster Continuing Education |  |  |  |
| Statement of Administrative Responsibilities: |  |  |  |
| Statement of Faculty Alignment: <br> The staffing and systems infrastructure to support the following functions already exists within Continuing Education. Costs will be fully covered by tuition, except the first year of the program, when the startup will be subsidized by Continuing Education. <br> Continuing Education program responsibilities: <br> - budget development and monetary responsibilities <br> - program and course development <br> - course registrations/administration <br> - supervision of instructors to ensure all required policies and practices are adhered to and course are taught according to program requirements and standards <br> - Marketing and Promotions <br> The Faculty of Humanities will act as an academic liaison and is charged with the responsibility of ongoing academic review and assessment of the curriculum. The Faculty's letter of support is included at the end of this document. |  |  |  |
| Listing of Courses: |  |  |  |
| Course Nam | Required/ | Unit Valu | Term |
| Design Thinking | Required | 3 units | Fall 2022 |
| Course Description: <br> This course will enable students to use design thinking methodology to assess problems and challenges, discover and use relevant data, develop design solutions, and construct prototypes for validation. Students will also learn how design thinking is a valuable mindset and model in today's global and mobile world and why it is quickly becoming an industryaccepted toolset. |  |  |  |
| UX/UI Applications | Required | 3 units | Winter 2023 |
| Course Description: <br> This application-based course enables students to work with design programs and applications to develop prototypes and mockups for different design challenges. With a focus on modern design tools, students will explore when to use specific programs and how programs can help solve design problems. They will also practice using the tools on real design problems. An introduction to HTML/CSS will prepare students to work within a development team. |  |  |  |


| The Design Team | Required | 3 units | Winter 2023 |
| :---: | :---: | :---: | :---: |
| Course Description: <br> This creative, critical thinking and problem-solving course challenges students to solve industry-related case studies as part of a design team. UX/UI designers consistently need to work as part of a larger team during the design process, product integration, usability and functionality. Students will navigate interpersonal challenges through team building and leadership activities while focussing on solving design issues and problems for the client and user. |  |  |  |
| Website Development | Required | 3 units | Fall 2022 |
| Course Description: <br> This course teaches the principles of designing a website to ensure the information is displayed in a relevant and user-friendly format. Focus is placed on the role of the frontend developer in the design process and on skill development with the tools of web development, such as HTML 5, Cascading Style Sheets (CSS) and JavaScript. Students will begin coding simple websites, learn the technical language and develop their skills related to front-end website development. |  |  |  |
| HTML and CSS | Required | 3 units | Winter 2023 |
| Course Description: <br> In this course, there is an in-depth focus on required knowledge and skills in HTML and CSS so that students will feel comfortable in their website development work. Students will learn and apply industry-recognized techniques to make a visually appealing, functional, and interactive website. |  |  |  |
| Javascript and Frameworks | Require | 3 units | Winter 2023 or Spring 2023 |
| Course Description: <br> The use of JavaScript and associated frameworks is the basis of this course so that students become proficient in the programming language. Students will develop a mobile-first design, add interactivity to a website, and make their websites functional for future use by adding key features to their pages, including e-commerce applications. |  |  |  |
| Back-End Development | Required | 3 units | Fall 2022 |
| Course Description: <br> In this course, students will learn about the purpose of back-end development and how servers, databases and the code that makes them drive web applications. Students will be given opportunities to apply their knowledge through case study scenarios which will enable development of their knowledge of the complex structure of a website. Students will also examine current development systems like Amazon Web Services and e-commerce sites to better understand how their systems align with the future of website development. |  |  |  |
| Interactivity and Databases | Required | 3 units | Winter 2023 |
| Course Description: |  |  |  |


| In this course, students will learn about the structure of database systems within a website <br> and how their code will impact the interactivity with that database system. Students will <br> learn how to set up and configure a database, how information is queried from the <br> database, how systems work with the front-end of a website, the difference in database <br> capability and the structured query language (SQL). |  |  |
| :--- | :--- | :--- |
| Advanced Javascript <br> through Node.JS | Required | 3 units |
| Course Description: <br> Students will deepen their understanding of the JavaScript system and apply their <br> knowledge through developing the back-end of a website using Node.JS. During this course, |  |  |
| students will learn to develop their application programming interfaces (APIs), Lambda, and <br> apply their knowledge by developing foundational code that will allow users to take action <br> on any website. |  |  |



Dr. David Harris Smith
Associate Professor in Communication Studies \& Media Arts
McMaster University
1280 Main Street West, Hamilton, ON, L8S 4L8
905-525-9140, ext. 23248 | Mobile (416) 274-2102

December 17, 2021
RE: Evaluation of the Full-Stack Development Program Proposals for McMaster Continuing Education including Certificates of Professional Learning and Diploma

TO: Dr. Sean Corner, Associate Dean, Faculty of Humanities
At your request, I have reviewed the academic submission documents for the Certificates of Professional Learning in User Experience/User Interface Design, Front-End Development and BackEnd Development to be offered through McMaster Continuing Education. I have examined the structure of each submission and the proposed course descriptions. My finding is that each course meets the standards necessary to be an academic course with 3.0 units of advanced credit value.

Based on my examination of the content as well as the teaching and testing methods proposed for each course, my assessment is that the intellectual rigour of the courses is comparable to that found in undergraduate degree courses. The academic submission documents also indicate that the courses will be taught by qualified individuals (possessing a Master's degree or equivalency), as defined by the Undergraduate Council's Certificate and Diploma requirements. The students taking the courses will meet the minimum requirements set out in the Senate's Certificates and Diplomas Policy (2020) for Undergraduate Council.

I also support the option that, if a student successfully completes the three Certificates of Professional Learning, the student is eligible for a Diploma in Full-Stack Development.

Sincerely,


Dr. David Harris Smith
Associate Professor in the Department of Communication Studies \& Multimedia Faculty of Humanities

Cc: Lorraine Carter, Director, McMaster Continuing Education<br>Dan Piedra, Assistant Director<br>Nathan Cheney, Program Manager

| CONTINUING |
| :--- |
| EDUCATION |
| Department \& Program Information (complete all fields):  <br> Program Name: User Experience and User Interface (UX/UI) Design |
| Academic Credential: |
| Name of Representative: |
| Certificate of Professional Learning |
| Dathan Cheney, Program Manager |


|  | -Demonstration of an awareness of ethical practices and <br> professional standards applicable to a field of employment <br> and/or academic study <br> Exemplification of the knowledge, skills, attitudes, and <br> behaviours required to work and collaborate with people <br> from different cultural backgrounds and to develop <br> effective personal management skills <br> Meeting Learning <br> Objectives: <br> All course learning outcomes in the program will be mapped to <br> the overall program objectives. The delivery format and <br> teaching methods are structured to have a maximum effect on <br> achieving the learning objectives. <br> Requirements and Pre- <br> requisitesIn compliance with the Certificates and Diploma admission <br> policy from Undergraduate Council, students who wish to <br> enter the program should meet the following requirements <br> based on their education and work experience: <br> 1. Be a mature student as defined in the Undergraduate <br> Calendar of McMaster University; or be deemed an <br> exceptional case by McMaster Continuing Education <br> 2. English Language Proficiency requirements: Completion <br> of TOEFL exam with a minimum acceptable score of IBT: <br> 86 overall with a minimum score of 20 on each of the <br> four components (Reading, Writing, Speaking, <br> Listening), valid for 2 years |
| :--- | :--- |
| 3. Some experience in web design and development is |  |
| recommended but not required. |  |


|  | external professionals. In compliance with McMaster's Senate and Undergraduate Council Guidelines for Certificates and Diplomas, selection will be based on academic background and/or experience within the field. Instructors must have a Master's Degree (or equivalent) and significant professional experience and teaching within the field. |  |  |
| :---: | :---: | :---: | :---: |
| Program Advanced Standing: | One transfer credit ( 3 units) will be accepted into this program. Students will need to have obtained a minimum grade of $C+$ in each course transferred. The courses must have been taken at a recognized post-secondary institution in the last 5 years. |  |  |
| Statement of Financial Viability: |  |  |  |
| I have reviewed the business case and financial projections which include enrolment projections and costs. Sources of revenue for this program include tuition and supplementary fees (MAPS). Expenses are typical and include significant upfront development and marketing costs, as well as typical ongoing delivery costs (such as payment of facilitators, honoraria for other guest facilitators, materials, advertising and administration). <br> Lorraine Carter, Director, McMaster Continuing Education |  |  |  |
| Statement of Administrative Responsibilities: |  |  |  |
| Statement of Faculty Alignment: <br> The staffing and systems infrastructure to support the following functions already exists within Continuing Education. Costs will be fully covered by tuition, except the first year of the program, when the startup will be subsidized by Continuing Education. <br> Continuing Education program responsibilities: <br> - budget development and monetary responsibilities <br> - program and course development <br> - course registrations/administration <br> - supervision of instructors to ensure all required policies and practices are adhered to and courses are taught according to program requirements and standards <br> - marketing and promotions <br> The Faculty of Humanities will act as an academic liaison and is charged with the responsibility of ongoing academic review and assessment of the curriculum. The Faculty's letter of support is included at the end of this document. |  |  |  |
| Listing of Courses: |  |  |  |
| Course Name | Required/Elective | Unit Value | Term |
| Design Thinking | Required | 3 units | Fall 2022 |
| Course Description: <br> This course will enable students to use design thinking methodology to assess problems and challenges, discover and use relevant data, develop design solutions, and construct prototypes for validation. Students will also learn how design thinking is a valuable mindset and model in today's global and mobile world and why it is quickly becoming an industryaccepted toolset. |  |  |  |


| UX/UI Applications | Required | 3 | Winter 2023 |
| :---: | :---: | :---: | :---: |
| Course Description: <br> This application-based course enables students to work with design programs and applications to develop prototypes and mockups for different design challenges. With a focus on modern design tools, students will explore when to use specific programs and how programs can help solve design problems. They will also practice using the tools on real design problems. An introduction to HTML/CSS will prepare students to work within a development team. |  |  |  |
| The De |  |  | Winter 2023 |
| Course Description: <br> This creative, critical thinking and problem-solving course challenges students to solve industry-related case studies as part of a design team. UX/UI designers consistently need to work as part of a larger team during the design process, product integration, usability and functionality. Students will navigate interpersonal challenges through team building and leadership activities while focussing on solving design issues and problems for the client and user. |  |  |  |


| CONTINUING McMaster <br> EDUCATION University |  |
| :---: | :---: |
| Continuing Education Academic Program Submission - For Approval |  |
| Department \& Program Information (complete all fields): |  |
| Program Name: | Front-End Development |
| Academic Credential: | Certificate of Professional Learning |
| Name of Representative: | Nathan Cheney, Program Manager |
| Effective Date: | 2022-02-01 |
| Date of Submission: | 2022-01-11 |
| Academic Merit (complete all fields; write "not applicable" as needed): |  |
| Program Overview: | The proposed Front-End Development program is designed to prepare students with skills and knowledge to become frontend developers of online content as identified by industry professionals and employers. This program will provide specialized training in HTML and JavaScript, highlighting the core competencies and skillsets that front-end developers need in today's workforce. The curriculum will cover the following competency areas and software training: HTML, CSS, JavaScript and frameworks, source control (GIT) and an understanding of web services. |
| Learning Objectives: | 1. Use HTML to develop the front-end of websites. <br> 2. Develop proficiency in JavaScript coding. <br> 3. Apply JavaScript frameworks. <br> 4. Work as part of a development team. <br> 5. Use source control software when developing websites. <br> 6. Identify the role and tasks of a front-end developer as part of the design process. <br> 7. Explain what an API is and how it is incorporated into website design. <br> The following additional objectives will be threaded within each course: <br> - Demonstration of awareness of ethical practices and professional standards applicable to a field of employment and/or academic study. <br> - Exemplification of the knowledge, skills, attitudes, and behaviours required to work and collaborate with people |


|  | $\begin{array}{l}\text { from different cultural backgrounds and to develop } \\ \text { effective personal management skills. }\end{array}$ |
| :--- | :--- |
| $\begin{array}{l}\text { Meeting Learning } \\ \text { Objectives: }\end{array}$ | $\begin{array}{l}\text { All course learning outcomes in the program will be mapped to } \\ \text { the overall program objectives. The delivery format and } \\ \text { teaching methods are structured to have a maximum effect on } \\ \text { achieving the learning objectives. }\end{array}$ |
| $\begin{array}{l}\text { Program Admission } \\ \text { Requirements and Pre- } \\ \text { requisites }\end{array}$ | $\begin{array}{l}\text { In compliance with the Certificates and Diploma admission } \\ \text { policy from Undergraduate Council, students who wish to } \\ \text { enter the program should meet the following requirements } \\ \text { based on their education and work experience: } \\ \text { 1. Be a mature student as defined in the Undergraduate } \\ \text { Calendar of McMaster University; or be deemed an } \\ \text { exceptional case by the Centre for Continuing } \\ \text { Education }\end{array}$ |
| 2. English Language Proficiency requirements: Completion |  |
| of TOEFL exam with a minimum acceptable IBT score of |  |
| 86 overall with a minimum score of 20 on each of the |  |
| four components (Reading, Writing, Speaking, |  |
| Listening), valid for 2 years |  |$\}$


|  | Diplomas, selection will be based on academic background and/or experience within the field. Instructors must have a Master's Degree (or equivalent) and significant professional experience and teaching within the field. |  |  |
| :---: | :---: | :---: | :---: |
| Program Advanced Standing: | One transfer credit ( 3 units) will be accepted into this program. Students will need to have obtained a minimum grade of $C+$ in each course transferred. The courses must have been taken at a recognized post-secondary institution in the last 5 years. |  |  |
| Statement of Financial Viability: |  |  |  |
| I have reviewed the business case and financial projections which include enrolment projections and costs. Sources of revenue for this program include tuition and supplementary fees (MAPS). Expenses are typical and include significant upfront development and marketing costs, as well as typical ongoing delivery costs (such as payment of facilitators, honoraria for other guest facilitators, materials, advertising and administration). <br> Lorraine Carter, Director, McMaster Continuing Education |  |  |  |
| Statement of Administrative Responsibilities: |  |  |  |
| Statement of Faculty Alignment: <br> The staffing and systems infrastructure to support the following functions already exists within Continuing Education. Costs will be fully covered by tuition, except the first year of the program, when the startup will be subsidized by Continuing Education. <br> Continuing Education program responsibilities: <br> - budget development and monetary responsibilities <br> - program and course development <br> - course registrations/administration <br> - supervision of instructors to ensure all required policies and practices are adhered to and courses are taught according to program requirements and standards <br> - Marketing and Promotions <br> The Faculty of Humanities will act as an academic liaison and is charged with the responsibility of ongoing academic review and assessment of the curriculum. The Faculty's letter of support is included at the end of this document. |  |  |  |
| Listing of Courses: |  |  |  |
| Course Name | Required/ | Unit Value | Term |
| Website Development | Required | 3 units | Fall 2022 |
| Course Description: <br> This course teaches the principles of designing a website to ensure the information is displayed in a relevant and user-friendly format. Focus is placed on the role of the frontend developer in the design process and on skill development with the tools of web development, such as HTML 5, Cascading Style Sheets (CSS) and JavaScript. Students will begin coding simple websites, learn the technical language and develop their skills related to front-end website development. |  |  |  |
| HTML and CSS | Required | 3 units | Winter 2023 |

## Course Description:

In this course, there is an in-depth focus on required knowledge and skills in HTML and CSS so that students will feel comfortable in their website development work. Students will learn and apply industry-recognized techniques to make a visually appealing, functional, and interactive website.

| Javascript and Frameworks | Required | 3 units | Winter 2023 or <br> Spring 2023 |
| :--- | :--- | :--- | :--- |

## Course Description:

The use of JavaScript and associated frameworks is the basis of this course so that students become proficient in the programming language. Students will develop a mobile-first design, add interactivity to a website, and make their websites functional for future use by adding key features to their pages, including e-commerce applications.

| CONTINUING |
| :--- |
| EDUCATION |
| Department \& Program Information (complete all fields):  <br> Program Name: Back-End Development <br> Academic Credential: Certificate of Professional Learning |
| Name of Representative: |
| Effective Date: |
| Dathan Cheney, Program Manager |


|  | - Exemplification of the knowledge, skills, attitudes and behaviours required to work and collaborate with people from different cultural backgrounds and to develop effective personal management skills. |
| :---: | :---: |
| Meeting Learning Objectives: | All course learning outcomes in the program will be mapped to the overall program objectives. The delivery format and teaching methods are structured to have a maximum effect on achieving the learning objectives. |
| Program Admission Requirements and Prerequisites | In compliance with the Certificates and Diploma, admission policy from Undergraduate Council, students who wish to enter the program should meet the following requirements based on their education and work experience: <br> 1. Be a mature student as defined in the Undergraduate Calendar of McMaster University; or be deemed an exceptional case by the Centre for Continuing Education <br> 2. English Language Proficiency requirements: Completion of TOEFL exam with a minimum acceptable IBT score of 86 overall with a minimum score of 20 on each of the four components (Reading, Writing, Speaking, Listening), valid for 2 years <br> 3. Completion of the Front-End Development Certificate of Professional Learning or equivalent is required. <br> 4. Students are recommended to have completed the UX/UI Design Certificate of Professional Learning before the start of the program, but it is not required. |
| Program Completion Requirements: | Students who complete all three Back-End Development courses ( 9 units) will be granted a Certificate of Professional Learning in Back-End Development. |
| Program Delivery Format: | Courses will be delivered online. The online delivery formats will include instructor lectures and/or presentations, group discussions, and individual and/or small group practical application activities. Each course will contain 39 hours of content delivered over 12 weeks. |
| Student Evaluations (Grading Process): | Student evaluation will be based on application activities, individual or group projects, tests/quizzes, class participation, or a combination thereof. Where appropriate, evaluations will be structured to evaluate participants' level of competency in achieving overall learning objectives. |
| Course Evaluation: | For each course, students will complete an evaluation to assess content, delivery, materials, method of evaluation and instruction. |
| Course Instruction: | Instructors for courses will be selected from a pool of qualified |


|  | external professionals. In compliance with McMaster's Senate and Undergraduate Council Guidelines for Certificates and Diplomas, selection will be based on academic background and/or experience within the field. Instructors must have a Master's Degree (or equivalent) and significant professional experience and teaching within the field. |  |  |
| :---: | :---: | :---: | :---: |
| Program Advan Standing: | One transfer credit ( 3 units) will be accepted into this program. Students will need to have obtained a minimum grade of $C+$ in each course transferred. The courses must have been taken at a recognized post-secondary institution in the last 5 years. |  |  |
| Statement of Financial Viability: |  |  |  |
| I have reviewed the business case and financial projections which include enrolment projections and costs. Sources of revenue for this program include tuition and supplementary fees (MAPS). Expenses are typical and include significant upfront development and marketing costs, as well as typical ongoing delivery costs (such as payment of facilitators, honoraria for other guest facilitators, materials, advertising and administration). <br> Lorraine Carter, Director, McMaster Continuing Education |  |  |  |
| Statement of Administrative Responsibilities: |  |  |  |
| Statement of Faculty Alignment: <br> The staffing and systems infrastructure to support the following functions already exists within Continuing Education. Costs will be fully covered by tuition, except the first year of the program, when the startup will be subsidized by Continuing Education. <br> Continuing Education program responsibilities: <br> - budget development and monetary responsibilities <br> - program and course development <br> - course registrations/administration <br> - supervision of instructors to ensure all required policies and practices are adhered to and course are taught according to program requirements and standards <br> - Marketing and Promotions <br> The Faculty of Humanities will act as an academic liaison and is charged with the responsibility of ongoing academic review and assessment of the curriculum. The Faculty's letter of support is included at the end of this document. |  |  |  |
| Listing of Courses: |  |  |  |
| Course Name | Required/Elective | Unit Value | Term |
| Back-End Development | Required | 3 units | Fall 2022 |
| Course Description: <br> In this course, students will learn about the purpose of back-end development and how servers, databases and the code that makes them drive web applications. Students will be given opportunities to apply their knowledge through case study scenarios which will enable development of their knowledge of the complex structure of a website. Students will |  |  |  |

also examine current development systems like Amazon Web Services and e-commerce sites to better understand how their systems align with the future of website development.

| Interactivity and <br> Databases | Required | 3 units | Winter 2023 |
| :--- | :--- | :--- | :--- |

Course Description:
In this course, students will learn about the structure of database systems within a website and how their code will impact the interactivity with that database system. Students will learn how to set up and configure a database, how information is queried from the database, how systems work with the front-end of a website, the difference in database capability and the structured query language (SQL).

| Advanced Javascript <br> through Node.JS | Required | 3 units | Spring 2023 |
| :--- | :--- | :--- | :--- |

Course Description:
Students will deepen their understanding of the JavaScript system and apply their knowledge through developing the back-end of a website using Node.JS. During this course, students will learn to develop their application programming interfaces (APIs), Lambda, and apply their knowledge by developing foundational code that will allow users to take action on any website.

## Report to Undergraduate Council <br> from the <br> Curriculum and Admissions Committee

## FOR APPROVAL

I Curriculum Revisions for Inclusion in the 2022-2023 Undergraduate Calendar
At the meetings held on November 29 and November 30, 2021, and on January 11, 2022, the Undergraduate Council Curriculum and Admissions Committee approved, for recommendation to Undergraduate Council, the following curriculum revisions for inclusion in the 2022-2023 Undergraduate Calendar.

Arts \& Science Program<br>Faculty of Engineering<br>Faculty of Health Sciences<br>Faculty of Humanities<br>Faculty of Science<br>Faculty of Social Sciences<br>Glossary, General Academic Regulations

It is now recommended,
Motion 1:
that the Undergraduate Council approve, for recommendation to Senate, the establishment of the Combined Honours Program, Arts \& Science and Sustainable Chemistry for inclusion in the 2022-2023 Undergraduate Calendar, recommended by the Arts \& Science Program, and set out in the attached.

Motion 2:
that the Undergraduate Council approve the establishment of the new Interdisciplinary Minor in Latin American and Latinx Studies for inclusion in the 2022-2023 Undergraduate Calander, recommended by the Arts \& Science Program, and set out in the attached.

Motion 3:
that the Undergraduate Council approve, for recommendation to Senate, the move of the Honours Biochemistry program from the Faculty of Science to the Faculty of Health Sciences, and the change in degree designation for the program from Honours B.Sc. to Honours B.H.Sc., for inclusion in the 2022-2023 Undergraduate Calendar, as recommended by the Faculty of Health Sciences, and set out in the attached.

Motion 4:
that the Undergraduate Council approve, for recommendation to Senate, the move of the Honours Biochemistry - Biomedical Research Specialization program, from the Faculty of

Science to the Faculty of Health Sciences, and the change in degree designation for the program from Honours B.Sc. to Honours B.H.Sc., for inclusion in the 2022-2023 Undergraduate Calendar, as recommended by the Faculty of Health Sciences, and set out in the attached.

Motion 5:
that the Undergraduate Council approve, for recommendation to Senate, the move of the Honours Biochemistry- Biomedical Research Specialization Co-op program from the Faculty of Science to the Faculty of Health Sciences, and the change in degree designation for the program from Honours B.Sc. to Honours B.H.Sc., for inclusion in the 2022-2023 Undergraduate Calendar, as recommended by the Faculty of Health Sciences, and set out in the attached.

Motion 6:
that the Undergraduate Council approve, for recommendation to Senate, the establishment of the Honours Bachelor of Science in Biology - Physiology Core program for inclusion in the 2022-2023 Undergraduate Calendar, as recommended by the Faculty of Science, and set out in the attached.

Motion 7:
that the Undergraduate Council approve, for recommendation to Senate, the establishment of the Honours Bachelor of Science in Molecular Biology and Genetics Core program, for inclusion in the 2022-2023 Undergraduate Calendar, as recommended by the Faculty of Science, and set out in the attached.

Motion 8:
that the Undergraduate Council approve, for recommendation to Senate, the move of the Honours Biochemistry program from the Faculty of Science to the Faculty of Health Sciences, and the change in degree designation for the program from Honours B.Sc. to Honours B.H.Sc., for inclusion in the 2022-2023 Undergraduate Calendar, as recommended by the Faculty of Science, and set out in the attached.

Motion 9:
that the Undergraduate Council approve, for recommendation to Senate, the move of the Honours Biochemistry - Biomedical Research Specialization program, from the Faculty of Science to the Faculty of Health Sciences, and the change in degree designation for the program from Honours B.Sc. to Honours B.H.Sc., for inclusion in the 2022-2023 Undergraduate Calendar, as recommended by the Faculty of Science, and set out in the attached.

## Motion 10:

that the Undergraduate Council approve, for recommendation to Senate, the move of the Honours Biochemistry- Biomedical Research Specialization Co-op program from the Faculty of Science to the Faculty of Health Sciences, and the change in degree designation for the program from Honours B.Sc. to Honours B.H.Sc., for inclusion in the 2022-2023 Undergraduate Calendar, as recommended by the Faculty of Science, and set out in the attached.

Motion 11:
that the Undergraduate Council approve, for recommendation to Senate, the change in
name of the Honours Mathematics and Statistics - Mathematics Sub-plan program to the Honours Mathematics and Statistics - Mathematics Specialization, effective September 2023, as recommended by the Faculty of Science, and set out in the attached.

Motion 12:
that the Undergraduate Council approve, for recommendation to Senate, the change in name of the Honours Mathematics and Statistics - Mathematics Sub-plan Co-op program to the Honours Mathematics and Statistics - Mathematics Specialization Co-op, effective September 2023, as recommended by the Faculty of Science, and set out in the attached.

Motion 13:
that the Undergraduate Council approve, for recommendation to Senate, the change in name of the Honours Mathematics and Statistics - Statistics Sub-plan program to the Honours Mathematics and Statistics - Statistics Specialization, effective September 2023, as recommended by the Faculty of Science, and set out in the attached.

## Motion 14:

that the Undergraduate Council approve, for recommendation to Senate, the change in name of the Honours Mathematics and Statistics - Statistics Sub-plan Co-op program to the Honours Mathematics and Statistics - Statistics Specialization Co-op, effective September 2023, as recommended by the Faculty of Science, and set out in the attached.

Motion 15:
that the Undergraduate Council approve the establishment of the Minor in Sustainable Chemistry, for inclusion in the 2022-2023 Undergraduate Calander, recommended by the Faculty of Science, and set out in the attached.

## Motion 16:

that the Undergraduate Council approve, for recommendation to Senate, the establishment of the Honours Bachelor of Science in Integrated Science with a Concentration in Sustainable Chemistry program, for inclusion in the 2022-2023 Undergraduate Calendar, as recommended by the Faculty of Science, and set out in the attached.

Motion 17:
that the Undergraduate Council approve the name change of the Minor in Astronomy to the Minor in Astrophysics for inclusion in the 2022-2023 Undergraduate Calander, recommended by the Faculty of Science, and set out in the attached.

Motion 18:
that the Undergraduate Council approve the establishment of the Minor in Medical and Biological Physics for inclusion in the 2022-2023 Undergraduate Calander, recommended by the Faculty of Science, and set out in the attached.

Motion 19:
that the Undergraduate Council approve, for recommendation to Senate, the change in name of the Combined Honours Labour Studies and Another Subject program to the Combined Honours Work and Labour Studies and Another Subject program, effective September 2022, as recommended by the Faculty of Social Sciences, and set out in the
attached.
Motion 20:
that the Undergraduate Council approve, for recommendation to Senate, the change in name of the Honours Labour Studies program to the Honours Work and Labour Studies program, effective September 2022, as recommended by the Faculty of Social Sciences, and set out in the attached.

Motion 21:
that the Undergraduate Council approve, for recommendation to Senate, the change in name of the Labour Studies program to the Work and Labour Studies program, effective September 2022, as recommended by the Faculty of Social Sciences, and set out in the attached.

Motion 22:
that the Undergraduate Council approve the change in name of the Minor in Labour Studies to the Minor in Work and Labour Studies, effective September 2022, as recommended by the Faculty of Social Sciences, and set out in the attached.

Motion 23:
that the Undergraduate Council approve, for recommendation to Senate, revisions to the Glossary and General Academic Regulations, for inclusion in the 2022-2023
Undergraduate Calendar, as recommended by the Office of the Registrar, and set out in the attached.

Motion 24:
that the Undergraduate Council approve curriculum revisions for inclusion in the 20222023 Undergraduate Calendar, as set out in the attached.

Undergraduate Council
January 25, 2022

## ARTS \& SCIENCE PROGRAM

## UNDERGRADUATE CURRICULUM REPORT TO

## UNDERGRADUATE COUNCIL

FOR THE 2022-2023

UNDERGRADUATE CALENDAR

17 November 2021

## REPORT TO SENATE

## ARTS \& SCIENCE PROGRAM SUMMARY OF MAJOR CURRICULUM CHANGES FOR 2022-2023

This report highlights substantive changes being proposed. For a complete review of all changes, please refer to the November 2021 Arts \& Science Program Report to Undergraduate Council for changes to the 2022-2023 Undergraduate Calendar, found at https://artsci.mcmaster.ca/app/uploads/2021/11/2022-23-Arts-Science-Undergraduate-Curriculum-Report-FINAL-17-Nov.-2021.pdf.

## NEW PROGRAMS:

## COMBINED HONOURS PROGRAM, ARTS \& SCIENCE AND SUSTAINABLE CHEMISTRY

Rationale: This new combined honours option, developed jointly with the Department of Chemistry and Chemical Biology (Faculty of Science), has been added to the list of Arts \& Science combined honours programs. It aligns with the Dept. of Chemistry and Chemical Biology's introduction of a combined honours program in Sustainable Chemistry.

## Honours Arts \& Science and Sustainable Chemistry

 ADMISSIONCompletion of Arts \& Science I with a grade point average of at least 6.0 and an average of at least 6.0 in CHEM 1A03, 1AA3.

## NOTES:

1. See additional notes in the Undergraduate Calendar, Faculty of Science, Department of Chemistry and Chemical Biology.
2. Nine units from the following list are required: ARTSSCI 3A06, 3B03, 3BB3, 3RL3/3S03. Students who choose to take ARTSSCI 3RL3 or 3S03 may only use one of those courses towards satisfying 3 units of the requirement. Students are encouraged, however, to take additional units from this list as an elective. 3. Six units of Upper-Level Inquiry beyond Level I are required. Additional units of Upper-Level Inquiry may be included as an elective with the permission of the Director. Upper-Level Inquiry courses are: ARTSSCI 3CL3, 3CU3, 3EH3, 3GJ3, 3TR3, 4CB3, 4CD3, 4CF3, 4CI3, 4CP3, 4CT3, 4DS3, 4EP3, 4HS3, 4ST3, 4VC3.
3. Students are recommended to take CHEM 2SC3 in Level II when possible.
4. 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. Such students are recommended to take CHEM 4G12 for their thesis.
5. Students who select CHEM 4G12 will take six units of Electives; students who select ARTSSCI 4A06, 4C06, or CHEM 4RP6 will take twelve units of Electives.

## COURSE LIST 1

CHEM 2A03, 2II3, 2LB3, 2OD3, 2OG3, 2P03, 3AA3, 3EP3 A/B S, 3I03, 3II3, 3LA3, 3OA3, 3PA3, 3PC3, 3RC3, 3RP3, 4AA3, 4D03, 4IA3, 4IB3, 4IC3, 4II3, 4OA3, 4OB3, 4PB3, 4Q03, 4RP6 A/B S, 4W03; CHEMBIO 3BM3, 3OA3, 3ОB3, 3P03, 4A03, 4OA3, 40B3, 4Q03

## COURSE LIST 2

BIOLOGY 3EI3, 3ET3; EARTHSC 2GG3, 3CC3, 4CC3; ENVIRSC 2B03, 2C03, 2Q03, 2WW3, 3O03, 4EA3, 4N03; ENVSOCTY 2EI3, 3EC3, 3EE3, 3ER3, 4HH3; HTHSCI 4MS3; LIFESCI 2X03; POLSCI 3GC3; SUSTAIN 2SO3, 3SO3

## REQUIREMENTS

120 units total (Levels I-IV), of which 48 units may be Level I
24 units ARTSSCI 1A03, 1AA3, 1B03, 1BB3, 1C06, 1D06
6 units CHEM 1A03, 1AA3
18 units ARTSSCI 2A06, 2D06, 2E03, 2R03
9 units from ARTSSCI 3A06, 3B03, 3BB3, one of 3RL3/3S03 (see Note 2)
6 units Upper-Level Inquiry (see Note 3)
3 units CHEM 2SC3 (see Note 4)
3 units CHEM 2Q03
12 units from CHEM 2A03, 2II3, 2LB3, 2OD3, 2OG3, 2P03
3 units from CHEM 3SC3, CHEM 4SC3
6-12 units: one of ARTSSCI 4A06, 4C06, CHEM 4RP6, or 4G12 (see Note 5 and Note 6)
9 units from Course List 1
3 units from Course List 2
6 units from Course List 1 or Course List 2
6-12 units Electives (see Note 5 and Note 6)
PROGRAM CLOSURES:
N/A
MAJOR REVISIONS:
N/A

## REPORT TO UNDERGRADUATE COUNCIL

## ARTS \& SCIENCE PROGRAM <br> SUMMARY OF CURRICULUM CHANGES FOR 2022-2023

This report highlights substantive changes being proposed. For a complete review of all changes, please refer to the November 2021 Arts \& Science Program Report to Undergraduate Council for changes to the 2022-2023 Undergraduate Calendar, found at https://artsci.mcmaster.ca/app/uploads/2021/11/2022-23-Arts-Science-Undergraduate-Curriculum-Report-FINAL-17-Nov.-2021.pdf.

## ARTS \& SCIENCE PROGRAM

- Minor changes to program requirements reflect the addition and deletion of courses
- 4 new courses
- 4 deleted courses


## INTERSESSION

- 1 revised course
- 5 new courses


## INTERDISCIPLINARY MINOR IN SUSTAINABILITY

- Housekeeping
- 13 new courses



## REPORT TO SENATE

ARTS \& SCIENCE PROGRAM SUMMARY OF MAJOR CURRICULUM CHANGES FOR 2022-2023

This report highlights substantive changes being proposed. For a complete review of all changes, please refer to the January 2022 Arts \& Science Program Addendum to the Undergraduate Council Report for changes to the 2022-2023 Undergraduate Calendar, found at https://artsci.mcmaster.ca/app/uploads/2022/01/2022-23-Arts-Science-Undergraduate-Curriculum-Addendum-FINAL-18-Jan.-2022.pdf.

## NEW PROGRAMS:

## N/A

PROGRAM CLOSURES:
N/A
MAJOR REVISIONS:
N/A

## REPORT TO UNDERGRADUATE COUNCIL

## ARTS \& SCIENCE PROGRAM SUMMARY OF CURRICULUM CHANGES FOR 2022-2023

This report highlights substantive changes being proposed. For a complete review of all changes, please refer to the January 2022 Arts \& Science Program Addendum to the Undergraduate Council Report for changes to the 2022-2023 Undergraduate Calendar, found at https://artsci.mcmaster.ca/app/uploads/2022/01/2022-23-Arts-Science-Undergraduate-Curriculum-Addendum-FINAL-18-Jan.-2022.pdf.

ARTS \& SCIENCE PROGRAM
N/A

INTERDISCIPLINARY MINOR IN SUSTAINABILITY
N/A

INTERSESSION

- New Interdisciplinary Minor in Latin American and Latinx Studies


## FACULTY OF ENGINEERING

## UNDERGRADUATE CURRICULUM REPORT TO UNDERGRADUATE COUNCIL

FOR THE 2022-23CALENDAR

Approved - November 30, 2021 Faculty Meeting

## FACULTY OF ENGINEERING REPORT TO SENATE SUMMARY OF MAJOR CURRICULUM CHANGES FOR 2022-23

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 2022-23 Engineering Undergraduate Curriculum Report.docx on MacDrive:
https://macdrive.mcmaster.ca/d/b2c2847e6ac743488662/

## NEW PROGRAMS

None

## PROGRAM CLOSURES

None

## MAJOR REVISIONS

## FACULTY OF ENGINEERING

## REPORT TO UNDERGRADUATE COUNCIL

 SUMMARY OF CURRICULUM CHANGES FOR 2022-23This 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 2022-23Undergraduate Calendar, found at:
https://macdrive.mcmaster.ca/d/b2c2847e6ac743488662/

## FACULTY OF ENGINEERING (General)

- Revisions in Faculty information

Engineering

- Three new courses
- Five course description changes
- Three course deletions

CHEMICAL ENGINEERING

- Revision of program requirements
- Fifteen course description changes
- Three courses unit change
- Two course deletions

CIVL ENGINEERING

- Revision of program requirements
- Thirty-three course description changes
- Two course deletions


## COMPUTING AND SOFTWARE

- Computer Science
- Revision of program requirements
- Seventeen course description changes
- Four course deletions
- Three new courses
- Mechatronics
- Revision of program requirements
- Six course description changes
- One new courses
- Software Engineering
- Revision of program requirements
- Fourteen course description changes
- One course deletion


## ELECTRICAL AND COMPUTER ENGINEERING

- Revision of program requirements
- Twenty-eight course description changes
- One new courses
- One courses unit change
- Four course deletions


## ENGINEERING PHYSICS

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


## ENGINEERING AND MANAGEMENT

- Three course description changes
- Revision of program requirements


## Minor in Innovation

- Six course description changes
- Revision to the minor requirements


## ENGINEERING AND SOCIETY

- One new courses
- Fourteen course description changes


## MATERIALS ENGINEERING

- Nine course descriptions revisions
- Two new course
- Four course deletions
- Three new courses


## MECHANICAL ENGINEERING

- Eight course description revisions
- One new course
- One course deletion


## W. BOOTH SCHOOL OF ENGINEERING PRACTICE AND TECHONOLOGY

- 4 - year programs
- Minor revision of program requirement
- Degree Completion programs (DCP)
- Minor revision of program requirements
- Software Engineering Technology course grades changing to Pass/Fail
- Forty-six description changes
- Two course deletions
- One course level changes
- Eighteen 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
- Four course description changes


## FACULTY OF ENGINEERING

## UNDERGRADUATE CURRICULUM REPORT TO UNDERGRADUATE COUNCIL

FOR THE 2022-23CALENDAR

Addenda approved January 4, 2022 Faculty Meeting

## FACULTY OF ENGINEERING REPORT TO SENATE SUMMARY OF MAJOR CURRICULUM CHANGES FOR 2022-23

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 2022-23 Engineering Undergraduate Curriculum Report.docx on MacDrive:
https://macdrive.mcmaster.ca/d/b2c2847e6ac743488662/

## NEW PROGRAMS

None

## PROGRAM CLOSURES

None

## MAJOR REVISIONS

## FACULTY OF ENGINEERING

## REPORT TO UNDERGRADUATE COUNCIL

 SUMMARY OF CURRICULUM CHANGES FOR 2022-23This 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 2022-23Undergraduate Calendar, found at:
https://macdrive.mcmaster.ca/d/b2c2847e6ac743488662/

## INTEGRATED BIOMEDICAL ENGINEERING HEALTH SCIENCES

- Revision of program requirements - Each of the department specific Engineering and Biomedical programs are listed under each department
- Four course description changes
- One course deletion
- Eight new courses


## FACULTY OF HEALTH SCIENCES

UNDERGRADUATE CURRICULUM REPORT

TO UNDERGRADUATE COUNCIL CURRICULUM AND ADMISSIONS COMMITTEE

FOR THE 2022-2023 CALENDAR

Friday November 26, 2021

HSEC approved November 10, 2021
Faculty Executive Council approved November 24, 2021

## REPORT TO SENATE

## FACULTY OF HEALTH SCIENCES SUMMARY OF CURRICULUM CHANGES FOR 2022-2023

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 2022-2023 Undergraduate Calendar, found at:
https://macdrive.mcmaster.ca/f/54d408da69f546259a3e/
NEW PROGRAMS - 2

1. NEW PROGRAMS:

Biochemistry and Biomedical Sciences

### 1.1. Notes Applicable to all Honours Biochemistry Programs

1. In addition to the Honours Biochemistry program, the Department offers a Specialization in Biomedical Research. The Honours program has a specified set of basic requirements and a wide choice of electives (including those from outside the Faculty of Health Sciences), allowing for interdisciplinary studies or the opportunity to complete a Minor in another subject. Alternatively, students may wish to apply to the Biomedical Research Specialization which is strongly recommended for students intending to pursue graduate studies.
2. Admission to the Honours Biochemistry program is limited. Selection is based on academic achievement but requires, as a minimum, completion of the Level I requirements listed below.
3. Admission to the Honours Biochemistry - Biomedical Research Specialization program is limited. Admission to this program begins at Level III and requires, as a minimum, completion of Level II Honours Biochemistry and completion of a supplementary application.
4. Transfer between programs is possible at any time, subject to satisfying the admission requirements and availability of space.
5. Students considering graduate studies in Biochemistry are recommended to complete one of BIOCHEM 4F09 A/B or $4 \mathrm{~T} 15 \mathrm{~A} / \mathrm{B}$.

### 1.2 Honours Biochemistry (B.H.Sc.)

Admission
Enrolment in this program is limited and possession of the published minimum requirements does not guarantee admission. Admission is by selection but requires, as a minimum, completion of any Level I program with a Grade Point Average of at least 5.0 including:
6 units

- BIOLOGY 1A03 - Cellular and Molecular Biology
- BIOLOGY 1M03 - Biodiversity, Evolution and Humanity

6 units

- CHEM 1A03 - Introductory Chemistry I
- CHEM 1AA3 - Introductory Chemistry II 3 units from
- MATH 1 A03 - Calculus For Science I
- MATH 1LS3 - Calculus for the Life Sciences I

3 units from

- PHYSICS 1A03- Introductory Physics
- PHYSICS 1C03 - Physics for the Chemical and Physical Sciences

6 units from

- the Science I Course List

Note
A grade of at least C+ in four of BIOLOGY 1A03, 1M03, CHEM 1A03, 1AA3 and either MATH 1 A 03 or 1LS3 is required.
Program Notes

1. There are Level II and III prerequisites for many Level III and IV courses. The prerequisites should be considered when choosing Level II and III courses.
2. Both CHEMBIO 2A03 and 2P03 are highly recommended for students interested in pursuing an undergraduate thesis or graduate studies in biophysical chemistry.
3. Students who do not complete a research, thesis, or advanced biochemistry laboratory course (BIOCHEM 3A03, 3LA3, 3R06 A/B, 4F09 A/B, $4 \mathrm{~T} 15 \mathrm{~A} / \mathrm{B}, 4 \mathrm{Z} 03$ ) must complete BIOCHEM 4C03.
Biochemistry Course List

- ANTHROP 2U03 - Plagues and People
- ANTHROP 3BD3 - The Black Death
- BIOCHEM 3BP3 - Practical Bioinformatics in the Genomics Era
- BIOCHEM 3CB3 - Emerging Discovery in Cell Biology
- BIOCHEM 3H03-Clinical Biochemistry
- BIOCHEM 3MI3 - Microbial Interactions
- BIOCHEM 3Z03 - Structural Determination and Analysis of Macromolecules
- BIOCHEM 4H03 - Biotechnology and Drug Discovery
- BIOCHEM 4J03 - Immunological Principles in Practice
- BIOCHEM 4M03 - Cellular and Integrated Metabolism
- BIOCHEM 4N03 - Molecular Membrane Biology
- BIOCHEM 4Q03 - Biochemical Pharmacology
- BIOCHEM 4S03 - Introduction to Molecular Biophysics
- BIOLOGY 2B03 - Cell Biology
- BIOLOGY 2EE3 - Introduction to Microbiology and Biotechnology
- BIOMEDDC 2C03-Exploring Careers in Biomedical Sciences
- BIOMEDDC 2W03 - Write Right for Your Science: Scientific Writing for the Biomedical Sciences
- CHEM 2A03 - Quantitative Chemical Analysis
- CHEM 2P03 - Applications of Physical Chemistry
- CHEMBIO 2A03 - Introduction to Bio-Analytical Chemistry
- CHEMBIO 2P03 - Physical Chemistry Tools for Chemical Biology
- CHEMBIO 3OA3 - Organic Mechanistic Tools for Chemical Biology
- HTHSCI 3 I03 - Introductory Immunology
- HTHSCI 3K03 - Introductory Virology
- MOLBIOL 3003 - Microbial Genetics


## 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
12 units

- BIOCHEM 2B03 - Nucleic Acid Structure and Function
- BIOCHEM 2BB3 - Protein Structure and Enzyme Function
- BIOCHEM 2L06 A/B - Inquiry in Biochemical Techniques

3 units

- BIOLOGY 2C03-Genetics

3 units from

- the Biochemistry Course List (See Program Note 2 above.)

6 units

- CHEM 2OA3 - Organic Chemistry I
- CHEM 2OB3 - Organic Chemistry II

6 units

- Electives

Level III: 30 Units
3 units

- BIOCHEM 3D03 - Metabolism and Regulation

3 units

- BIOMEDDC 3WR3 - Biochemistry and Biomedical Scientific Writing: Right your Write

9 units from

- the Biochemistry Course List (See Program Note 2 above.)

3 units

- STATS 2B03 - Statistical Methods for Science

12 units

- Electives

Level IV: 30 Units
3 units from

- Level IV Biochemistry courses, excluding:
- BIOCHEM 4F09 A/B

BIOCHEM 4T15 A/B
BIOCHEM 4Z03
9 units from

- the Biochemistry Course List (See Program Note 2 above.)

6-15 units from

- Levels III, IV Biochemistry, Biology, Chemical Biology, Chemistry, Molecular Biology courses
- HTHSCI 3I03 - Introductory Immunology
- HTHSCI 3K03 - Introductory Virology
- HTHSCI 4II3 - Advanced Concepts in Immunology
- HTHSCI 4003 - Principles of Virus Pathogenesis
which must include one of:
- BIOCHEM 3A03 - Biochemical Research Practice
- BIOCHEM 3LA3 - Advanced Biochemistry Techniques
- BIOCHEM 3R06 A/B S - Research Project
- BIOCHEM 4C03 - Inquiry in Biochemistry
- BIOCHEM 4F09 A/B - Senior Thesis
- BIOCHEM 4T15 A/B - Senior Thesis
- BIOCHEM 4Z03 - Senior Project (See Program Note 3 above)
3-12 units
- Electives

Requirements for Students Who Entered the Honours B.Sc. Biochemistry program prior to September 2022 and selected to transfer into the Honours B.H.Sc program
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
12 units

- BIOCHEM 2B03 - Nucleic Acid Structure and Function
- BIOCHEM 2BB3 - Protein Structure and Enzyme Function
- BIOCHEM 2L06 A/B - Inquiry in Biochemical Techniques

3 units

- BIOLOGY 2C03-Genetics

3 units from

- the Biochemistry Course List (See Program Note 2 above.)

6 units

- CHEM 2OA3 - Organic Chemistry I
- CHEM 2OB3 - Organic Chemistry II

6 units

- Electives

Level III: 30 Units
3 units

- BIOCHEM 3D03 - Metabolism and Regulation

12 units from

- the Biochemistry Course List (See Program Note 2 above.)

3 units

```
- STATS 2B03 - Statistical Methods for Science
12 units
- Electives
Level IV: 30 Units
3 units from
- Level IV Biochemistry courses, excluding:
- BIOCHEM 4F09 A/B
- BIOCHEM 4T15 A/B
- BIOCHEM 4Z03
```

9 units from

- the Biochemistry Course List (See Program Note 2 above.)


## 6-15 unitsfrom

- Levels III, IV Biochemistry, Biology, Chemical Biology, Chemistry, Molecular Biology courses
- HTHSCI 3I03 - Introductory Immunology
- HTHSCI 3K03 - Introductory Virology
- HTHSCI 4II3 - Advanced Concepts in Immunology
- HTHSCI 4O03 - Principles of Virus Pathogenesis
which must include one of:
- BIOCHEM 3A03 - Biochemical Research Practice
- BIOCHEM 3LA3 - Advanced Biochemistry Techniques
- BIOCHEM 3R06 A/B S - Research Project
- BIOCHEM 4C03 - Inquiry in Biochemistry
- BIOCHEM 4F09 A/B - Senior Thesis
- BIOCHEM 4T15 A/B - Senior Thesis
- BIOCHEM 4Z03 - Senior Project (See Program Note 3 above)


## 3-12 units

- Electives

RATIONALE: 1.1 \& 1.2: Effective, September 2022, the Honours Biochemistry, program will be administered by the Faculty of Health Sciences. Initially, while the curriculum will not change substantively, the degree will be amended to the Hons B.H.Sc. Appropriate notifications will be included in the Faculty of Science section of the Calendar to ensure current Level Level 1 students, interested in applying to the program for September 2022, will be informed that the program will be available as both an Hons.B.Sc. and Hons.B.H.Sc. Students interested in the latter, will be directed to the Faculty of Health Sciences section of the Calendar for admission and program requirements. The existing Hons.B.Sc. Biochemistry program will be phased out, beginning September 2023. All in-course students currently enrolled in Level 2 or 3 will be given the option to remain in that program through to graduation or transfer to the Hons.B.H.Sc. program, effective September 2022. Final year students, scheduled to convocate in June 2022, will graduate with the Hons.B.Sc. degree at the Faculty of Science Convocation.

Over the next few years, the Hons.B.H.Sc. program will see a constructive alignment of the curriculum to better reflect the Faculty expertise and research, housed in the Faculty of Health Sciences.

### 1.3. Honours Biochemistry - Biomedical Research Specialization (B.H.Sc.)

## Admission

Enrolment in this program is limited and possession of the published minimum requirements does not guarantee admission. Admission is by selection and is based on completion of the supplementary application by the stated deadline and academic achievement, but requires, as a minimum, completion of Level II Honours Biochemistry with a Grade Point Average of at least 5.0 and completion of the following courses:

## 12 units

- BIOCHEM 2B03 - Nucleic Acid Structure and Function
- BIOCHEM 2BB3 - Protein Structure and Enzyme Function
- BIOCHEM 2L06 A/B - Inquiry in Biochemical Techniques

3 units

- BIOLOGY 2C03 - Genetics

3 units from

- the Biochemistry Course List (See Program Note 4 below.)

6 units

- CHEM 2OA3 - Organic Chemistry I
- CHEM 2OB3 - Organic Chemistry II

Program Notes

1. Registration in an Honours Biochemistry program does not guarantee access to all courses. Some courses have program restrictions. There are Level II and III prerequisites for many Level III and IV courses. The prerequisites should be considered when choosing Level II and III courses.
2. Completion of one of BIOCHEM $4 \mathrm{~F} 09 \mathrm{~A} / \mathrm{B}, 4 \mathrm{~T} 15 \mathrm{~A} / \mathrm{B}$ or 4 Z 03 is required in Level IV.
3. A 'research intensive' option, available to students registered in this Specialization, offers additional laboratory research experience through completion of BIOCHEM 3R06 A/B S and $4 \mathrm{~T} 15 \mathrm{~A} / \mathrm{B}$. This option is intended for students planning to pursue graduate studies or a career in research and development. Enrolment in the courses is limited and admission is by selection.
4. Both CHEMBIO 2A03 and 2P03 are highly recommended for students interested in pursuing an undergraduate thesis or graduate studies in biophysical chemistry.

## Biochemistry Course List

- ANTHROP 2U03 - Plagues and People
- ANTHROP 3BD3 - The Black Death
- BIOCHEM 3BP3 - Practical Bioinformatics in the Genomics Era
- BIOCHEM 3CB3 - Emerging Discovery in Cell Biology
- BIOCHEM 3H03 - Clinical Biochemistry
- BIOCHEM 3MI3 - Microbial Interactions
- BIOCHEM 3Z03 - Structural Determination and Analysis of Macromolecules
- BIOCHEM 4H03 - Biotechnology and Drug Discovery
- BIOCHEM 4J03 - Immunological Principles in Practice
- BIOCHEM 4M03 - Cellular and Integrated Metabolism
- BIOCHEM 4N03 - Molecular Membrane Biology
- BIOCHEM 4Q03 - Biochemical Pharmacology
- BIOCHEM 4S03 - Introduction to Molecular Biophysics
- BIOLOGY 2B03 - Cell Biology
- BIOLOGY 2EE3 - Introduction to Microbiology and Biotechnology
- BIOMEDDC 2C03 - Exploring Careers in Biomedical Sciences
- BIOMEDDC 2W03 - Write Right for Your Science: Scientific Writing for the Biomedical Sciences
- CHEM 2A03 - Quantitative Chemical Analysis
- CHEM 2P03 - Applications of Physical Chemistry
- CHEMBIO 2A03 - Introduction to Bio-Analytical Chemistry
- CHEMBIO 2P03 - Physical Chemistry Tools for Chemical Biology
- CHEMBIO 3OA3 - Organic Mechanistic Tools for Chemical Biology
- HTHSCI 3I03 - Introductory Immunology
- HTHSCI 3K03 - Introductory Virology
- MOLBIOL 3O03 - Microbial Genetics

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

- Completed prior to admission to the program

Level II: 30 Units
30 units

- Completion of Level II Honours Biochemistry

Level III: 30 Units
3 units

- BIOCHEM 3D03 - Metabolism and Regulation

3-6 units from

- BIOCHEM 3A03 - Biochemical Research Practice
- BIOCHEM 3LA3 - Advanced Biochemistry Techniques
- BIOCHEM 3R06 A/B S - Research Project

3 units

- BIOMEDDC 3WR3 - Biochemistry and Biomedical Scientific Writing: Right your Write

9 units from

- the Biochemistry Course List (See Program Note 4 above.)

3 units

- STATS 2B03 - Statistical Methods for Science

6-9 units

- Electives

Level IV: 30 Units
3 units from

- Level IV Biochemistry courses, excluding:

BIOCHEM 4F09 A/B
BIOCHEM 4T15 A/B
BIOCHEM 4Z03
9 units from

- the Biochemistry Course List (See Program Note 4 above.)

12-15 units from

- Levels III, IV Biochemistry, Biology, Chemical Biology, Chemistry, Molecular Biology courses
- HTHSCI 3I03 - Introductory Immunology
- HTHSCI 3K03 - Introductory Virology
- HTHSCI 4II3 - Advanced Concepts in Immunology
- HTHSCI 4O03 - Principles of Virus Pathogenesis
which must include one of:
- BIOCHEM 4F09 A/B - Senior Thesis
- BIOCHEM 4T15 A/B - Senior Thesis
- BIOCHEM 4Z03 - Senior Project (See Program Note 2 above.)
3-6 units
- Electives

Requirements for Students Who Entered the Honours B.Sc. in Biochemistry program Prior to
September 2022
120 units total (Levels I to IV), of which no more than 48 units may be Level I
Level I: 30 Units
30 units

- Completed prior to admission to the program

Level II: 30 Units
30 units

- Completion of Level II Honours Biochemistry

Level III: 30 Units
3 units

- BIOCHEM 3D03 - Metabolism and Regulation

3-6 units from

- BIOCHEM 3A03 - Biochemical Research Practice
- BIOCHEM 3LA3 - Advanced Biochemistry Techniques
- BIOCHEM 3R06 A/B S - Research Project

12 units from

- the Biochemistry Course List (See Program Note 4 above.)

3 units

- STATS 2B03 - Statistical Methods for Science

6-9 units

- Electives

Level IV: 30 Units
3 units from

- Level IV Biochemistry courses, excluding:

BIOCHEM 4F09 A/B
BIOCHEM 4T15 A/B
BIOCHEM 4Z03
9 units from

- the Biochemistry Course List (See Program Note 4 above.)

12-15 units from

- Levels III, IV Biochemistry, Biology, Chemical Biology, Chemistry, Molecular Biology courses
- HTHSCI 3I03 - Introductory Immunology
- HTHSCI 3K03 - Introductory Virology
- HTHSCI 4II3 - Advanced Concepts in Immunology
- HTHSCI 4O03 - Principles of Virus Pathogenesis
which must include one of:
- BIOCHEM 4F09 A/B - Senior Thesis
- BIOCHEM 4T15 A/B - Senior Thesis
- BIOCHEM 4Z03 - Senior Project (See Program Note 2 above.)
3-6 units
- Electives


### 1.4. Honours Biochemistry - Biomedical Research Specialization Co-op (B.H.Sc.) <br> Admission

Enrolment in this program is limited and possession of the published minimum requirements does not guarantee admission. 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 Biochemistry with a Grade Point Average of at least 5.0 and completion of the following courses:
12 units

- BIOCHEM 2B03 - Nucleic Acid Structure and Function
- BIOCHEM 2BB3 - Protein Structure and Enzyme Function
- BIOCHEM 2L06 A/B - Inquiry in Biochemical Techniques


## 3 units

- BIOLOGY 2C03 - Genetics

3 units from

- the Biochemistry Course List (See Program Note 6 below.)

6 units

- CHEM 2OA3 - Organic Chemistry I
- CHEM 2OB3 - Organic Chemistry II


## Program Notes

1. This is a five-level (year) co-op program which includes two eight-month work terms which must be spent in biochemistry related placements.
2. Students must be registered full-time and take a full academic workload, as prescribed by Level and Term.
3. Students are required to complete SCIENCE 2 C 00 prior to the Fall Term of Level III. Students are required to complete SCIENCE 3C00 before the first work placement.
4. Registration in an Honours Biochemistry program does not guarantee access to all courses. Some courses have program restrictions. There are Level II and III prerequisites for many Level III and IV courses. The prerequisites should be considered when choosing Level II and III courses.
5. Completion of one of BIOCHEM $4 \mathrm{~F} 09 \mathrm{~A} / \mathrm{B}, 4 \mathrm{~T} 15 \mathrm{~A} / \mathrm{B}$ or 4 Z 03 is required in Level IV.
6. Both CHEMBIO 2A03 and 2P03 are highly recommended for students interested in pursuing an undergraduate thesis or graduate studies in biophysical chemistry.
Biochemistry Course List

- ANTHROP 2U03 - Plagues and People
- ANTHROP 3BD3 - The Black Death
- BIOCHEM 3BP3 - Practical Bioinformatics in the Genomics Era
- BIOCHEM 3CB3 - Emerging Discovery in Cell Biology
- BIOCHEM 3H03-Clinical Biochemistry
- BIOCHEM 3MI3 - Microbial Interactions
- BIOCHEM 3Z03 - Structural Determination and Analysis of Macromolecules
- BIOCHEM 4H03 - Biotechnology and Drug Discovery
- BIOCHEM 4J03 - Immunological Principles in Practice
- BIOCHEM 4M03 - Cellular and Integrated Metabolism
- BIOCHEM 4N03 - Molecular Membrane Biology
- BIOCHEM 4Q03 - Biochemical Pharmacology
- BIOCHEM 4S03 - Introduction to Molecular Biophysics
- BIOLOGY 2B03 - Cell Biology
- BIOLOGY 2EE3 - Introduction to Microbiology and Biotechnology
- BIOMEDDC 2C03-Exploring Careers in Biomedical Sciences
- BIOMEDDC 2W03 - Write Right for Your Science: Scientific Writing for the Biomedical Sciences
- CHEM 2A03- Quantitative Chemical Analysis
- CHEM 2P03 - Applications of Physical Chemistry
- CHEMBIO 2A03 - Introduction to Bio-Analytical Chemistry
- CHEMBIO 2P03 - Physical Chemistry Tools for Chemical Biology
- CHEMBIO 3OA3 - Organic Mechanistic Tools for Chemical Biology
- HTHSCI 3I03 - Introductory Immunology
- HTHSCI 3K03 - Introductory Virology
- MOLBIOL 3003 - Microbial Genetics

Requirements For Students Who Enter in September 2022 or Prior
120 units total (Levels I to V), of which no more than 48 units may be Level I
Level I: 30 Units
30 units

- Completed prior to admission to the program

Level II: 30 Units
30 units
Completion of Level II Honours Biochemistry, including completion of:

- SCIENCE 2C00 - Skills for Career Success in Science (See Program Note 3 above.)
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:
3 units

- STATS 2B03 - Statistical Methods for Science

3 units

- BIOCHEM 3D03 - Metabolism and Regulation

3 units from

- Level III, IV Biochemistry, Biology, Chemical Biology, Chemistry, Molecular Biology courses
- HTHSCI 3I03 - Introductory Immunology
- HTHSCI 3K03 - Introductory Virology
- HTHSCI 4II3 - Advanced Concepts in Immunology
- HTHSCI 4003 - Principles of Virus Pathogenesis

3 units from

- the Biochemistry Course List (See Program Note 6 above.)

3 units

- Electives

1 course

- 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

- Level IV Biochemistry courses, excluding:

BIOCHEM 4F09
BIOCHEM 4T15 A/B
BIOCHEM 4Z03
9 units from

- the Biochemistry Course List (See Program Note 6 above.)

12-15 units from

- Levels III, IV Biochemistry, Biology, Chemical Biology, Chemistry, Molecular Biology courses
- HTHSCI 3 I03 - Introductory Immunology
- HTHSCI 3K03 - Introductory Virology
- HTHSCI 4II3 - Advanced Concepts in Immunology
- HTHSCI 4O03 - Principles of Virus Pathogenesis
which must include one of:
- BIOCHEM 4F09 A/B - Senior Thesis
- BIOCHEM 4T15 A/B - Senior Thesis
- BIOCHEM 4Z03 - Senior Project (See Program Note 5 above.)
3-6 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:
6 units from

- the Biochemistry Course List (See Program Note 6 above.)

6 units from

- Levels III, IV Biochemistry, Biology, Chemical Biology, Chemistry, Molecular Biology courses
- HTHSCI 3I03 - Introductory Immunology
- HTHSCI 3K03 - Introductory Virology
- HTHSCI 4II3 - Advanced Concepts in Immunology
- HTHSCI 4O03 - Principles of Virus Pathogenesis

3 units

- Electives


## Requirements (Effective September 2023)

120 units total (Levels I to V), of which no more than 48 units may be Level I
Level I: 30 Units
30 units

- Completed prior to admission to the program

Level II: 30 Units
30 units
Completion of Level II Honours Biochemistry, including completion of:

- SCIENCE 2C00 - Skills for Career Success in Science (See Program Note 3 above.)
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:
3 units

- STATS 2B03 - Statistical Methods for Science

3 units

- BIOCHEM 3D03 - Metabolism and Regulation

3 units from

- Level III, IV Biochemistry, Biology, Chemical Biology, Chemistry, Molecular Biology courses
- HTHSCI 3I03 - Introductory Immunology
- HTHSCI 3K03 - Introductory Virology
- HTHSCI 4II3 - Advanced Concepts in Immunology
- HTHSCI 4O03 - Principles of Virus Pathogenesis

3 units from

- the Biochemistry Course List (See Program Note 6 above.)

3 units

- Electives

1 course

- 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

- Level IV Biochemistry courses, excluding:
- BIOCHEM 4F09
- BIOCHEM 4T15 A/B
- BIOCHEM 4Z03

3 units

- BIOMEDDC 3WR3 - Biochemistry and Biomedical Scientific Writing: Right your Write 6 units from
- the Biochemistry Course List (See Program Note 6 above.)

12-15 units from

- Levels III, IV Biochemistry, Biology, Chemical Biology, Chemistry, Molecular Biology courses
- HTHSCI 3I03 - Introductory Immunology
- HTHSCI 3K03 - Introductory Virology
- HTHSCI 4II3 - Advanced Concepts in Immunology
- HTHSCI 4O03 - Principles of Virus Pathogenesis
which must include one of:
- BIOCHEM 4F09 A/B - Senior Thesis
- BIOCHEM 4T15 A/B - Senior Thesis
- BIOCHEM 4Z03 - Senior Project
(See Program Note 5 above.)
3-6 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:
6 units from

- the Biochemistry Course List (See Program Note 6 above.)

6 units from

- Levels III, IV Biochemistry, Biology, Chemical Biology, Chemistry, Molecular Biology courses
- HTHSCI 3I03 - Introductory Immunology
- HTHSCI 3K03 - Introductory Virology
- HTHSCI 4II3 - Advanced Concepts in Immunology
- HTHSCI 4O03 - Principles of Virus Pathogenesis

3 units

- Electives

Co-op Program Chart

|  | FALL TERM <br> (September to December) | WINTER TERM <br> (January to April) | SPRING/SUMMER <br> TERM <br> (May to August) |
| :--- | :---: | :---: | :---: |
| Level III | 15 units from <br> Academic Level III <br> and SCIENCE 3C00 | Work Term <br> SCIENCE 3WT0 | Work Term <br> SCIENCE 3WT0 |
| Level IV | Units from Academic Levels III and IV |  |  |
| Level V | Work Term <br> SCIENCE 5WT0 | Whits from Academic <br> Level IV |  |

RATIONALE: 1.3 \& 1.4: Effective, September 2022, the Honours Biochemistry Biomedical Research Specialization and the Honours Biochemistry Biomedical Research Specialization Coop programs will be administered by the Faculty of Health Sciences. Initially, while the curriculum will not change substantively, the degree will be amended to the Hons B.H.Sc.

Appropriate notifications will be included in the Faculty of Science section of the Calendar to ensure current Level 2 Biochemistry students, interested in applying or transferring to the program for September 2022, will be informed that the program will be available as both an Hons.B.Sc. and Hons.B.H.Sc. Students interested in the latter, will be directed to the Faculty of Health Sciences section of the Calendar for admission and program requirements. The existing Hons.B.Sc. Biochemistry Biomedical Research Specialization program will be phased out, beginning September 2023. All in-course students currently enrolled in Level 2 or 3 will be given the option to remain in that program through to graduation or transfer to the Hons.B.H.Sc. program, effective September 2022. Final year students, scheduled to convocate in June 2022, will graduate with the Hons.B.Sc. degree at the Faculty of Science Convocation.

Over the next few years, the Hons.B.H.Sc. Biochemistry Biomedical Research Specialization program will see a constructive alignment of the curriculum to better reflect the Faculty expertise and research, housed in the Faculty of Health Sciences. Effective, September 2023, the requirements of the Co-op program have been amended to include
additions to the course list that are suitable for inclusion based on course content. Addition of required scientific writing course. This dedicated course recognizes the importance of equipping students with writing skills so they can succeed in their thesis research placements and future careers. Pending approval of the course that will be administered by the Biomedical Discovery and Commercialization Program Office. Relaxation of level IV BIOCHEM requirement to expand options for students. Maintaining the completion of any other level IV BIOCHEM course maintains rigour in the degree.

## PROGRAM CLOSURES NONE

## MAJOR REVISIONS

NONE

# REPORT TO UNDERGRADUATE COUNCIL <br> FACULTY OF HEALTH SCIENCES SUMMARY OF CURRICULUM CHANGES FOR 2022-2023 

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 2022-2023 Undergraduate Calendar, found at: https://macdrive.memaster.ca/f/54d408da69f546259a3e/

## FACULTY OF HEALTH SCIENCES. .1

- Revision to the Faculty of Health Sciences - Admission and Registration Section
- Revision to the General University, 3-Application-Procedures Section
- Revision to the General University, 17-Academic-Advising-Contact-Information Section

BACHELOR OF HEALTH SCIENCES (HONOURS) PROGRAM . .2

- Revision to Admission Procedures and Requirements - Revision to Admission Procedures
- Revision to Curriculum - Biomedical Sciences Specialization
- New Courses - 3
- Revisions to Courses - 21
- Course Deletions - 6


## HONOURS BACHELOR OF HEALTH SCIENCES IN BIOCHEMISTRYBIOMEDICAL RESEARCH SPECIALIZATION

- Note
- Honours Biochemistry (B.H.Sc.)
- Admission
- Requirements
- Requirements for Student who Entered Honours B.Sc. Biochemistry program prior to September 2022 and selected to transfer into the Honours B.H.Sc. Program
- Honours Biochemistry-Biomedical Research Specialization (B.H.Sc.)
- Admission
- Requirements
- Honours Biochemistry-Biomedical Research Specialization Co-op (B.H.Sc.)
- Admission
- Requirements
- Requirements (Effective September 2023)
- 

HONOURS BACHELOR OF HEALTH SCIENCES IN

- Revision to the introductory section
- Revision to the Admission Requirements Section
- Revision to the Program Notes Section
- Revisions to courses - 2
- Course Deletions - 1

UNDERGRADUATE MEDICAL PROGRAM 29

- Revision to Introduction section
- Undergraduate (MD) Program
- Student Assessment Methods
- Medical Foundations 2
- Medical Foundations 3
- Medical Foundations 4
- Clerkship
- Concept Integration and Review (CIR)
- Basic Life Support Training
- Health Screening
- Police Records Check
- Admission Policy for Undergraduate Medical Program
- Interviews
- Selection

Financial Information

- Canadian Citizens and Landed Immigrants
- International (Visa) Students
- Bursaries
- Donor Bursaries

BACHELOR OF SCIENCE NURSING PROGRAM. 33

- Revision to General Information
- Contacts
- The B.Sc.N. Program
- Admission Policy, Procedure, and Requirements
- Admission Policy
- Admission Procedure
- McMaster B.Sc.N. Program Basic (A)
- McMaster B.Sc.N. Post-Diploma R.P.N. (E) Streams
- Admission Requirements
- Non Academic Requirements for all Streams
- B.Sc.N. Basic (A) Stream, Mohawk and Conestoga Site Admission Requirements
- Applicants with a University Degree or with University Degree credits
- Applicants from a Pre-Health Sciences Program
- Applicants from Other Degree Nursing Programs
- McMaster B.Sc.N. Post Diploma R.P.N. (E) Stream offered at Mohawk and Conestoga Sites Admission Requirements
- B.Sc.N. Accelerated (F) Stream - McMaster Site Admission Requirements
- Application for Deferred Registration
- Academic Regulations
- Continuation in the B.Sc.N. Program
- Removal from Program
- Reinstatement to the Program and University
- Transfer between Sites
- Transfer Credits/Course Exemptions
- Letter of Permission
- Professional Practice Regulations
- Professional Practice Courses
- Non Academic Regulations
- Non-Academic Requirements
- Global Health Professional Practice
- Documentation for Licensure outside of Canada
- Accelerated (F) Stream (B.Sc.N.)
- Requirements (Effective as of 2020-2022)
- Basic (A) Stream (B.Sc.N.)
- Requirements (Effective as of 2020-2022)
- Post Diploma R.P.N. (E) Stream (B.Sc.N.)
- Requirements (Effective as of 2020-2022)
- Requirements (Effective as of 2017-2018)
- Indigenous Section Post Diploma R.P.N. (E) Program Stream
- Requirements (Effective as of 2018-2019)
- New Courses - 1
- Revisions to Courses - 14

BACHELOR OF HEALTH SCIENCES MIDWIFERY PROGRAM 59

- Admission Procedure and Requirements
- Facilitated Black Admission Process (FBAP)
- Indigenous Applicants


## FACULTY OF HUMANITIES

## UNDERGRADUATE CURRICULUM REPORT TO UNDERGRADUATE COUNCIL

## FOR THE 2022 CALENDAR

NOVEMBER 2021

As Approved by the Faculty of Humanities
November 17, 2021

# REPORT TO SENATE FACULTY OF HUMANITIES SUMMARY OF MAJOR CURRICULUM CHANGES FOR 2022-23 

## NEW PROGRAMS

- None


## MAJOR REVISIONS

- None


## CLOSURE OF A PROGRAM

- None
(For information: Calendar copy notice of final intake into Studio Art (B.F.A.) effective Fall 2022; final intake into Art History programs (B.A., Honours B.A., Combined Honours B.A.) effective Fall 2023; and intake into Theatre \& Film programs (B.A., Honours B.A., Combined Honours B.A.) effective Fall 2023; with formal closure forthcoming)


#### Abstract

- A A A A

For a complete review of all changes, please refer to the November 2021 Faculty of Humanities Report to Undergraduate Council for changes to the 2022-2023 Undergraduate Calendar, found at https://www.humanities.mcmaster.ca/about-the-faculty-of-humanities/faculty-meetings/


## REPORT TO UNDERGRADUATE COUNCIL

## FACULTY OF HUMANITIES

## SUMMARY OF CURRICULUM CHANGES FOR 2022-23

This report highlights substantive changes being proposed. For a complete review of all changes, please refer to the November 2021 Faculty of Humanities Report to Undergraduate Council for changes to the 2022-2023 Undergraduate Calendar, found at https://www.humanities.mcmaster.ca/about-the-faculty-of-humanities/facultymeetings/

## 1. SCHOOL OF THE ARTS

- Studio Art:
o Removal of Studio Art I (last intake Fall 2021)
- Updating of program notes and course lists
o Deletion of 7 courses (ART 1DM3, 1MI3, 1OS3, 1SI3, 3EC3, 3J03, 3PB3)
- Art History:
- Updating of all programs' notes and course lists
o Addition of note to minor to reference program being phased out - Revision to 1 existing course (ARTHIST 4E03)
o Deletion of 5 courses (ARTHIST 1A03, 1AA3 1PA3, 2S03, 3D03)
- Music:
- Revision to Music I requirements
o Addition of new Music program requirements following change to level I (effective Fall 2023 for Combined Hons. B.A., Hons.B.Mus, Hons.B.Mus - Music Cognition) o Updating of B.A. program notes and course lists, and removal of prior requirement term - Addition of 1 new course (MUSIC 2CU3)
- Revision to 26 existing courses (MUSIC 1A03, 1AA3, 1DB3, 1GW3/2GW3/3GW3/4GW3

A/B, 2B03, 2CA3, 2CB3, 2DA3, 2MH3, ЗAA3, 3CP3, 3J03, 3JJ3. ЗК03, ЗКK3, 3O03, 3P03, 3V03, 4C03, 4H03, 4K03, 4MO3 A/B, 4N03, 4V03, 4Y03, 4ZO3, 4ZZ3)
o Deletion of 2 courses (MUSIC 1MH3, 3M03 A/B)

- Theatre \& Film Studies:
o Updating of all programs' notes and course lists, and removal of prior requirement term o Addition of note to minor to reference program being phased out
- Revision to 4 existing courses (THTRFLM 3PR3, 3PS3, 3S06, 4A06 A/B)
o Deletion of 5 existing courses (THTRFLM 1FT3, 1H03, 1T03, 2J03, 2JJ3)
- Updating of department notes and open elective course lists
- Integrated Arts:
o Addition of previously approved iARTS programs for calendar inclusion, with minor edits (iARTS I, Hons B.F.A., Hons B.A., Combined Hons B.A.)
o Notice of exclusion of iARTS specializations from calendar copy
o Addition of 12 new courses (IARTS 1BD3, 1CR3, 1HA3, 1PA3, 1PB3, 1RP3, 1RR3, 1SS3,
1SW3, 1TO3, 2CP3, 4CS6 A/B)

2. CLASSICS

- No course or program changes

3. COMMUNICATION STUDIES AND MEDIA ARTS

$$
\text { - } 2 \text { - }
$$

- Communication Studies:
- Revision to 3 existing courses (CMST 2RA3, 2TM6, 3RR3)
- Minor updates to department notes


## - Media Arts:

o Updating of programs notes and course lists
o Addition of 1 new course (MEDIAART 3DS3)

- Revision to 1 existing course (MEDIAART 2B06)
- Deletion of 2 courses (MEDIAART 3H03, 3Q03)


## 4. DEPARTMENT OF ENGLISH AND CULTURAL STUDIES

- Updating of all programs' course lists
- Addition of 3 new courses (ENGLISH 4ED3, 4LF3, 4ML3)
- Revision to 5 existing courses (ENGLISH 2KA3, 3CR3, 4CC3, 4CS3, 4EO3)
- Deletion of 1 course (ENGLISH 4IP3)

5. DEPARTMENT OF FRENCH

- Minor change to all programs' requirements
- Revision to 4 existing courses (FRENCH 1Z06 A/B, 2I03, $2 Z 06$ A/B, 3II3)
- Updating of department notes

6. GENDER STUDIES

- Updating of Minor course list options and notes
- Addition of 1 new course (GENDRST 4A03)
- Revision to 1 existing course (GENDRST 1AA3)

7. GLOBAL PEACE AND SOCIAL JUSTICE

- Updating of program and Minor notes and course lists
- Addition of 1 new course (PEACJUST 2XX3)
- Revision to 5 existing courses (PEACJUST 2CS3, 3C03, 3RR3, 3Y03, 4J03)
- Deletion of 2 courses (PEACJUST 2E03, 3Q03)

8. DEPARTMENT OF HISTORY

- Updating of Minor optional course requirements
- Addition of 1 new course (HISTORY 4DW3)
- Revision of 2 existing courses (HISTORY 1CC3, 2IS3)
- Deletion of 2 courses (HISTORY 4NN3, 4YY6)

9. FACULTY OF HUMANITIES

- Updating of Humanities I course lists
- Updating of Interdisciplinary AADs Minor name, notes and course list
- Addition of 2 new courses (HUMAN 31F1, 31P1)
- Revision to 4 existing courses (HUMAN 1VV3, 2CP2, 3LM3, 4LC3)
- Deletion of 3 courses (HUMAN 3D12, 3IF0, 3IPO)
- Updating of Faculty notes to include current Concurrent Certificate offerings

10. DEPARTMENT OF LINGUISTICS AND LANGUAGES

- Updating of all Linguistics and Cognitive Science of Language program notes and course lists
- Addition of 4 new courses (GERMAN 2Q03, LINGUIST 2RP3, 3DS3, 3PG3)
- Revision of 10 existing courses (LINGUIST 2D03, 2DD3, 2LL3, 2L03, 2PS3, 2S03, 2SY3, 3NL3, 3RP3, 4PL3)
- Deletion of 2 courses (RUSSIAN 2ZO3, 2ZZ3)
- Housekeeping updates to all course/program notes and contact


## 11. DEPARTMENT OF PHILOSOPHY

- Updating of all Philosophy and JPPL program course lists
- Addition of 2 new courses (PHILOS 2U03, 3WP3)
- Revision to 25 existing courses (PHILOS 2B03, 2D03, 2G03, 2H03, 2Q03, 2TT3, 2YY3, 3B03, 3D03, 3E03, 3EE3, 3GH3, 3IO3, 3L03, 3N03, 3O03, 3P03, 3Q03, 3SR3, 3T03, 3VV3, 3XX3, 3ZZ3, 4V03, 4YY3)
- Deletion of 1 course (PHILOS 4IO3)


# McMaster University 

## SCIENCE

# Undergraduate Curriculum Report to Undergraduate Council, for the 2022-2023 Undergraduate Calendar 

Approved by the General Faculty of the Faculty of Science on November 19, 2021

November 19, 2021

## FACULTY OF SCIENCE REPORT TO SENATE

## SUMMARY OF MAJOR CURRICULUM CHANGES FOR 2022-2023

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 19, 2021, Report of the Academic Planning and Policy Committee for changes to the 2022-2023 Undergraduate Calendar, found at:
https://macdrive.mcmaster.ca/f/f8c97562ba16468bb250/

### 1.0 NEW PROGRAMS

### 1.1 Honours Biology - Physiology Core (B.Sc.)

## Admission Note

One of PHYSICS 1A03 or 1C03 is required for admission. Completion of PHYSICS 1AA3 or 1CC3 is also recommended.
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 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 the courses) is required

- BIOLOGY 1A03-Cellular and Molecular Biology
- BIOLOGY 1M03 - Biodiversity, Evolution and Humanity

6 units

- CHEM 1A03 - Introductory Chemistry I
- CHEM 1AA3 - Introductory Chemistry II

3 units
from

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

3 units
from

- PHYSICS 1A03 - Introductory Physics
- PHYSICS 1C03-Physics for the Chemical and Physical Sciences

6 units
from

- the Science I Course List


## Program Notes

1. The Honours Biology - Physiology Core program allows students to choose Biology courses that reflect their own Physiology-related interest. Students are encouraged to discuss their course selections with a Biology academic program advisor.
2. It is recommended that students take both PSYCH $1 \times 03$ and $1 X X 3$ if they are interested in upper level Psychology courses.
3. Completion of BIOLOGY 2A03 is required by the end of Level II.
4. Completion of STATS 2B03 is required by the end of Level III.

Physiology Course List

- BIOCHEM 2EE3 - Metabolism and Physiological Chemistry
- BIOCHEM 4M03 - Cellular and Integrated Metabolism
- BIOCHEM 4N03 - Molecular Membrane Biology
- BIOLOGY 2L03 - Experimental Design in Biology
- BIOLOGY 3AA3 - Fundamental Concepts of Pharmacology
- BIOLOGY 3B03 - Plant Physiology
- BIOLOGY 3EP3 A/B S - Applied Biology Placement
- BIOLOGY 3IR3 A/B S - Independent Research Project
- BIOLOGY 3MM3 - Invertebrate Form and Function
- BIOLOGY 3S03-An Introduction to Bioinformatics
- BIOLOGY 3XL3 - Comparative Vertebrate Anatomy \& Physiology
- BIOLOGY 3ZZ3 - Topics in Physiology
- Biology 4C12 A/B S - Senior Thesis
- BIOLOGY 4F06 A/B S - Senior Project
- BIOLOGY 4T03 - Molecular and Cellular Neuroscience
- BIOLOGY 4X03 - Environmental Physiology
- BIOPHYS 2A03-Biophysics of the Cell and Living Organisms
- KINESIOL 2C03 - Neuromuscular Exercise Physiology
- KINESIOL 2CC3 - Cardiorespiratory and Metabolic Exercise Physiology
- KINESIOL 4C03 - Integrative Physiology of Human Performance
- LIFESCI 3AA3 - Human Pathophysiology
- MOLBIOL 3M03 - Fundamental Concepts of Development
- NEUROSCI 3J03 - Visual Neuroscience
- NEUROSCI 3SN3 - Neural Circuits
- PSYCH 2E03 - Sensory Processes
- PSYCH 3A03-Audition
- PSYCH 3FA3 - Neuroscience of Learning and Memory

Experiential Learning Course List

- BIOLOGY 2L03 - Experimental Design in Biology
- BIOLOGY 3B03 - Plant Physiology
- BIOLOGY 3EI3- Ecological Indicators
- BIOLOGY 3EP3 - Applied Biology Placement
- BIOLOGY 3FF3-Evolution
- BIOLOGY 3IR3 - Independent Research Project
- BIOLOGY 3R03- Field Biology I
- BIOLOGY 3U03-Animal Physiology - Homeostasis
- BIOLOGY 4A03- Advanced Topics in Ecology
- BIOLOGY 4C12 A/B S -Senior Thesis
- BIOLOGY 4F06- A/B S Senior Project
- BIOLOGY 4IO3- Senior Project
- BIOLOGY 4J03- Field Biology II
- BIOLOGY 4PP3- Environmental Microbiology and Biotechnology
- MOLBIOL 3A03-Current Topics in Molecular Biology and Genetics
- MOLBIOL 3D03 - Experimental Approaches in Cell Biology
- MOLBIOL 3103 - Independent Research Project
- MOLBIOL 3V03-Techniques in Molecular Genetics
- MOLBIOL 3 Y03 - Plant Responses to the environment
- MOLBIOL 4BB3- Plant Metabolism and Molecular Biology
- MOLBIOL 4G12 A/B S- Senior Thesis

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.)
Levels II-IV: 90 Units
12 units

- BIOLOGY 2A03 - Integrative Physiology of Animals
- BIOLOGY 2B03 - Cell Biology
- BIOLOGY 2C03 - Genetics
- BIOLOGY 2F03 - Fundamental and Applied Ecology (See Program Note 3 above.)
6 units
- CHEM 2OA3 - Organic Chemistry I
- CHEM 2OB3 - Organic Chemistry II

3 units

- STATS 2B03 - Statistical Methods for Science
(See Program Note 4 above.)
3 units
- BIOCHEM 3G03 - Proteins and Nucleic Acids

9 units

- BIOLOGY 3P03 - Cell Physiology
- BIOLOGY 3U03 - Animal Physiology - Homeostasis
- BIOLOGY 3UU3 - Animal Physiology - Regulatory Systems

3 units
from

- the Experiential Learning Course List

3 units
from

- Level IV Biology or Molecular Biology courses

24 units
from

- the Physiology Course List

27 units

- Electives

Justification 1.1: Introduction of a new core program version of the Honours Biology Physiology Research Specialization program. This new program option in Physiology will provide flexibility for students who still want to focus their studies in Physiology but have no interest in pursuing applied research or lab intensive experiences. This model is functionally equivalent to the Honours Biology Research Specialization and Honours Biology Core programs.
This new Honours Physiology program will initially be capped at 50 seats to ensure it is manageable given our current course offerings and their associated enrolment caps. Students in this program will be required to complete a minimum three units of experiential learning from a new experiential course list which will be added to all Biology core programs.

### 1.2 Honours Molecular Biology and Genetics Core (B.Sc.)

## Admission Note

One of PHYSICS 1A03 or 1C03 is required for admission. Completion of PHYSICS 1AA3 or 1CC3 by the end of Level II is also recommended.

## 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 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 the courses) is required

- BIOLOGY 1A03-Cellular and Molecular Biology
- BIOLOGY 1M03 - Biodiversity, Evolution and Humanity

6 units

- CHEM 1A03 - Introductory Chemistry I
- CHEM 1AA3 - Introductory Chemistry II

3 units
from

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

3 units
from

- PHYSICS 1A03 - Introductory Physics
- PHYSICS 1C03-Physics for the Chemical and Physical Sciences (See Admission Note above.)
6 units
from
- the Science I Course List (See Admission Note above.)

Program Notes

1. The Honours Molecular Biology and Genetics Core program allows students to choose Biology courses that reflect their own Molecular Biology-related interest. Students are encouraged to discuss their course selections with a Biology academic program advisor.
2. BIOLOGY 2B03, 2EE3 and MOLBIOL 2C03 must be completed in Level II.
3. Six units of BIOLOGY 2A03, 2D03, 2F03, 3FF3 are required. However, completion of at least nine units is recommended.
4. Completion of STATS 2B03 is required for admission to the Honours Molecular Biology and Genetics Research Specialization (Co-op) program and therefore, students intending to apply for the Co-op option must complete STATS 2B03 in Level II.
5. Students interested in microbiology and biotechnology and especially those considering postgraduate studies in this area should take the following courses: BIOLOGY 4PP3, MOLBIOL 4P03.

Molecular Biology and Genetics Course List I

- MOLBIOL 3A03 - Current Topics in Molecular Biology and Genetics
- MOLBIOL 3D03 - Experimental Approaches in Cell Biology
- MOLBIOL 3 I03 A/B S - Independent Research Project
- MOLBIOL 3M03 - Fundamental Concepts of Development
- MOLBIOL 3 Y03 - Plant Responses to the Environment
- MOLBIOL 4BB3 - Plant Metabolism and Molecular Biology
- MOLBIOL 4DD3 - Molecular Evolution
- MOLBIOL 4ED3 - Evolutionary Developmental Biology
- MOLBIOL 4H03 - Molecular Biology of Cancer
- MOLBIOL 4K03 - Research Advances in Biology of Aging
- MOLBIOL 4P03 - Medical Microbiology
- MOLBIOL 4RR3 - Human Genetics

Molecular Biology and Genetics Course List II

- BIOCHEM 2B03 - Nucleic Acid Structure and Function
- BIOCHEM 2BB3 - Protein Structure and Enzyme Function
- BIOCHEM 2EE3 - Metabolism and Physiological Chemistry
- BIOCHEM 3G03 - Proteins and Nucleic Acids
- BIOCHEM 4E03 - Gene Regulation in Stem Cells and Development
- BIOLOGY 2A03 - Integrative Physiology of Animals
- BIOLOGY 2D03 - Plant Biodiversity and Biotechnology
- BIOLOGY 2F03 - Fundamental and Applied Ecology
- BIOLOGY 2L03 - Experimental Design in Biology
- BIOLOGY 3FF3 - Evolution
- BIOLOGY 3PG3 - Population Genetics
- BIOLOGY 4EE3 - Human Diversity and Human Nature
- BIOLOGY 4PP3 - Environmental Microbiology and Biotechnology
- BIOPHYS 2A03 - Biophysics of the Cell and Living Organisms
- BIOPHYS 3G03 - Modelling Life
- CHEMBIO 2A03 - Introduction to Bio-Analytical Chemistry
- CHEMBIO 2P03 - Physical Chemistry Tools for Chemical Biology
- CHEMENG 3BK3 - Bio-Reaction Engineering
- CHEMENG 3BM3 - Bioseparations Engineering
- HTHSCI 3 IO3 - Introductory Immunology
- HTHSCI 3K03 - Introductory Virology
- HTHSCI 4II3 - Advanced Concepts in Immunology

Experiential Course List

- BIOLOGY 2L03 - Experimental Design in Biology
- BIOLOGY 3B03 - Plant Physiology
- BIOLOGY 3EI3- Ecological Indicators
- BIOLOGY 3EP3 - Applied Biology Placement
- BIOLOGY 3FF3- Evolution
- BIOLOGY 3IR3 - Independent Research Project
- BIOLOGY 3R03- Field Biology I
- BIOLOGY 3U03 - Animal Physiology - Homeostasis
- BIOLOGY 4A03- Advanced Topics in Ecology
- BIOLOGY 4C12 A/B-Senior Thesis
- BIOLOGY 4F06 A/B-Senior Project
- BIOLOGY 4I03- Senior Project
- BIOLOGY 4J03- Field Biology II
- BIOLOGY 4PP3- Environmental Microbiology and Biotechnology
- MOLBIOL 3A03 - Current Topics in Molecular Biology and Genetics
- MOLBIOL 3D03 - Experimental Approaches in Cell Biology
- MOLBIOL 3 I03 - Independent Research Project
- MOLBIOL 3V03 - Techniques in Molecular Genetics
- MOLBIOL 3 Y03 - Plant Responses to the environment
- MOLBIOL 4BB3 - Plant Metabolism and Molecular Biology
- MOLBIOL 4G12 A/B S - Senior Thesis

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.)
Levels II-IV: 90 Units
6 units

- CHEM 2OA3 - Organic Chemistry I
- CHEM 2OB3 - Organic Chemistry II 3 units
- STATS 2B03 - Statistical Methods for Science (See Program Note 4 above.)
6 units
from
- BIOLOGY 2A03 - Integrative Physiology of Animals
- BIOLOGY 2D03 - Plant Biodiversity and Biotechnology
- BIOLOGY 2F03 - Fundamental and Applied Ecology
- BIOLOGY 3FF3 - Evolution (See Program Note 3 above.)
21 units
- BIOLOGY 2B03 - Cell Biology
- BIOLOGY 2EE3 - Introduction to Microbiology and Biotechnology
- BIOLOGY 3S03 - An Introduction to Bioinformatics
- MOLBIOL 2C03 - Genetics
- MOLBIOL 3B03 - Advanced Cell Biology
- MOLBIOL 3113 - Molecular Genetics of Eukaryotes
- MOLBIOL 3003 - Microbial Genetics (See Program Note 2 above.)
3 units
from
- the Experiential Course List

9 units
from

- the Molecular Biology and Genetics Course List I, which must include at least three units of Level IV
12 units
from
- the Molecular Biology and Genetics Course List I or II

30 units

- Electives (See Program Note 3 above.)

Justification 1.2: Introduction of a new core program version of the Honours Molecular Biology and Genetics Research Specialization program. This new program option in Molecular Biology and Genetics will provide flexibility for students who still want to focus their studies in Molecular Biology and Genetics but have no interest in pursuing applied research or lab intensive experiences. This model is functionally equivalent to the Honours Biology Research Specialization and Honours Biology Core programs.

### 2.0 PROGRAM CLOSURES

- Honours B.Sc. in Biochemistry, Honours B.Sc. in Biochemistry - Biomedical Research Specializatino, Honours B.Sc. in Biochemistry - Biomedical Research Specializatino Co-op

Memo from Dr. Maureen MacDonald, Dean of Science, and Dr. Susan Denburg, Executive Vice-Dean and Associate Vice-President, Academic, Faculty of Health Sciences will be sent as soon as possible.

### 3.0 MAJOR REVISIONS:

3.1 Honours Mathematics and Statistics - Mathematics Sub-Plan (B.Sc.)

Effective September 2023, this program will be renamed Honours Mathematics and
Statistics - Mathematics Specialization (B.Sc.). Students who enrolled prior to September
2023 will be given the choice to remain in Honours Mathematics and Statistics -
Mathematics Sub-plan or transfer into Honours Mathematics and Statistics - Mathematics
Specialization.
Admission Notes

1. For students entering the program as of September 2019, $\epsilon$ Completion of MATH 1C03 is required by the end of Level II.
2. Students seeking admission to the program are strongly discouraged from taking MATH 1LS3 and 1LT3 as they do not cover all content needed for MATH 2X03.

## Admission

Completion of any Level I program with a Grade Point Average of at least 8.0 including:
3 units
from

- MATH 1A03-Calculus For Science I
- MATH 1LS3 - Calculus for the Life Sciences I
- MATH 1X03-Calculus for Math and Stats I
- MATH 1ZA3 - Engineering Mathematics I (See Admission Note 2 above.)
3 units
from the following courses, with a grade of at least C+
- MATH 1AA3-Calculus For Science II
- MATH 1LT3-Calculus for the Life Sciences II
- MATH 1XX3 - Calculus for Math and Stats II
- MATH 1ZB3 - Engineering Mathematics II-A (See Admission Note 2 above.)
3 units
from
- MATH 1B03-Linear Algebra I
- MATH 1ZC3 - Engineering Mathematics II-B

Program Notes

1. Students must satisfy a Scientific Computing requirement, by completing one of: COMPSCI 1MD3, DATASCI 2G03, MATH 1MP3, PHYSICS $2 G 03$.
2. For students entering the program as of September 2019,MATH 1C03 must be completed by the end of Level II.
Core Course List

- MATH 2 E03
- MATH 2ET3* - Theory and Practice of Teaching Mathematics
- MATH 2LA3 - Applications of Linear Algebra
- MATH 2R03 - Theory of Linear Algebra
- MATH 2 S03
- MATH2TO3
- MATH 3B03-Geometry
- MATH 3E03
- MATHZEEZ
- MATH 3F03-Ordinary Differential Equations
- MATH 3FF3 - Partial Differential Equations
- MATH 3GR3 - Abstract Algebra
- MATH 3MB3 - Introduction to Modelling
- MATH 3NA3 - Numerical Linear Algebra
- MATH 3003
- MATH 3T03 - Inquiry in Topology
- STATS 2MB3 - Statistical Methods and Applications
- STATS 3A03 - Applied Regression Analysis with SAS
- STATS 3CI3
- STATS 3D03 - Mathematical Statistics
- STATS 3F03
- STATS 3S03* - Survey Sampling
- STATS 3U03* - Stochastic Processes

Scientific Communication Course List

- MATH 3CY3 - Cryptography
- MATH 3DC3 - Discrete Dynamical Systems and Chaos
- MATH 3ET3 A/B S - Mathematics Teaching Placement
- MATH 3G03 - Problem Solving
- MATH 3MB3 - Introduction to Modelling
- MATH 3QC3 - Introduction to Quantum Computing
- MATH 3TP3 - Truth and Provability
- MATH 3U03 - Combinatorics
- MATH 3V03 - Graph Theory
- MATH 3Z03 - Inquiry: History of Mathematics
- MATH 4FM3 - Financial Markets and Derivatives
- MATH 4MB3 - Mathematical Biology
- MATH 4P06 A/B S - Senior Research Project
- MATH 4W03 - Reading in Mathematics
- STATS 3A03 - Applied Regression Analysis with SAS
- STATS 3DA3 - Data Science Methods
- STATS 3DS3 - Introduction to Data Science Theory
- STATS 3PG3 - Probability and Games of Chance
- STATS 4A03 - Time Series
- STATS 4M03 - Multivariate Analysis
- STATS 4P03 - Advanced Applied Statistics
- STATS 4T06 A/B - Senior Research Project
- STATS 4W03 - Reading in Statistics

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.)
Levels II-IV: 90 Units
18 units

- MATH 2C03 - Introduction to Differential Equations
- MATH 2R03 - Theory of Linear Algebra
- MATH 2X03 - Advanced Calculus I
- MATH 2XX3 - Advanced Calculus II
- MATH 3A03 - Real Analysis I
- MATH 3X03 - Complex Analysis I

3 units

- STATS 2D03 - Introduction to Probability

15 units
from the Core Course List, which must include six units from:

- MATH 3 E 03
- MATH 3EE3
- MATH 3F03 - Ordinary Differential Equations
- MATH 3FF3 - Partial Differential Equations
- MATH 3GR3 - Abstract Algebra
- MATH 3T03 - Inquiry in Topology

3 units

- MATH 4A03 - Real Analysis II

3 units
from

- MATH 4B03* - Calculus on Manifolds
- MATH 4E03 - Galois Theory
- MATH 4GR3 - Groups and Rings
- MATH 4L03* - Introduction to Mathematical Logic
- MATH 4NA3 - Numerical Methods for Differential Equations
- MATH 4Q03
- MATH 4V03
- MATH 4X03* - Complex Analysis II


## 15 units

from

- Levels III, IV, V Mathematics or Statistics courses including one course selected from the Scientific Communication Course List
0-3 units
from
- COMPSCI 1MD3 - Introduction to Programming
- DATASCI 2G03 - Scientific Computing
- MATH 1MP3 - Introduction to Mathematical Scientific Computation
- PHYSICS 2G03 - Scientific Computing (See Program Note 1 above.)
0-3 units
- MATH 1C03 - Introduction to Mathematical Reasoning (if not completed in Level I)

27-33 units

- Electives


### 3.2 Honours Mathematics and Statistics - Mathematics Sub-Plan <br> Co-op (B.Sc.)

Effective September 2023, this program will be renamed Honours Mathematics and Statistics - Mathematics Specialization Co-op (B.Sc.). Students who enrolled prior to September 2023 will be given the choice to remain in Honours Mathematics and Statistics - Mathematics Sub-plan Co-op or transfer into Honours Mathematics and Statistics Mathematics Specialization Co-op.
Honours Mathematics and Statistics Co-op Programs
Co-op opportunities in Mathematics and Statistics are available in combination with the subplans. Enrolment in these programs 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 a Level II Honours Mathematics and Statistics program with a Grade Point Average of at least 5.0. Information about the program and the selection procedure may be obtained from Science Career and Cooperative Education.

## Notes

1. These are five-level (year) co-op programs which include two eight-month work terms which must be spent in mathematics or statistics related placements.
2. Students must be registered in a full-load and take a full academic program as prescribed, by Level and Term.
3. Students are required to complete SCIENCE 2C00 prior to the Fall term of level III. Students are required to complete and SCIENCE 3COO before the first work placement. and are strongly recommended to complete SCIENCE 2600 in Level 11.
4. Students must satisfy a Scientific Computing requirement, by completing one of: COMPSCI 1MD3, DATASCI 2G03, MATH 1MP3, PHYSICS 2G03. It is recommended that students in Mathematics Sub-plan (Co-op) complete this requirement prior to their first work term.

## 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 Mathematics and Statistics (Mathematics SubPlan) with a Grade Point Average of at least 5.0.
Core Course List

- MATH 2E03
- MATH 2ET3* - Theory and Practice of Teaching Mathematics
- MATH 2LA3 - Applications of Linear Algebra
- MATH 2R03 - Theory of Linear Algebra
- MATH 2 SO3
- MATH2T03
- MATH 3B03 - Geometry
- MATH 3 E03
- MATH 3EE3
- MATH 3F03 - Ordinary Differential Equations
- MATH 3FF3 - Partial Differential Equations
- MATH 3GR3 - Abstract Algebra
- MATH 3MB3 - Introduction to Modelling
- MATH 3NA3 - Numerical Linear Algebra
- MATH $3 Q 03$
- MATH 3T03 - Inquiry in Topology
- STATS 2MB3 - Statistical Methods and Applications
- STATS 3A03 - Applied Regression Analysis with SAS
- STATS 3CI3
- STATS 3D03 - Mathematical Statistics
- STATS 3F03
- STATS 3S03* - Survey Sampling
- STATS 3U03* - Stochastic Processes

Scientific Communication Course List

- MATH 3CY3 - Cryptography
- MATH 3DC3 - Discrete Dynamical Systems and Chaos
- MATH 3ET3 A/B S - Mathematics Teaching Placement
- MATH 3G03 - Problem Solving
- MATH 3MB3 - Introduction to Modelling
- MATH 3QC3 - Introduction to Quantum Computing
- MATH 3TP3 - Truth and Provability
- MATH 3U03 - Combinatorics
- MATH 3V03 - Graph Theory
- MATH 3Z03 - Inquiry: History of Mathematics
- MATH 4FM3 - Financial Markets and Derivatives
- MATH 4MB3 - Mathematical Biology
- MATH 4P06 A/B S - Senior Research Project
- MATH 4W03 - Reading in Mathematics
- STATS 3A03 - Applied Regression Analysis with SAS
- STATS 3DA3 - Data Science Methods
- STATS 3DS3 - Introduction to Data Science Theory
- STATS 3PG3 - Probability and Games of Chance
- STATS 4A03 - Time Series
- STATS 4M03 - Multivariate Analysis
- STATS 4P03 - Advanced Applied Statistics
- STATS 4T06 A/B - Senior Research Project
- STATS 4W03 - Reading in Statistics

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
30 units

- Completion of Level II Honours Mathematics and Statistics (Mathematics Sub-Plan)

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:
3 units

- MATH 3A03-Real Analysis -
- MATH 3IA3 - Introduction to Analysis

3 units
from

- MATH 3E03
- MATH 3F03 - Ordinary Differential Equations
- MATH 3GR3 - Abstract Algebra

6 units
from

- Core Course List

3 units

- Electives (See Note 4 above.)

21 courses

- SCIENCE 2C00-Skills for Careor 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 3WTO - 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

- MATH 3A03 - Real Analysis I

3 units

- MATH 3X03-Complex Analysis I

3 units

- MATH 4A03-Real Analysis II

3 units
from

- MATH 3EE3
- MATH 3FF3 - Partial Differential Equations
- MATH 3NA3 - Numerical Linear Algebra
- MATH 3T03 - Inquiry in Topology

9 units
from

- Levels III, IV, V Mathematics or Statistics courses including one course selected from the Scientific Communication Course List
$0-3$ units
from the following courses, if not already completed for another requirement:
- COMPSCI 1MD3 - Introduction to Programming
- DATASCI 2G03 - Scientific Computing
- MATH 1MP3 - Introduction to Mathematical Scientific Computation
- PHYSICS 2G03-Scientific Computing (See Note 4 above.)
9-12 units
- Electives

Spring/Summer Term:
Work Term
1 course

- SCIENCE 4WTO - 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 5WTO - Science Co-op Work Term

Winter Term: 15 units:
3 units

- MATH 4A03 - Real Analysis II

6 units
from

- Levels III, IV, V Mathematics or Statistics courses

3 units
from

- Level IV Mathematics courses

63 units

- Electives

Requirements For Students Who Entered Prior To September 2019
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
30 units

- Completion of Level II Honours Mathematics and Statistics (Mathematics Sub-Plan)

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:
3 units

- MATH 3A03-Real Analysis I

3 units
from

- MATH 3 E03
- MATH 3F03 - Ordinary Differential Equations
- MATH 3GR3 - Abstract Algebra

6 units
from

- Core Course List

3 units

- Electives (See Note 4 above.)

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 3WTO - Science Co-op Work Term

Spring/Summer Term:
Work Term
1 course

- SCIENCE 3WTO - 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

- MATH 3X03 - Complex Analysis I

3 units

- MATH 4A03 - Real Analysis II

3 units
from

- MATH 3EE3
- MATH 3FF3 - Partial Differential Equations
- MATH 3NA3 - Numerical Linear Algebra
- MATH 3T03 - Inquiry in Topology

9 units
from

- Levels III, IV, V Mathematics or Statistics courses

0-3 units
from the following courses, if not already completed for another requirement:

- COMPSCI 1MD3 - Introduction to Programming
- DATASCI 2G03 - Scientific Computing
- MATH 1MP3 - Introduction to Mathematical Scientific Computation
- PHYSICS 2G03-Scientific Computing
(See Note 4 above.)
9-12 units
- Electives

Spring/Summer Term:
Work Term
1 course

- SCIENCE 4WTO - 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 5WTO - Science Co-op Work Term

Winter Term: 15 units:
6 units
from

- Levels III, IV, V Mathematics or Statistics courses

3 units
from

- Level IV Mathematics courses

6 units

- Electives

Co-op Program Chart

|  | FALL TERM (September to December) | WINTER TERM (January to April) | SPRING/SUMMER TERM <br> (May to August) |
| :---: | :---: | :---: | :---: |
| Level III | 15 units from Academic Level III $+$ SCIENCE 2C00 (if not completed) and SCIENCE 3C00 | Work Term SCIENCE 3WTO | Work Term SCIENCE 3WTO |
| Level IV | 15 units from Academic Levels III, IV | 15 units from Academic Levels III, IV | Work Term SCIENCE 4WTO |
| Level V | Work Term SCIENCE 5WT0 | 15 units from Academic Level IV |  |

Justification 3.1 \& 3.2: Program name is being phased in to better reflect specialization in Mathematics. The sub-plan designation is not well understood by students or those outside the McMaster community. The note will provide students with sufficient warning of the program name change that will take effect in September 2023. Other changes include updates to Course Lists and program requirements to reflect changes to offerings.

### 3.3 Honours Mathematics and Statistics - Statistics Sub-Plan (B.Sc.)

Effective September 2023, this program will be renamed Honours Mathematics and Statistics - Statistics Specialization (B.Sc.). Students who enrolled prior to September 2023 will be given the choice to remain in Honours Mathematics and Statistics - Statistics Sub-plan or transfer into Honours Mathematics and Statistics - Statistics Specialization.

Admission Notes

1. For students entering the program as of September 2019, eCompletion of MATH 1C03 is required by the end of Level II.
2. Students seeking admission to the program are strongly discouraged from taking MATH 1LS3 and 1LT3 as they do not cover all content needed for MATH 2X03.

## Admission

Completion of any Level I program with a Grade Point Average of at least 8.0 including: 3 units
from

- MATH 1A03-Calculus For Science I
- MATH 1LS3 - Calculus for the Life Sciences I
- MATH 1X03 - Calculus for Math and Stats I
- MATH 1ZA3 - Engineering Mathematics I
(See Admission Note 2 above.)
3 units
from the following courses, with a grade of at least $\mathrm{C}_{+}$
- MATH 1AA3 - Calculus For Science II
- MATH 1LT3 - Calculus for the Life Sciences II
- MATH 1XX3 - Calculus for Math and Stats II
- MATH 1ZB3 - Engineering Mathematics II-A (See Admission Note 2 above.)
3 units
from
- MATH 1B03 - Linear Algebra I
- MATH 1ZC3 - Engineering Mathematics II-B


## Program Notes

1. Students must satisfy a Scientific Computing requirement, by completing one of: COMPSCI 1MD3, DATASCI 2G03, MATH 1MP3, PHYSICS $2 G 03$.
2. For students entering the program as of September 2019, eCompletion of MATH 1C03 is required by the end of Level II.
Core Course List

- MATH 2E03
- MATH 2ET3* - Theory and Practice of Teaching Mathematics
- MATH 2LA3 - Applications of Linear Algebra
- MATH 2R03 - Theory of Linear Algebra
- MATH2S03
- MATH 2 T03
- MATH 3B03 - Geometry
- MATH EEO
- MATH 3EE3
- MATH 3F03 - Ordinary Differential Equations
- MATH 3FF3 - Partial Differential Equations
- MATH 3GR3 - Abstract Algebra
- MATH 3MB3 - Introduction to Modelling
- MATH 3NA3 - Numerical Linear Algebra
- MATH 3003
- MATH 3T03 - Inquiry in Topology
- STATS 2MB3 - Statistical Methods and Applications
- STATS 3A03 - Applied Regression Analysis with SAS
- STATS 3CI3
- STATS 3D03 - Mathematical Statistics
- STATS 3F03
- STATS 3S03* - Survey Sampling
- STATS 3U03* - Stochastic Processes

Scientific Communication Course List

- MATH 3CY3 - Cryptography
- MATH 3DC3 - Discrete Dynamical Systems and Chaos
- MATH 3ET3 A/B S - Mathematics Teaching Placement
- MATH 3G03 - Problem Solving
- MATH 3MB3 - Introduction to Modelling
- MATH 3QC3 - Introduction to Quantum Computing
- MATH 3TP3 - Truth and Provability
- MATH 3U03 - Combinatorics
- MATH 3V03 - Graph Theory
- MATH 3Z03 - Inquiry: History of Mathematics
- MATH 4FM3 - Financial Markets and Derivatives
- MATH 4MB3 - Mathematical Biology
- MATH 4P06 A/B S - Senior Research Project
- MATH 4W03 - Reading in Mathematics
- STATS 3A03 - Applied Regression Analysis with SAS
- STATS 3DA3 - Data Science Methods
- STATS 3DS3 - Introduction to Data Science Theory
- STATS 3PG3 - Probability and Games of Chance
- STATS 4A03 - Time Series
- STATS 4M03 - Multivariate Analysis
- STATS 4P03 - Advanced Applied Statistics
- STATS 4T06 A/B - Senior Research Project
- STATS 4W03 - Reading in Statistics

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-IV: 90 Units
12 units

- MATH 2C03 - Introduction to Differential Equations
- MATH 2X03 - Advanced Calculus I
- MATH 2XX3 - Advanced Calculus II
- MATH 3X03 - Complex Analysis I

3 units
from

- MATH 2LA3 - Applications of Linear Algebra
- MATH 2R03 - Theory of Linear Algebra

3 units
from

- MATH 3A03 - Real Analysis I
- MATH 3IA3 - Introduction to Analysis

12 units

- STATS 2D03 - Introduction to Probability
- STATS 2MB3 - Statistical Methods and Applications
- STATS 3A03 - Applied Regression Analysis with SAS
- STATS 3D03 - Mathematical Statistics

3 units
from

- STATS 3F03
- STATS 3S03* - Survey Sampling
- STATS 3U03* - Stochastic Processes

9 units
from

- the Core Course List


## 9 units

- Levels III, IV, V Mathematics or Statistics courses including one course selected from the Scientific Communication Course List
6 units
- Level IV Statistics

0-3 units
from

- COMPSCI 1MD3 - Introduction to Programming
- DATASCI 2G03 - Scientific Computing
- MATH 1MP3 - Introduction to Mathematical Scientific Computation
- PHYSICS 2G03 -Scientific Computing (See Program Note 1 above.)
0-3 units
- MATH 1C03 - Introduction to Mathematical Reasoning (if not completed in Level I)

27-33 units

- Electives


### 3.4 Honours Mathematics and Statistics - Statistics Sub-Plan Co-op (B.Sc.)

Effective September 2023, this program will be renamed Honours Mathematics and Statistics - Statistics Specialization Co-op (B.Sc.). Students who enrolled prior to September 2023 will be given the choice to remain in Honours Mathematics and Statistics - Statistics Sub-plan Co-op or transfer into Honours Mathematics and Statistics Statistics Specialization Co-op.

Honours Mathematics and Statistics Co-op Programs
Co-op opportunities in Mathematics and Statistics are available in combination with the subplans. Enrolment in these programs 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 a Level II Honours Mathematics and Statistics program with a Grade Point Average of at least 5.0. Information about the program and the selection procedure may be obtained from Science Career and Cooperative Education.

Notes

1. These are five-level (year) co-op programs which include two eight-month work terms which must be spent in mathematics or statistics related placements.
2. Students must be registered in a full-load and take a full academic program as prescribed, by Level and Term.
3. Students are required to complete SCIENCE 2C00 prior to the Fall term of level III. Students are required to complete and SCIENCE 3C00 before the first work placement.and are strongly recommended to complete SCIENCE 2C00 in Level II.
4. Students must satisfy a Scientific Computing requirement, by completing one of: COMPSCI 1MD3, DATASCI 2G03, MATH 1MP3, PHYSICS 2G03. It is recommended that students in Mathematics Sub-Plan (Co-op) complete this requirement prior to their first work term.
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 Mathematics and Statistics (Statistics Sub-Plan) with a Grade Point Average of at least 5.0.
Core Course List

- MATH 2E03
- MATH 2ET3* - Theory and Practice of Teaching Mathematics
- MATH 2LA3 - Applications of Linear Algebra
- MATH 2R03 - Theory of Linear Algebra
- MATH 2 SO3
- MATH2TO3
- MATH 3B03 - Geometry
- MATH 3E03
- MATH 3EE3
- MATH 3F03 - Ordinary Differential Equations
- MATH 3FF3 - Partial Differential Equations
- MATH 3GR3 - Abstract Algebra
- MATH 3MB3 - Introduction to Modelling
- MATH 3NA3 - Numerical Linear Algebra
- MATH $3 Q 03$
- MATH 3T03 - Inquiry in Topology
- STATS 3S03* - Survey Sampling
- STATS 3U03* - Stochastic Processes

Scientific Communication Course List

- MATH 3CY3 - Cryptography
- MATH 3DC3 - Discrete Dynamical Systems and Chaos
- MATH 3ET3 A/B S - Mathematics Teaching Placement
- MATH 3G03 - Problem Solving
- MATH 3MB3 - Introduction to Modelling
- MATH 3QC3 - Introduction to Quantum Computing
- MATH 3TP3 - Truth and Provability
- MATH 3U03 - Combinatorics
- MATH 3V03 - Graph Theory
- MATH 3Z03 - Inquiry: History of Mathematics
- MATH 4FM3 - Financial Markets and Derivatives
- MATH 4MB3 - Mathematical Biology
- MATH 4P06 A/B S - Senior Research Project
- MATH 4W03 - Reading in Mathematics
- STATS 3A03 - Applied Regression Analysis with SAS
- STATS 3DA3 - Data Science Methods
- STATS 3DS3 - Introduction to Data Science Theory
- STATS 3PG3 - Probability and Games of Chance
- STATS 4A03 - Time Series
- STATS 4M03 - Multivariate Analysis
- STATS 4P03 - Advanced Applied Statistics
- STATS 4T06 A/B - Senior Research Project
- STATS 4W03 - Reading in Statistics

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
30 units

- Completion of Level II Honours Mathematics and Statistics (Statistics Sub-Plan)

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

- STATS 3A03 - Applied Regression Analysis with SAS
- STATS 3D03 - Mathematical Statistics

3 units
from

- MATH 3A03 - Real Analysis I
- MATH 3IA3 - Introduction to Analysis

6 units
from

- the Core Course List

21 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 3WTO - 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

- MATH 3X03 - Complex Analysis I

3 units
from the following courses, if not completed in Level III

- STATS 3CI3
- STATS 3F03
- STATS 3S03* - Survey Sampling
- STATS 3U03* - Stochastic Processes

3 units
from

- Level IV Statistics courses

9 units
from

- Levels III, IV, V Mathematics or Statistics courses including one course selected from the Scientific Communication Course List
0-3 units
from the following courses, if not already completed for another requirement:
- COMPSCI 1MD3 - Introduction to Programming
- DATASCI 2G03 - Scientific Computing
- MATH 1MP3 - Introduction to Mathematical Scientific Computation
- PHYSICS 2G03 -Scientific Computing (See Note 4 above.)
9-12 units
- Electives

Spring/Summer Term:
Work Term

1 course

- SCIENCE 4WTO - 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 5WTO - Science Co-op Work Term

Winter Term: 15 units:
3 units
from

- Levels III, IV, V Mathematics or Statistics courses

3 units
from

- Level IV Statistics courses

9 units

- Electives

Requirements For Students Who Entered Prior To September 2019
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
30 units

- Completion of Level II Honours Mathematics and Statistics (Statistics Sub-Plan)

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

- STATS 3A03 - Applied Regression Analysis with SAS
- STATS 3D03 - Mathematical Statistics

3 units

- MATH 3A03-Real Analysis I

6 units
from

- the Core Course List

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 3WTO - Science Co-op Work Term

Spring/Summer Term:
Work Term
1 course

- SCIENCE 3WTO - 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

- MATH 3X03-Complex Analysis I

3 units
from the following courses, if not completed in Level III

- STATS 3Cl3
- STATS 3F03
- STATS 3 SO3* - Survey Sampling
- STATS 3U03* - Stochastic Processes

3 units
from

- Level IV Statistics courses

9 units
from

- Levels III, IV, V Mathematics or Statistics courses
$0-3$ units
from the following courses, if not already completed for another requirement:
- COMPSCI 1MD3 - Introduction to Programming
- DATASCI 2G03 - Scientific Computing
- MATH 1MP3 - Introduction to Mathematical Scientific Computation
- PHYSICS 2G03 - Scientific Computing (See Note 4 above.)
9-12 units
- Electives

Spring/Summer Term:
Work Term
1 course

- SCIENCE 4WTO - 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 5WTO - Science Co-op Work Term

Winter Term: 15 units:
3 units
from

- Levels III, IV, V Mathematics or Statistics courses

3 units
from

- Level IV Statistics courses

9 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 2COO (if not completed) and SCIENCE 3 C00 | Work Term SCIENCE 3WTO | Work Term SCIENCE 3WTO |
| Level IV | 15 units from Academic | 15 units from Academic | Work Term |


|  | Levels III, IV | Levels III, IV | SCIENCE 4WTO |
| :--- | :---: | :---: | :---: |
| Level V | Work Term <br> SCIENCE 5WTO | 15 units from Academic <br> Level IV |  |

Justification 3.3 \& 3.4: Program name is being phased in to better reflect specialization in Statistics. The sub-plan designation is not well understood by students or those outside the McMaster community. The note will provide students with sufficient warning of the program name change that will take effect in September 2023. Other changes include updates to Course Lists and program requirements to reflect changes to offerings.

## FACULTY OF SCIENCE

## REPORT TO UNDERGRADUATE COUNCIL

## SUMMARY OF CURRICULUM CHANGES FOR 2022-23

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 19, 2021, Report of the Academic Planning and Policy Committee for changes to the 2022-23 Undergraduate Calendar, found at:
https://macdrive.mcmaster.ca/f/f8c97562ba16468bb250/
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

- Effective, September 2022, all Honours Biochemistry programs will be administered by the Faculty of Health Sciences
- Current Level 1 students, interested in applying to Honours Biochemistry for September 2022, will be informed that the program will be available as both an Hons.B.Sc. and Hons.B.H.Sc.
- The existing Hons.B.Sc. Biochemistry program will be phased out. Intake at Level 2 will be last available in September 2022
- In-course students will have the option to remain in the B.Sc. program through to graduation or transfer to the Hons.B.H.Sc. program. Final year students, scheduled to graduate in June 2022, will convocate with the Hons.B.Sc. degree at the Faculty of Science Convocation
- Program requirements updated to reflect new offerings and a change in requirements as determined by the department
- Minor housekeeping changes have been made to remove requirements no longer needed.
- Course Lists updated to include suitable offerings
- BIOCHEM 3N03, 3 X03, 3 Y03, $4 E A 3 \& 4 K 03$ have been deleted


### 2.0 Department of Biology

- As part of a reorganization of the Departmental program offerings and to align names to reflect core and specialist versions of programs, effective September 2022 the following changes will be made:
- Honours B.Sc. Biology - Physiology Core will be introduced as a new program
- Honours B.Sc. Molecular Biology and Genetics Core will be introduced as a new program
- Honours B.Sc. Biology will be renamed Honours Biology Core
- Honours Biodiversity \& Environmental Sciences program requirements updated to reflect new offerings. Course lists updated to include suitable offerings
- Honours Biology 'Core' programs will require an experiential course for degree completion
- Honours Biology - Research Specialization program requirements updated to reflect new offerings and a change in requirements
- Honours Biology - Physiology Research Specialization program requirements updated to reflect new offerings
- 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
- Honours Molecular Biology and Genetics Research Specialization program requirements updated to reflect new offerings. Changes continue in the coop program
- BIOLOGY 3VV3 \& MOLBIOL 3CC3 have been deleted


### 3.0 Department of Chemistry and Chemical Biology

- Minor in Sustainable Chemistry has been introduced.
- Honours B.Arts.Sc. in Sustainable Chemistry program has been introduced (Will be presented by Arts \& Science Program). The flexible, interdisciplinary program should be attractive to students seeking broader experiences crossing traditional disciplines. Program was developed in consultation with the Arts \& Science Program
- Honours B.Sc. in Integrated Science with a Concentration in Sustainable Chemistry program has been introduced. Program was developed in consultation with the School of Interdisciplinary Science
- Requirements for the Honours Chemistry program updated to reflect course changes
- Requirements for the Honours Sustainable Chemistry programs updated to reflect additional course list options and introduction of experiential learning course requirement
- CHEM 3EQ3 has been introduced, providing an experiential learning course for students in the Sustainable Chemistry programs


## School of Earth, Environment \& Society

- Honours Earth and Environmental Sciences program requirements updated to reflect new offerings and a change in requirements as determined by the School. Changes are reflected in coop program as well
- No substantive changes to the Honours Environmental Sciences program
- Environmental Sciences program requirements updated to reflect new offerings
- Four offerings have been introduced including: EARTHSC 2G03, EARTHSC 3P03, EARTHSC 4PA3, EARTHSC 4V03. These offerings expand the list of courses available for the Professional Geoscientist designation
- EARTHSC 4J03,4P03 \& ENVSOCTY3U03 have been deleted


### 5.0 School of Interdisciplinary Science

## Integrated Science (iSci)

- Introduction of new concentration in Sustainable Chemistry


## Life Sciences

- Requirements for Honours Life Sciences programs updated to reflect additional course options and course changes
- Minor housekeeping changes have been made to remove requirements no longer needed.
- LIFESCI 3LA3, 3LX3 have been introduced to offer more opportunities for students in laboratory experiences
- LIFESCI 4DD3 has been introduced, offering students a capstone experience exploring racial and health inequities.
- SCICOMM 2NM3 has been introduced and is cross-listed with PHYSICS 2NM3.


## Medical Radiation Sciences

- Program requirements have been modified to ensure curriculum reflects the national competency profile and students meet professional accreditation standards
- MEDRADSC 3LA3 \& 3LB3 have been introduced and replace MEDRADSC 3W03 \& 3BB3
- Minor housekeeping changes have been made to remove requirements no longer needed
- 6 units have been deleted: MEDRADSC 3BB3 \& 3W03
6.0 Department of Kinesiology
- KINESIOL 3W03, 4D03, 4TT3, 4Z03 have been introduced


### 7.0 Department of Mathematics and Statistics

- Requirements for Honours Actuarial and Financial Math (AFM) coop have been amended in order to mirror those of Honours Actuarial and Financial Math (AFM)
- Requirements for all Honours Math and Stats programs have been updated to include required computing course
- Requirement in Honours Mathematics and Physics in level IV for capstone experience have been eased and expanded to include both Math and Stats courses as well as Physics courses
- Effective September 2023, to better reflect program offerings and a reflection of degree focus, the following changes will be made:
- Honours B.Sc. Mathematics and Statistics - Mathematics Subplan will be renamed Honours Mathematics and Statistics - Mathematics Specialization. This change also will be reflected in the Co-op program
- Honours B.Sc. Mathematics and Statistics - Statistics Subplan will be renamed Honours Mathematics and Statistics - Statistics Specialization. This change will also be reflected in the Co-op program
- In-course students will be given the choice to remain in the subplan or transfer to the specialization
- STATS 2DA3 has been added and serves as a foundation course for the new STATS 3DA3 course. STATS 3DA3 has been added and replaces STATS 3DS3


### 8.0 Department of Physics and Astronomy

- Minor in Astrophysics is introduced to replace the Minor in Astronomy that will be phased out and last available in 2025
- Minor in Medical and Biological Physics is being introduced
- Requirements for all programs have been updated to reflect new offerings and changes in requirements
- Requirements for Minor in Physics updated to reflect new offerings and changes in requirements.
- Three new courses have been introduced using a new course code designation DATASCI: DATASCI 2G03 (replaces PHYSICS 2G03), DATASCI 3ML3 (replaces PHYSICS 3G03) and DATASCI 4X03 (administratively tied to ASTRON 4X03)
- Two offerings have been deleted: PHYSICS 2G03, PHYSICS 3G03


### 9.0 Department of Psychology, Neuroscience \& Behaviour

## Human Behaviour

- No substantive changes made to the Human Behaviour programs


## Neuroscience

- Program requirements updated to reflect new offerings and changes in requirements


## Psychology, Neuroscience \& Behaviour (PNB)

- Honours Psychology, Neuroscience and Behaviour programs requirements updated to reflect new offerings
- One course has been introduced: PNB 3A03
- Two courses have been deleted: PNB 4DD6 A/B, PSYCH 3H03

Minor in Psychology language updated to provide clarity for Honours Kinesiology students.

### 10.0 Faculty of Science

## Introductory Section:

- Language signalling availability of Honours Sustainable Chemistry program added as it should have been included last year
- Language to guide students transferring from Bachelor of Technology program and transfer credit has been added to provide clarity regarding process and assessment


## Level I Programs:

- Clarification of program progression rules for Honours Kinesiology


## Science Courses:

- Introduction of new subject code, Data Science. The code will be administered by the Faculty of Science


# McMaster University 

## SCIENCE

# Undergraduate Curriculum Addendum to <br> Undergraduate Council, for the 2022-2023 <br> Undergraduate Calendar 

January 3, 2022

## FACULTY OF SCIENCE REPORT TO SENATE

## SUMMARY OF MAJOR CURRICULUM CHANGES FOR 2022-2023

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 19, 2021, Report of the Academic Planning and Policy Committee for changes to the 2022-2023 Undergraduate Calendar, found at:
https://macdrive.mcmaster.ca/f/f8c97562ba16468bb250/

### 1.0 NEW PROGRAMS <br> N/A

2.0 PROGRAM CLOSURES

N/A

### 3.0 MAJOR REVISIONS:

3.1 Honours Biochemistry - Biomedical Research Specialization Co-op (B.Sc.)

Entry at Level III last available September 2022.
Effective September 2022, all Honours Biochemistry programs will be administered by the Faculty of Health Sciences. Students interested in applying to this program should see the Honours Biochemistry (B.H.Sc.) in the Faculty of Health Sciences section of the Calendar.
Students who enrolled prior to September 2022 are given the choice to remain in Honours Biochemistry - Biomedical Research Specialization Co-op (B.Sc.) or transfer into Honours Biochemistry - Biomedical Research Specialization Co-op (B.H.Sc.). Such students will graduate at a Faculty of Science convocation.

## Admission

Enrolment in this program is limited and possession of the published minimum requirements does not guarantee admission. 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 Biochemistry with a Grade Point Average of at least 5.0 and completion of the following courses:
12 units

- BIOCHEM 2B03 - Nucleic Acid Structure and Function
- BIOCHEM 2BB3 - Protein Structure and Enzyme Function
- BIOCHEM 2L06 A/B - Inquiry in Biochemical Techniques

3 units

- BIOLOGY 2C03-Genetics

3 units
from

- the Biochemistry Course List (See Program Note 6 below.)

6 units

- CHEM 2OA3 - Organic Chemistry I
- CHEM 2OB3 - Organic Chemistry II


## 1 course

- SCIENCE 2D00 - Skills for Career Success in Biochemistry (or SCIENCE 2C00)


## Program Notes

1. This is a five-level (year) co-op program which includes two eight-month work terms which must be spent in biochemistry related placements.
2. Students must be registered full-time and take a full academic workload, as prescribed by Level and Term.
3. Students are required to complete SCIENCE 2600 and SCIENCE 3600 before the first work placement and are strongly recommended to complete SCIENCE 2600 in Level 11 . Students are required to complete SCIENCE 2D00 (or SCIENCE 2C00) prior to the Fall Term of Level III. Students are required to complete SCIENCE 3D00 (or SCIENCE 3 COO ) before the first work placement.
4. Registration in an Honours Biochemistry program does not guarantee access to all courses. Some courses have program restrictions. There are Level II and III prerequisites for many Level III and IV courses. The prerequisites should be considered when choosing Level II and III courses.
5. Completion of one of BIOCHEM 4 F09 A/B, 4 T15 A/B or $4 Z 03$ is required in Level IV.
6. Both CHEMBIO 2A03 and 2P03 are highly recommended for students interested in pursuing an undergraduate thesis or graduate studies in biophysical chemistry.
Biochemistry Course List

- ANTHROP 2U03 - Plagues and People
- ANTHROP 3BD3 - The Black Death
- BIOCHEM 3BP3 - Practical Bioinformatics in the Genomics Era
- BIOCHEM 3CB3 - Emerging Discovery in Cell Biology
- BIOCHEM 3H03-Clinical Biochemistry
- BIOCHEM 3LA3-Advanced Biochemistry Techniques
- BIOCHEM 3MI3 - Microbial Interactions
- BIOCHEM $3 \times 03$
- BIOCHEM 3Y03
- BIOCHEM 3Z03 - Structural Determination and Analysis of Macromolecules
- BIOCHEM 4EA3
- BIOCHEM 4H03 - Biotechnology and Drug Discovery
- BIOCHEM 4J03-Immunological Principles in Practice
- BIOCHEM 4M03 - Cellular and Integrated Metabolism
- BIOCHEM 4NO3 - Molecular Membrane Biology
- BIOCHEM 4Q03 - Biochemical Pharmacology
- BIOCHEM 4S03-Introduction to Molecular Biophysics
- BIOCHEM 4 YO3
- BIOLOGY 2B03-Cell Biology
- BIOLOGY 2EE3 - Introduction to Microbiology and Biotechnology
- BIOMEDDC 2C03-Exploring Careers in Biomedical Sciences
- BIOMEDDC 2W03 - Write Right for Your Science: Scientific Writing for the Biomedical Sciences
- CHEM 2A03 - Quantitative Chemical Analysis
- CHEM 2AA3
- CHEM 2P03 - Applications of Physical Chemistry
- CHEMBIO 2A03 - Introduction to Bio-Analytical Chemistry
- CHEMBIO 2P03 - Physical Chemistry Tools for Chemical Biology
- CHEMBIO 3OA3 - Organic Mechanistic Tools for Chemical Biology
- HTHSCI 3103 - Introductory Immunology
- HTHSCI 3K03 - Introductory Virology
- MOLBIOL 3003 - Microbial Genetics

Requirements For Students Who Enter in September 2022 or Prior
120 units total (Levels I to V), of which no more than 48 units may be Level I
Level I: 30 Units
30 units

- Completed prior to admission to the program

Level II: 30 Units
30 units
Completion of Level II Honours Biochemistry, including completion of:

- SCIENCE 2C00 - Skills for Career Success in Science
(See Program Note 3 above.)
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:
3 units
- STATS 2B03 - Statistical Methods for Science

3 units

- BIOCHEM 3D03 - Metabolism and Regulation

3 units
from

- Level III, IV Biochemistry, Biology, Chemical Biology, Chemistry, Molecular Biology courses
- HTHSCI 3 IO3 - Introductory Immunology
- HTHSCI 3K03 - Introductory Virology
- HTHSCI 4II3 - Advanced Concepts in Immunology
- HTHSCI $4 \mathrm{OO3}$ - Principles of Virus Pathogenesis

3 units
from

- the Biochemistry Course List (See Program Note 6 above.)

3 units

- Electives

12 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 3WTO - 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

- BIOCHEM 4E03-Gene Regulation in Stem Gells and Development
- Level IV Biochemistry courses, excluding:

```
o BIOCHEM 4F09
o BIOCHEM 4T15 A/B
o BIOCHEM 4ZO3
```

9 units
from
the Biochemistry Course List (See Program Note 6 above.)
12-15 units
from

- Levels III, IV Biochemistry, Biology, Chemical Biology, Chemistry, Molecular Biology courses
- HTHSCI 3103 - Introductory Immunology
- HTHSCI 3K03 - Introductory Virology
- HTHSCI 4II3 - Advanced Concepts in Immunology
- HTHSCI 4003 - Principles of Virus Pathogenesis
which must include one of:
- BIOCHEM 4F09 A/B - Senior Thesis
- BIOCHEM 4T15 A/B - Senior Thesis
- BIOCHEM 4ZO3 - Senior Project (See Program Note 5 above.)
3-6 units
- Electives

Spring/Summer Term:
Work Term
1 course

- SCIENCE 4WTO - 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 5WTO - Science Co-op Work Term

Winter Term: 15 units:
6 units
from

- the Biochemistry Course List (See Program Note 6 above.)

6 units
from

- Levels III, IV Biochemistry, Biology, Chemical Biology, Chemistry, Molecular Biology courses
- HTHSCI 3103 - Introductory Immunology
- HTHSCI 3K03 - Introductory Virology
- HTHSCI 4II3 - Advanced Concepts in Immunology
- HTHSCI $4 \mathrm{OO3}$ - Principles of Virus Pathogenesis

3 units

- Electives

Co-op Program Chart (For Students who Enter in September 2022 or Prior)

|  | FALL TERM <br> (September to December) | WINTER TERM <br> (January to April) | SPRING/SUMMER <br> TERM <br> (May to August) |
| :--- | :---: | :---: | :---: |
| Level III | 15 units from | Work Term | Work Term |


|  | Academic Level III <br> and <br> SCIENCE 2C00_(if not <br> completed) <br> and SCIENCE 3C00 | SCIENCE 3WT0 | SCIENCE 3WT0 |
| :--- | :---: | :---: | :---: |
| Level IV | 30 units from Academic Levels III and IV |  | Work Term <br> SCIENCE 4WT0 |
| Level V | Work Term <br> SCIENCE 5WT0 | 15 units from Academic <br> Level IV |  |

Justification 3.1: Co-op course changes allow for a cohort of Biochemistry students to enroll in career courses in parallel to students in Science but within their own course. Support for and tracking of these students will be facilitated by this.

### 3.2 Concurrent Certificate in Urban Studies and Planning (USP) School of Earth, Environment \& Society

The Concurrent Certificate in Urban Studies and Planning is administered by the School of Earth, Environment \& Society (Faculty of Science) (formerly the School of Geography and Earth Sciences).
General Science Building, Room 206, ext. 23534
ugadmin@mcmaster.ca
The Concurrent Certificate in Urban Studies \& Planning (USP) will provide students with an opportunity to develop expertise in the related fields of urban geography and urban planning.

Certificate Requirements
Any student in an undergraduate program at McMaster may declare the USP Certificate at the time of graduation providing they satisfy the following requirements.

Requirements
18 units total
3 units

- ENVSOCTY 2UI3 - The Urban Experience

9-12 units
from

- ENVSOCTY 3MF3 - Urban Field Camp
- ENVSOCTY 3UP3 - Urban Planning
- ENVSOCTY 4UD3 - Special Topics in Urban Planning
- ENVSOCTY 4US3 - Sustainable Cities

3-6 units
from

- ENVSOCTY 3UW3 - Cities of the Developing World
- ENVSOCTY 4LP3 - Transport Policy
- ENVSOCTY 4MS3 - Independent Study
- ENVSOCTY 4MT6 A/B - Senior Thesis
- HLTHAGE 4S03 - Health and the Unfairly Structured City

Justification 3.2: this change provides greater flexibility for students completing the certificate. It also permits students to count all four of the core urban courses currently offered within SEES towards the concurrent certificate

## FACULTY OF SCIENCE

## REPORT TO UNDERGRADUATE COUNCIL

## SUMMARY OF CURRICULUM CHANGES FOR 2022-23

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 19, 2021, Report of the Academic Planning and Policy Committee for changes to the 2022-23 Undergraduate Calendar, found at:
https://macdrive.mcmaster.ca/f/f8c97562ba16468bb250/
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

- New courses SCIENCE 2D00 \& 3D00 will allow co-op students to cohort. Courses are administratively tied to those taught to students in Science. Support for and tracking of these students will be facilitated by this.


### 2.0 Department of Biology

- Change to offering details in BIOLOGY 3SA3.
3.0 Department of Chemistry and Chemical Biology
- No substantial changes
4.0 School of Earth, Environment \& Society
- Change to course requirements in Concurrent Certificate in Urban Studies \& Planning. Change provides greater flexibility for students completing the certificate. It also permits students to count all four of the core urban geography courses currently offered within SEES towards the concurrent certificate


### 5.0 School of Interdisciplinary Science

- Housekeeping changes to course prerequisites and/or delivery mode
6.0 Department of Kinesiology
- Housekeeping changes to course prerequisites and/or delivery mode
7.0 Department of Mathematics and Statistics
- No substantial changes
8.0 Department of Physics and Astronomy
- No substantial changes
9.0 Department of Psychology, Neuroscience \& Behaviour
- Housekeeping changes to program course offerings, course descriptions, prerequisites \& delivery mode information


## Faculty of Science

## Introductory Section:

- Housekeeping change describing new SCIENCE 2D00 \& 3D00 courses for Biochemistry co-op students.


## Level I Programs:

- No substantial changes

Science Courses:

- 2 courses added: SCIENCE 2 D00 \& 3D00, offered to students in Honours Biochemistry Biomedical Research Specialization Co-op program. Allows cohort building, support \& tracking of students.


# Faculty of Social Sciences Undergraduate Curriculum Report to Undergraduate Council FOR THE 2022-2023 UNDERGRADUATE CALENDAR 

## Approved

by
The Faculty of Social Sciences
Faculty Council

November 16, 2021

## REPORT TO SENATE

## FACULTY OF SOCIAL SCIENCES

## SUMMARY OF MAJOR CURRICULUM CHANGES FOR 2022-2023

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 2021 Faculty of Social Sciences Report to Undergraduate Council for changes to the 2022-2023 Undergraduate Calendar, found at:
https://macdrive.mcmaster.ca/d/b8df016956f2453a8f78/

### 1.0 NEW PROGRAMS: N/A

2.0 PROGRAM CLOSURES:
3.0 MAJOR REVISIONS:
3.1 The School of Labour Studies is proposing that the Combined Honours. B.A., the Honours. B.A., the B.A. degrees and the minor have the name changed from "Labour Studies" to "Work and Labour Studies." The details of this change are reflected in the full Faculty of Social Sciences Curriculum Report under Labour Studies at (2.1-2.4).

The program name changes are as follows:
Combined Honours Labour Studies and Another Subject (B.A.) to Combined Honours Work and Labour Studies and Another Subject (B.A.)

Honours Labour Studies (B.A.) to Honours Work and Labour Studies (B.A.)
Labour Studies (B.A.) to Work and Labour Studies (B.A.)
Minor in Labour Studies to Minor in Work and Labour Studies
Justification - The School of Labour Studies is proposing to rename their programs and the subject code for all of the courses. For many years, too many students - and parents - have clearly not known what "labour" means; many think the program is associated with midwifery. The name change reflects the focus of studies within the School of Labour Studies, and it will provide better context so that people will understand what we study. This is turn should help attract more students to the programs.

## Faculty of Social Sciences REPORT TO UNDERGRADUATE COUNCIL SUMMARY OF CURRICULUM CHANGES FOR 2022-2023

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 2021 Faculty of Social Sciences Report to Undergraduate Council for changes to the 2022-2022 Undergraduate Calendar, found at:
https://macdrive.mcmaster.ca/d/b8df016956f2453a8f78/

1. Faculty of Social Sciences

- Revision to Economics I to include the new ECON 1ME3 course that deals with mathematical concepts central to Economics and the removal of the other Level 1 mathematics and statistics course requirements.
- Revision to Level 1 course lists for Economics I, Honours Health and Society I, and Social Sciences I to reflect additions and deletions of courses as presented by the departments.
- Revision to the Concurrent Certificate in Social Innovation to reflect additions and deletions of courses in the course lists as presented by the departments
- Addition of six new courses for a new Affiliated Certificate with Mohawk College in Disability Management (SOCSCI 2FD3, 2IS3, 2PN3, 2WF3, 2LI3, 2CP3)
- Revision to the prerequisites and/or antirequisites for five existing courses (SOCSCI 1SS3, 2ELO, 2MR3, 3FIO, 3PIO)
- Deletion of one course (SOCSCI 4ID3)
- Revision to Department notes to include information regarding the introduction of a new Affiliated Certificate in Disability Management.
- Update to Faculty and Staff members
- Revision to the High school admission requirements, beginning in the 2023 admission cycle, for the Economics I program to include Calculus \& Vectors as a required course to align with the Business I admission requirements.
- Updates to the Faculty of Social Sciences Introductory section to reflect curriculum changes.

2. Department of Anthropology

- Revisions to all Anthropology programs and the Minor to reflect course title changes
- Addition of four new courses (ANTHROP 2HI3, 3ET3, 4CL3, 4MM3)
- Revisions to 14 courses (ANTHROP 1AB3, 2AD3, 2F03, 2FF3, 2MA3, 3LL3,3P03, 3PD3, 3TR3, 4B03, 4BB3, 4DD3, 4G03, 4GG3)
- Deletion of one Cross-listed course ANTHROP 1AB3 with SCAR 1R03
- Deletion of one course (ANTHRO 3HI3)
- Update of Department notes
- Update of Faculty Members

3. Community Engagement

- Revision to the description of the Minor to provide clarity for students
- A Note is being added to list the courses under CMTYENGA subject as they were not previously listed
- Revisions to course lists to reflect changes from other departments

4. Department of Economics

- Revisions to programs:
- Addition of the new Econ 1ME3 course to Level II Admission requirements and program notes
- Change to Alternative admission to programs, distinguishing between current BA Economics students and those students seeking transfer from another program or Faculty.
- Addition of notes to clarify the mathematics content of ECON 1ME3 and to suggest also taking MATH 1MM3.
- Housekeeping updates to the Minor and two additional notes allowing substitutions of COMMERCE 1DA3 and ARTSSCI 2E03
- Addition of one new course covering the necessary mathematical concepts for our Economics programs (ECON 1ME3)
- Revisions to twelve courses:
- Addition of ECON 1ME3 to prerequisite requirements (ECON 2B03, 2HH3, 2Z03, 2ZZ3, 3G03)
- Housekeeping to two courses: (ECON 2CC3, 2J03)
- Updates to cross-listed courses from School of Labour Studies with new subject code: (ECON 2Z03, 2T03)
- Updating course description for ECON 2Q03
- Updating course delivery to on-line for ECON 2K03 and 2P03
- Update of Faculty Members

5. School of Earth, Environment \& Society

- No revisions to programs
- All course revisions and additions are submitted and approved by Faculty of Science

6. Institute on Globalization and the Human Condition

- Revisions to course lists in the minor to reflect course additions and deletions from other departments.
- Removal of courses that have been deleted and no longer listed in previous calendar

7. Department of Health, Aging \& Society

- Addition of the word "strongly" in the Level II admission requirements for Honours Health and Society Specialization in Mental Health and Addiction
- Housekeeping: Font consistency for "course list(s) in program notes
- Correction of the course code for ENGLISH 3NH3 in all course lists
- Housekeeping changes to course lists to remove courses previously deleted and no longer in the calendar and addition of new courses from other departments
- Housekeeping change to the Minor in Mental Health, Addiction and Society regarding spelling of Faculty
- Revision to four courses:
- Change to prerequisite (HLTHAGE 4JO3)
- Revision to course description (HLTHAGE 2HI3)
- Updating prerequisites (HLTHAGE 2HI3, 3HP3, 4M03) to reflect Environment and Society changes
- Deletion of one course (HLTHAGE 2G03)
- Update to Faculty Members

8. Indigenous Studies Program

- Revisions to programs deleting courses no longer offered and addition of new courses
- Addition of three new courses (INDIGST 4C03, 4G03, 4J03)
- Revisions to 18 existing courses (CAYUGA 2Z03, INDIGST 2A03, 2B03, 2BB3, 2C03, 2D03, 2F03, 2G03, 2H03, 2J03, 2K03, 2M03, 2MM3, 2U03. 3CC3, 4L03, 4RI3, 4T06)
- Deletion of two courses (INUKTUT 1Z03, 2ZO3)
- Revisions to Department notes
- Update to Faculty Members

9. School of Labour Studies

- Name change to all Honours BA, Combined Honours BA, BA programs and Minor in School of Labour Studies to "Work and Labour Studies".
- Housekeeping throughout to reflect this name change in all Honours BA, Combined Honours BA, and BA programs and the Minor.
- All course subject codes changed from LABRST to WRKLAB, resulting in course additions and deletions as follows:
- Addition of 25 courses under the new course code (WRKLAB 1D03, 1E03, 2A03, 2G03, 2H03, 2J03, 2M03, 2W03, 3A03, 3B03, 3C03, 3D03, 3E03, 3K03, 3L03, 3M03, 3P03, 3Q03, 3T03, 4A06, 4C03, 4F03, 4G03, 4H03, 4J03)
- Deletion of 25 courses under the old course code (LABRST 1D03,1E03, 2A03, 2G03, 2H03, 2J03, 2M03, 2W03, 3A03, 3B03, 3C03, 3D03,3E03, 3K03, 3L03, 3M03, 3P03, 3Q03, 3T03, 4A06, 4C03, 4F03, 4G03, 4H03, 4J03)
- Addition of one new course (WRKLAB 1A03)
- Update to Faculty Members

10. Department of Political Science

- Addition of a new Certified International Experience to the two Specialization programs - Global Citizenship and Public Law and Judicial Studies.
- Addition of two new courses (POLSCI 4AL3 4WS3)
- Revisions to ten existing courses:
- The mode of course delivery is changing for (POLSCI 1AA3, 1AB3, 2NN3, 3NN3, 3V03)
- Prerequisite and/or description changes for (POLSCI 3JR3, 3LL3, 3Q03, 3WP3, 4GC3)
- Deletion of two courses (POLSCI 4JJ3, 4KK3)
- Revision to Department notes, specifically Fields of Study, removal of inactive courses previously deleted more than three years ago, housekeeping regarding addition of new course
- Update to Faculty Members.

11. Department of Psychology, Neuroscience and Behaviour

- Revision to programs, removal of program requirements prior to September 2020
- Addition of new course added by Faculty of Science to course lists
- All course revisions and additions are submitted and approved through the Faculty of Science

12. Department of Religious Studies

- Revisions to programs and minors including Interdisciplinary minors administered by department (Jewish Studies, Muslim Studies) to reflect addition and deletion of new courses
- Addition of 12 new courses:
- New re-levelled Sanskrit courses replace previous 6-unit courses (SANSKRIT 2A03, 2B03, 3A03, 3B03)
- New courses (SCAR 2BM3, 2NH3, 2SB3, 2SK3, 3RC3, 3SA3, 3SB3, 3SM3)
- Revisions to seven existing courses (ARABIC 2AA3, SCAR 2AA3, 2EE3, 2RN3, 3BW3, 3JJ3, 3LL3)
- Deletion of one cross-listed course (SCAR 1R03)
- Deletion of six courses (SCAR 2VR3, 3JF3, 3SA6, 4B06, SANSKRIT 3A06, 4B06)
- Update to Faculty Members


## 13. School of Social Work

- Revision to application instructions and requirements for Honours Social Work and Bachelor of Social Work
- Revision of program course lists to reflect new courses, course deletions and removal of courses previously deleted and no longer in the calendar
- Revisions to two existing courses (SOCWORK 4C03, 4SA3)
- Deletion of three courses (SOCWORK 3B03, 3L03, 4SB3)
- Revision to Minor in Social Justice and Inclusive Communities to reflect course additions and deletions
- Update to Faculty members


## 14. Social Psychology Program

- Revisions to program course lists to reflect addition of new courses and deletions.
- Revision to program requirements reducing number of required courses from Multidisciplinary list
- SOCPSY 2C03 moved from SOCPSY electives to Multidisciplinary List
- Addition of one new course to address IQAP recommendations (SOCPSY 3K03)
- Revisions to the prerequisite for existing course (SOCPSY 4G03)
- New Department note added.
- Housekeeping to course lists, removing courses previously deleted by other departments and have since been removed from previous calendar
- Update to Faculty members.


## 15. Department of Sociology

- Revisions to all Level II Program admissions statements deleting SOCIOL 1A06 and updating program notes.
- Deletion of program requirements for all students who entered program prior to 2017.
- Addition of a Multidisciplinary component to all minors, excluding the Minor in Sociology
- Removal of references to SOCIOL 1A06 from Minor in Sociology
- Addition of one new course (SOCIOL 3RI3)
- Revisions to 71 existing courses due to the removal of references to the old 6 -unit courses
- Deletion of three courses (SOCIOL 2103, 3AC3 3Z03)
- Revision to Department notes updating new course additions and deletions to course lists
- Update to Faculty members

16. Interdisciplinary Minors

- Revisions to all course lists for Jewish Studies, Muslim Studies, and Social Justice and Inclusive Communities to reflect course additions and deletions as presented by other departments.
- Housekeeping removal of courses previously deleted and no longer in previous calendar


## REPORT TO SENATE

## FACULTY OF SOCIAL SCIENCES

## ADDENDUM TO THE

SUMMARY OF MAJOR CURRICULUM CHANGES FOR 2022-2023
Below is the summary of substantive curriculum changes being proposed by the Faculty of Social Sciences in this Addendum. For complete review of all of the changes, please refer to the Addendum to the November 2021 Faculty of Social Sciences Report to Undergraduate Council for changes to the 2022-2023 Undergraduate Calendar, found at: https://macdrive.mcmaster.ca/d/b8df016956f2453a8f78/

### 1.0 NEW PROGRAMS: N/A

2.0 PROGRAM CLOSURES: N/A

### 3.0 MAJOR REVISIONS: N/A

## Faculty of Social Sciences <br> ADDENDUM TO THE <br> REPORT TO UNDERGRADUATE COUNCIL SUMMARY OF CURRICULUM CHANGES FOR 2022-2023

Below is a summary of substantive curriculum changes being proposed by the Faculty of Social Sciences in this Addendum. For complete review of all of the changes, please refer to the Addendum to the Faculty of Social Sciences Report to Undergraduate Council for changes to the 2022-2022 Undergraduate Calendar, found at: https://macdrive.mcmaster.ca/d/b8df016956f2453a8f78/

1. Department of Economics

- Revisions to the Level II entry requirements for Honours Economics and Computer Science (B.A.) to:
i. To reduce the required number of Level 1 Computer Science courses from four to two to enter Level II.
ii. to add a requirement to complete the remaining two Level 1 Computer Science courses in Level II of the program.
iii. to raise the required average that must be achieved in the two Level 1 Computer Science courses to 7.0.

These changes will spread out the completion of the required Level 1 Computer Science courses and will align the admission requirements for entry to Level II with the competitive entry requirements to other Combined Honours programs with Computer Science.

## 2. Department of Political Science

- Addition of a course (POLSCI 3PA3) to the Global Citizenship Level III Course List in the Honours Political Science Specialization in Global Citizenship (B.A.) program.

3. Faculty of Social Sciences

- Revision to the prerequisite and small cap increase for one course (SOCSCI 1RM3) to permit a small number of non-Social Sciences students to enrol in this course.


# Faculty of Social Sciences <br> REPORT TO UNDERGRADUATE COUNCIL SUMMARY OF CURRICULUM CHANGES FOR 2022-23 ADDENDUM <br> January 11, 2022 <br> Approved by Faculty of Social Sciences 

## ECONOMICS

### 1.0 NEW PROGRAMS: N/A

### 2.0 REVISIONS TO EXISTING PROGRAMS:

### 2.1 Honours Economics and Computer Science (B.A.)

Admission
Enrollment in this program is limited and possession of the published minimum requirements does not guarantee admission. Selection is based on academic achievement, completion of any Level I program with a Grade Point Average of at least 5.0 , including an average of at least 5.0 in ECON 1B03 (or 1BX3) and 1BB3 (or 1BA3), and a weighted average of at least 5.0 in ECON 1B03 (or 1BX3), ECON 1BB3 (or 1BA3); MATH 1A03, 1AA3, and 1B03; and an average of at least 7.0 in COMPSCI 1MD3, 1JC3, $1 \times \mathrm{AC}$, and 1MD3 1DM3; MATH 1A03, 1AA3, and 1B03. For continuation in the program, see Minimum Requirement for Entering and Continuing in a Program Beyond Level 1.

Notes:

1. Alternate admission requirements:
a) For students enrolled in Level II or III of BA Economics, admission to Levels II, III and IV of Honours Economics programs requires a minimum GPA of 5.0 and an average of at least 5.0 in ECON 2Z03, 2ZZ3, (or 2G03, 2GG3), 2H03 and 2HH3. Students enrolled in Levels II or III of BA Economics cannot gain admission to Honours Economics programs by upgrading ECON 1B03 (or 1BX3) or 1BB3 (or 1BA3).
b) For students in another program beyond Level I, admission to Levels II, III and IV of Honours Economics programs normally requires a minimum GPA of 5.0 and an average of at least 5.0 in ECON 2ZO3, 2ZZ3, (or 2G03, 2GG3), 2H03 and 2HH3. Students cannot gain admission to Honours Economics programs by upgrading ECON 1B03 (or 1BX3) or 1BB3 (or 1BA3). However, if a student enrolled in Level II or above of another program has a minimum GPA of 5.0 and has completed ECON 1B03 and 1BB3 with an average of at least 5.0 on their first attempt, they will be considered admissible.
2. COMMERCE 2FA3 may be substituted for ECON 2103 and COMMERCE 2QA3 may be substituted for ECON 2B03.
3. Students with prior credit in a statistics course recognized as an alternative to ECON 2B03 can take ECON 3EE3 (formerly 3U03) only if they achieved a grade of at least $\mathrm{B}+$ in an alternative statistics course. There is no such grade requirement for ECON 3E03 (formerly 3WW3). See ECON 3EE3 (formerly 3U03) in the Course Listings section of this Calendar for a list of recognized alternative statistics courses.
4. Seats in the required Level 1 Computer Science courses are limited and will be allocated by the Economics Department.
5. COMPSCI 1DM3 and 1XC3 must be completed by the end of Level II.

## Requirements

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

- the Level I program completed prior to admission to the program.
(See Admission above.)
6 units
- ECON 2Z03 - Intermediate Microeconomics I
- ECON 2ZZ3 - Intermediate Microeconomics II

6 units

- ECON 2H03 - Intermediate Macroeconomics I
- ECON 2HH3 - Intermediate Macroeconomics II


## 6 units

- COMPSCI 1DM3 - Discrete Math for Computer Science
- COMPSCI 1XC3 - Computer Science Practice and Experience: Development Basics
(See Note 5 above)
6 units
- ECON 4F03 - Methods of Inquiry in Economics
- ECON 4A03 - Honours Economic Analysis or
- ECON 4FF3 - Research Methods in Economics
- ECON 4AA3 - Economic Specialist Seminar 18 units Levels II, III, IV Economics with no more than six units from the following courses:
- ECON 2A03 - Economics of Labour-Market Issues
- ECON 2C03
- ECON 2D03 - Economic Issues
- ECON 2E03
- ECON 2F03
- ECON 2103 - Financial Economics
- ECON 2J03-Environmental Economics
- ECON 2NO3 - Public Policy Toward Business
- ECON 2P03 - Economics of Professional Sports
- ECON 2Q03 - Economics of Bad Behaviour
- ECON 2T03-Economics of Trade Unionism and Labour (See Note 2 above.)
18 units
from
- COMPSCI 2AC3 - Automata and Computability
- COMPSCI 2C03 - Data Structures and Algorithms
- COMPSCI 2DB3 - Databases
- COMPSCI 2GA3 - Computer Architecture
- COMPSCI 2LC3 - Logical Reasoning for Computer Science
- COMPSCI 2ME3 - Introduction to Software Development
- COMPSCI 2SD3 - Concurrent Systems
- COMPSCI 2XC3 - Computer Science Practice and Experience: Algorithms and Software Design
9 units
from
- COMPSCI 3AC3 - Algorithms and Complexity
- COMPSCI 3MI3 - Principles of Programming Languages
- COMPSCI 3NO3-Computer Networks and Security
- COMPSCI 3SH3 - Computer Science Practice and Experience: Operating Systems
- COMPSCI 3TB3 - Syntax-Based Tools and Compilers
- COMPSCI 4HC3 - Human Computer Interfaces
- COMPSCI 4WW3 - Web Systems and Web Computing

3 units

- Levels III or IV Computer Science except COMPSCI 4ZP6 A/B 6 units
- STATS 2D03 - Introduction to Probability
- STATS 2MB3 - Statistical Methods and Applications or
- ECON 3EE3 - Econometrics I (or ECON 3E03 (formerly 3WW3))
- ECON 2B03 - Analysis of Economic Data (See Note 3 above.)
1812 units
- Electives

Justification: The entry requirements to this program have had too many required courses leaving no room for electives in Level I. The changes permit students to spread out the completion of the required Level 1 Computer Science courses The admission requirements to level 2 have not aligned with the competitive entry requirements to other Combined Honours programs with Computer Science and therefore the required average to be achieved in the first two required Computer Courses has been raised to line up more closely to the requirements of the other programs.

### 3.0 NEW COURSES: N/A

### 4.0 REVISION TO EXISTING COURSES: N/A

POLITICAL SCIENCE

### 1.0 NEW PROGRAMS: N/A

### 2.0 REVISIONS TO EXISTING PROGRAMS:

### 2.1 Honours Political Science Specialization in Global Citizenship (B.A.)

Admission
Enrollment 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 on any Level I program with a Grade Point average of at least a 5.0 including a grade of C or greater in POLSCI 1AB3 (or 1G06 A/B). Students are strongly encouraged to complete POLSCI 1AA3 and GLOBALZN 1A03 in Level I (See Note 5 below). For continuation in the program, see Minimum Requirements for Entering and Continuing in a Program Beyond Level I. Notes

1. Students should be alerted to those Levels II and III courses that are required to qualify for a number of Level IV courses. Students who wish to enter courses but who lack the necessary prerequisites must obtain the permission of the instructor.
2. POLSCI 2NN3, 3NN3 and POLSCI 2006 A/B are required for students enrolled in Honours Political Science programs and they are recommended for students in the B.A. program.
3. Students may take a maximum of 12 units of Level IV Political Science and will be removed from any excess units of Level IV Political Science unless permission is granted by the Department. Additional units of Level IV Political Science may not be used as electives.
4. POLSCI $4 Z 06$ A/B may be selected if topic relates to Global Citizenship.
5. Students who have not completed POLSCI 1AA3 or GLOBALZN 1A03 in Level I should do so by the end of Level II.
6. Certified International Experience: Students in the Global Citizenship Specialization may apply for the optional Certified International Experience (CIE) to be completed at a partner University in the United Kingdom. Upon completion of this international exchange opportunity, students will receive a formal "parchment" from the partner university as well as a notation on the completed courses that will appear on their McMaster transcript. Completion of the CIE will also satisfy the "study abroad" component of the Global Citizenship Experiential requirement. Students may contact the Global Citizenship program advisor for details on the application process.

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

- the Level I program completed prior to admission to the program (See Admission above.)
12 units
- POLSCI 2I03-Global Politics
- POLSCI 2J03 - Global Political Economy
- POLSCI 2006 A/B - Political Theory

3 units

- POLSCI 2D03 - Canadian Democracy
or
- POLSCI 2M03 - Governance, Representation, and Participation in Democracies
6 units
- POLSCI 2NN3 - Politics by Design
- POLSCI 3NN3 - Statistical Analysis of Primary Data

18 units
Global Citizenship Experiential requirement
A.

One term abroad taking equivalent of 9 units from courses similar to those on Global Citizenship Course List and 9 units from the Global Citizenship Level III Course List
9 units

- Take abroad
and
9 units
from
- POLSCI 3C03 - Government and Politics of Indigenous People
- POLSCI 3CC3 - Political Authority: 20th-Century Political Theory
- POLSCI 3EE3 - International Relations: North-South
- POLSCI 3G03 - Ethnicity and Multiculturalism: Theory and Practice
- POLSCI 3GC3 - Politics of a Dying Planet
- POLSCI 3H03 - Honours Issues in Comparative Politics
- POLSCI 3K03 - Migration and Citizenship: Canadian, Comparative and Global Perspectives
- POLSCI 3KK3 - Genocide: Sociological and Political Perspectives
- POLSCI 3LB3 - Globalization and the World Order
- POLSCI 3LC3 - Southeast Asian Politics
- POLSCI 3LL3 - Development and Public Policy
- POLSCI 3PB3 - Politics from Below
- POLSCI 3PG3 - Political Geography
- POLSCI 3Q03 - The Causes of War
- POLSCI 3RF3 - The Charter of Rights and Freedoms
- POLSCI 3V03 - Gender and Politics
- POLSCI 3VV3 - Democratic Theory
- POLSCI 3Y03 - Democratization and Human Rights Or B.

Two terms abroad taking 18 units of courses similar to those on the Global Citizenship Level III Course List
Or
C.

POLSCI 3WP3 and 15 units from the Global Citizenship Level III Course List 3 units

- POLSCI 3WP3 - Working in Politics AND 15 units from
- POLSCI 3C03-Government and Politics of Indigenous People
- POLSCI 3CC3 - Political Authority: 20th-Century Political Theory
- POLSCI 3EE3 - International Relations: North-South
- POLSCI 3G03 - Ethnicity and Multiculturalism: Theory and Practice
- POLSCI 3GC3 - Politics of a Dying Planet
- POLSCI 3H03 - Honours Issues in Comparative Politics
- POLSCI 3K03 - Migration and Citizenship: Canadian, Comparative and Global Perspectives
- POLSCI 3KK3 - Genocide: Sociological and Political Perspectives
- POLSCI 3LC3 - Southeast Asian Politics
- POLSCI 3LB3 - Globalization and the World Order
- POLSCI 3LL3 - Development and Public Policy
- POLSCI 3PB3 - Politics from Below
- POLSCI 3PG3 - Political Geography
- POLSCI 3Q03 - The Causes of War
- POLSCI 3RF3 - The Charter of Rights and Freedoms
- POLSCI 3V03-Gender and Politics
- POLSCI 3VV3 - Democratic Theory
- POLSCI 3Y03-Democratization and Human Rights 3 units
- POLSCI 4GC3 - Advanced Issues in Global Citizenship 9 units
- From the Global Citizenship Level IV Course List

0-3 units

- GLOBALZN 1A03 - Global Citizenship (See Note 5)

0-3 units

- POLSCI 1AA3 - Government, Politics, and Power (See Note 5)

36-39 units

- Electives, of which no more than 6 units may be from Political Science Global Citizenship Level III Course List
- POLSCI 3C03-Government and Politics of Indigenous People
- POLSCI 3CC3 - Political Authority: 20th-Century Political Theory
- POLSCI 3EE3 - International Relations: North-South
- POLSCI 3G03 - Ethnicity and Multiculturalism: Theory and Practice
- POLSCI 3GC3 - Politics of a Dying Planet
- POLSCI 3H03 - Honours Issues in Comparative Politics
- POLSCI 3K03 - Migration and Citizenship: Canadian, Comparative and Global Perspectives
- POLSCI 3KK3 - Genocide: Sociological and Political Perspectives
- POLSCI 3LB3 - Globalization and the World Order
- POLSCI 3LC3 - Southeast Asian Politics
- POLSCI 3LL3 - Development and Public Policy
- POLSCI 3PA3 - Politics of Pandemics
- POLSCI 3PB3 - Politics from Below
- POLSCI 3PG3 - Political Geography
- POLSCI 3Q03 - The Causes of War
- POLSCI 3RF3 - The Charter of Rights and Freedoms
- POLSCI 3V03-Gender and Politics
- POLSCI 3VV3 - Democratic Theory
- POLSCI 3Y03 - Democratization and Human Rights

Global Citizenship Level IV Course List

- POLSCI 4CF3 - Canadian Foreign Policy
- POLSCI 4D06 A/B - International Politics
- POLSCI 4GG3 - Conceptual Issues in Global Politics
- POLSCI 4HR3 - Human Rights
- POLSCI 4JJ3-Cosmopolitanism
- POLSCI 4KB3 - Non-Western International Relations
- POLSCI 4KC3 - Comparative Democratization
- POLSCI 4KK3 - Advanced Issues in Global Security
- POLSCI 4LA3 - Politics in Latin America
- POLSCI 4NN3 - Studies in Global Political Economy
- POLSCI 4PE3 - Global Political Ecology
- POLSCI 4QQ3 - Issues in International Politics
- POLSCI 4UF3 - US Foreign Policy
- POLSCI 4Y03 - Domination and Decolonization
- POLSCI 4YR3 - Child/Youth Rights and Security in Global Political Perspective
- POLSCI 4Z06 A/B - Honours Essay (see note 4)

Justification: Inclusion of a course with content that is very relevant to global citizenship in the time of the pandemic

### 3.0 NEW COURSES: N/A

3.1 POLSCI 4ST3 Special Topics in Contemporary Politics

3 unit(s)
This Level IV seminar course will deal with a selected topic concerning an
emerging and important issue in the field and in political life.

Prerequisite: Registration in Level III or above
Three Hours; one term
Format: Blended (including lectures and online)
Enrollment Cap: 25
Reserve Capacities: N/A
Justification: This course was previously offered on Dean's Letter of Permission and we would like to add this to our regular course offerings.

### 4.0 REVISION TO EXISTING COURSES: N/A

$* * * * * * * * * * * * * * * * * * * ~$
Faculty of Social Sciences

### 1.0 NEW PROGRAMS: N/A

2.0 REVISIONS TO EXISTING PROGRAMS: N/A

### 3.0 NEW COURSES: N/A

### 4.0 REVISION TO EXISTING COURSES:

### 4.1 SOCSCI 1RM3 - How do we Know? Doing Social Sciences Research

 3 unit(s)This course provides students with a glimpse in at the diversity among the types of research methods used within the social sciences. Students will learn how we study the things we do, such as economic inequality, access to health care, changing patterns of crime, the interplay of religious practice and civil rights, by providing students with basic concepts and language related to conducting research.
Three hours; one term
Prerequisite(s): Registration in Social Sciences I, Economics I, or Honours Health and Society I and credit or registration in SOCSCI 1SS3; or registration in Level II or above in a program in the Faculty of Social Sciences; or permission of the department.
Enrolment Cap: 100105

Reserve Cap: 5 for non-Faculty of Social Sciences students

Justification: We are beginning to receive requests from students outside of the Faculty of Social Sciences to complete the Concurrent Certificate in Applied Social Sciences Research and this is a required course for this certificate. This prerequisite change and cap increase will permit a small number of non-Social Sciences students to enrol in this course.

Revisions to the Undergraduate Calendar 2022-2023

## Summary and Revision Justifications <br> Office of the Registrar, November 2021

## Admission Requirements (see attached, page 2)

## Housekeeping:

- Changes to dates/deadlines as they align with the application cycle
- Rewording/editing content for grammar, spelling, consistency and clarity
- Revisions to Registrar's Office contact information and URLs
- Changes to submission process for documents (uploading vs. mailing for 105 applicants due to changes based on Slate system)
- Change of name of Studio Art I to iArts to align with new program name; revised alpha order


## BC Applicant Requirements - Section 1B

- Changes to requirements for applicants from British Columbia - move from four (4) required Grade 12 courses to six (6). This aligns with other Canadian universities, and allows those applying to programs where there are four (4) required courses to benefit from having additional non-required courses in their average calculation.


## Section 1E - Other International Secondary School Qualifications: American High School Curriculum

- For SAT/ACT admission requirements for Fall 2023, readers are being redirected to the future.mcmaster.ca/admission/ website for updated information as pertains to submitting exams results. For F2022 admission, exams could not be completed due to COVID; whether students are able to sit exams this summer for F 2 O 23 admission is not yet known.


## Language Proficiency - Section 5

- English Language Proficiency (ELP)- adjustment to wording to reflect time frame in which to qualify to be exempt from the requirement to submit and ELP. Changed from 'immediately prior to application to McMaster' to 'immediately prior to anticipated start at McMaster'. This change aligns with how the ELP requirement is assessed and assigned in our system and has been past practice.


## Application Procedures (See attached, page 15)

- Changes to dates/deadlines as they align with the new application cycle
- Rewording/editing content for grammar, spelling, consistency and clarity
- Revisions to Registrar's Office contact information and URLs
- Changes to submission process for documents (uploading vs. mailing for 105 applicants due to changes based on Slate system)
- Section 1E- Nursing Consortium Programs- updated with directions for the two applicant groups (101s and 105s)
- Section 3-- Application and Documentation Deadlines Fall and Winter Terms chart updated to include:
- Addition of Engineering disciplines above Level 1 now requiring a supplementary application
- BTech Degree Completion (Above Level 1) - addition of different term application and document deadlines
- Nursing Post Diploma RPN stream information.


## General Academic Regulations (See attached, page 20)

- Revision to calculation used for a student to be named to Dean's Honour List and Provost's Honour List to allow students to with a minimum of 30 units since the last review and a minimum of 24 graded units to be assessed for Honours (DHL, PHL) regardless of the number of non-graded units (i.e. pass/fail, complete/not complete, etc.).


## Admission Requirements

1. Admission from Secondary Schools

All Level I programs have enrollment limits and admission is by selection.
A. Ontario

## General Requirements (For all Level I Programs)

To be considered for admission, you an applicant must satisfy the general requirements of the university and the specific subject requirements for the program to which they applied, plus any specified supplementary application/on-line assessment/audition/portfolio/ required by some programs at the university.
If you are an applicant from an Ontario secondary school, you must meet the following minimum requirements:

1. An Ontario Secondary School Diploma (OSSD) with acceptable standing; AND
2. An overall average in completed Grade 12 U and/or M courses which meets or exceeds the minimum set by the specific program to which you applied; AND
3. Satisfactory completion of six Grade 12 U and/or M courses including the subject requirements for your chosen program. Note: Co-op courses are not included in any admission or final admission average calculations. Music External (Conservatory) 4M is acceptable as a credit and the mark obtained can be included in the calculation of your admission average. Alternatively, you may submit certificates from a recognized conservatory of music in Grade 8 practical and Grade 2 theory to your secondary school for one Grade 12M credit.

## Admission Average Range

The Admission Average Range used to determine eligibility for consideration is calculated using the best six Grade 12 U and/or M grades, including all required subjects. McMaster calculates averages to two decimal points and does not round up averages. Please Note: Grade 12 Co-op courses are not eligible to be used as one or more of the required prerequisite courses used to calculate admissibility and/or the admission averages. See Early Conditional Admission and Final Admission below for specific details. Estimated admission average ranges for our Level I Programs can be found at: http://future.mcmaster.ca under and select Admission Requirements.

## Early Conditional Admission

Early conditional admission may be granted annually to qualified applicants with strong academic standing. Early conditional admission is based on

1. six appropriate midterm/interim Grade 12 U and/or M grades, OR
2. at least three final Grade 12 U and/or M grades PLUS enrollment in the appropriate additional three Grade 12 U and/or M courses.
3. In some cases, Grade 11 marks may be considered in extending early conditional offers of admission.

If you Applicants who do not receive an offer of admission in March, you will automatically be reassessed for admission until May 15 after additional Grade 12 U and/or M grades are received from your secondary schools. Due to enrollment limits, McMaster may not be able to consider additional grade data received after May 15 for admission purposes received after May 15.
The University reserves the right to withdraw a conditional offer of admission due to any of the following:

1. Youdo not meet $\ddagger$ The minimum final average prescribed for your chosen program required was not met; OR
2. You do not receive an The OSSD was not achieved; OR
3. Youdo not complete-six Six Grade 12 U and/or M courses including all required subjects were not completed; OR
4. You do not The applicant did not successfully accept you're-the offer of admission at the Ontario Universities' Application Centre (OUAC) by the response deadline indicated on you're-the offer letter; OR
5. You do not meet any other $\epsilon$ Conditions stipulated on you're-the conditional offer of admission were not met; OR
6. You attend a A post-secondary institution was attended prior to beginning your studies at McMaster; OR
7. You're-The offer of admission to the university was secured through fraudulent means. Please note the University's statements regarding application fraud at the end of the Admission section of this calendar.

## Minimum Final Average

If you are a Secondary school applicants who receives a conditional offer of admission, you will be are required to achieve an overall average (calculated to two decimal points) on (six (6) final grades including all program specific required courses). for your desired program) This information is as indicated on your offer of conditional offers of admission.
If you're-the applicant's final average falls below this level (or its equivalent), you're-the offer of admission will be rescinded/revoked and your registration will be cancelled
The required minimum final average will vary varies from year to year and by program. This average will be is clearly stated clearly on the offer of conditional admission letter.

## Supplementary Application Forms and Extenuating Circumstances

Certain Level I programs including Arts \& Science, Automation Engineering Technology 1 (co-op), Automotive \& Vehicle Engineering Technology 1 (co-op), Bachelor of Health Sciences (Honours), Biotechnology 1 (co-op), Computer Science 1 (regular and co-op), Engineering 1 (regular and co-op), Integrated Business and Humanities (IBH), Integrated Biomedical Engineering \& Health Sciences (iBioMed) (regular and co-op), Engineering 1 (regular and co-op), Integrated Business and Humanities (IBH), Honours Integrated Science, and Nursing have mandatory online supplementary application forms or online assessments which must be completed by specific deadline dates. Applicants to Nursing must complete a mandatory on-line assessment (CASPer ${ }^{\text {TM }}$ ) on the dates specified each year. See Application and Documentation Deadlines, for specific deadline dates. Applicants to Engineering 1 (regular and co-op) and Integrated Biomedical Engineering and Health Sciences (regular and co-op) must complete a mandatory on-line assessment (©

Kira-Talent) by January 29 each year. See Application and Documentation Deadlines, for specific deadline dates. Applicants to Integrated Business and Humanities must complete a mandatory on-line assessment (© Kira Talent) and submit a personal resume by February 1 each year. Applicants to Business 1 may elect to complete an optional supplemental form prior to February 1. to let the program know more about themselves.
McMaster does not normally use optional supplementary application forms. Applicants will be notified if the program they applied to decides to use an optional supplementary application form.
Applicants with special circumstances whose average falls slightly below the required admission average range may forward a letter to provide information to the Office of the Registrar, Admissions explaining the nature of their extenuating circumstances. In some cases, the university may request letters of recommendation, personal history or other additional information to aid in the admission process.

## Offers of Admission for Secondary School Graduates

Applicants may be eligible for final admission if they have fulfilled the requirements for completed their OSSD and have final grades in six Grade 12 U and/or M courses. If you fulfill the Applicants who fulfill these requirements for your chosen program by the end of February, yu may be granted an offer of final admission.
The University reserves the right to withdraw an offer of final admission due to any of the following:

1. You do not successfully Failure to accept your an offer of admission at the Ontario Universities' Application Centre (OUAC) by the response deadline indicated on your the offer letter; OR
2. You attend Attendance at a post-secondary institution prior to beginning your studies at McMaster.
3. Your An offer of admission to the university was secured through fraudulent means. Please note the University's statements regarding application fraud at the end of the Admission section of this calendar.

## Deferral of Admission

McMaster does not normally grant a deferral of an offer of admission unless special extenuating circumstances exist. Each case is evaluated on its own merits.
All requests for deferral of both admission and scholarship should be made in writing to: are to be submitted
Office- of the Registrar, Admissions
McMaster University
Gilmour Hall 109, 1280 Main St. W.
Hamilton, Ontario L8S 4L8
by September 1 of the application year, outlining the reasons for the request. If a deferral is granted, it is conditional upon the student not attending a secondary or post-secondary institution during the deferral period. For additional information, please refer to:

## https://registrar.mcmaster.ca/events/admission-deferrals/

## Subject Requirements for Specific Level I Programs

McMaster University offers the following Level I programs:
Arts \& Science I, Automation Engineering Technology 1 (B.Tech.), Automotive and Vehicle Engineering Technology I (B.Tech.), Biotechnology I (B.Tech.), Business I, Chemical \& Physical Sciences Gateway, Computer Science I (regular and co-op), Economics I, Engineering I (regular and co-op), Environmental and Earth Sciences Gateway, Honours Health and Society I, Health Sciences I, Humanities I, Honours Integrated Science (Level I), Honours Kinesiology (Level I), Integrated Arts I, Integrated Biomedical Engineering \& Health Sciences I (regular and co-op), Integrated Business \& Humanities I, Life Sciences Gateway, Mathematics and Statistics Gateway, Medical Radiation Sciences (Level I), Midwifery I, Music I, Nursing I, and Social Sciences I, and Studio Art I. ARTS \& SCIENCE I
You are required to complete a Applicants must complete a mandatory supplementary application
(https://artsci.mcmaster.ca/prospective-students/supplementary-application/) by the deadline as specified each year. See Application and Documentation Deadlines, for specific deadline dates.
A mandatory Supplementary Application Form which must be submitted at https://artsci.memaster.ca/prospective-students/supplementary-application/. The information provided enters into the selection process.A minimum overall average of $88 \%$ or higher is required for application consideration.
The following are the minimum Grade 12 U and M requirements:

1. English $U$
2. One of Advanced Functions $U$ or Calculus and Vectors $U$ (Calculus and Vectors $U$ is strongly recommended)
3. Completion of four additional $U$ or $M$ courses, to total six courses, of which two must be at the $U$ level

## AUTOMATION ENGINEERING TECHNOLOGY I CO-OP (B.TECH.), AUTOMOTIVE AND VEHICLE ENGINEERING TECHNOLOGY I

 CO-OP (B.TECH.), BIOTECHNOLOGY I CO-OP (B.TECH.)Admission to Automation Engineering Technology I, Automotive and Vehicle Engineering Technology I, and Biotechnology is by selection. A minimum average range in the low 80 s is required for application consideration. Applicants must complete a mandatory on-line assessment by the deadline as specified each year. See Application and Documentation Deadlines, for specific deadline dates.
The following are the minimum Grade 12 U and M requirements:

1. English $U$
2. Calculus and Vectors $U$
3. Chemistry U
4. Physics U
5. Completion of two additional $U$ or $M$ courses to total six courses

BUSINESS I
The following are the minimum Grade 12 U and M requirements:

1. English $U$
2. Advanced Functions U
3. Calculus and Vectors $U$
4. Completion of three additional U or M courses to total six courses

Applicants to Business I may elect to complete an optional supplemental form prior to February 1 to let provide the program know with more information about themselves.

CHEMICAL \& PHYSICAL SCIENCES GATEWAY
The following are the minimum Grade $12 U$ and $M$ requirements:

1. English U
2. Advanced Functions $U$
. Calculus and Vectors $U$
3. Chemistry U
4. Physics U
5. Completion of one additional U or M courses to total six courses

COMPUTER SCIENCE I, COMPUTER SCIENCE I CO-OP
Admission to Computer Science I (regular and co-op) is by selection. A minimum average range in the low 90s is required for application consideration. Applicants must complete a mandatory on-line assessment by the deadline as specified each year. See Application and Documentation Deadlines, for specific deadline dates.
The following are the minimum Grade 12 U and M requirements:

1. English $U$
2. Calculus and Vectors $U$
3. Two of: Biology U, Chemistry U, Physics U, Earth and Space U, Computer and Information Science M (or Computer Science U), or Computer Engineering M (or Computer Engineering Technology M)
4. Completion of two additional U or M courses to total six courses

ECONOMICS I
The following are the minimum Grade 12 U and M requirements:

1. English $U$
2. Two of Advanced Functions $U$, Calculus and Vectors $U$, and or Mathematics of Data Management $U$
3. Completion of three additional U or M courses to total six courses

Note: Applicants without Calculus and Vectors 4 U will be required to take an equivalent Calculus course in Level I. Applicants without Data Management $U$ will be required to take an equivalent Stats course in Level I.

ENGINEERING I, ENGINEERING I CO-OP
Admission to Engineering 1 (regular and co-op) is by selection. A minimum average range in the high 80s is required for application consideration. Applicants must complete a mandatory on-line assessment by the deadline as specified each year. See Application and Documentation Deadlines, for specific deadline dates.
The following are the minimum Grade 12 U and M requirements:

1. English $U$
2. Calculus and Vectors $U$
3. Chemistry U
4. Physics U
5. Completion of two additional U or M courses to total six courses

The following are the minimum Grade 12 U and M requirements:

1. English $U$
2. One of Advanced Functions $U$ or Calculus and Vectors $U$
3. One of Biology U, Chemistry U
4. One of Advanced Functions U, Biology U, Calculus and Vectors U, Chemistry U, Physics U
5. Completion of two additional U or M courses to total six courses

HONOURS HEALTH AND SOCIETY I
The following are the minimum Grade 12 U and M requirements:

1. English $U$
2. Completion of five additional $U$ or $M$ courses to total six courses

HONOURS HEALTH SCIENCES I
The selection method is by consideration of academic and a Applicants will be selected based on both their academic qualifications and their scores on the mandatory on-line Supplementary Application Form (due mid-February) submitted electronically; details at https://bhsc.mcmaster.cal. A minimum overall average of $90 \%$ or higher is required for application consideration. The Supplementary Application must be completed and submitted on-line by the specified deadline date. A review of the mandatory Supplementary
Application is a very important component of the admission process. Applicants who do not complete the Supplementary Application by the deadline will not be considered for admission.
The following are the minimum Grade 12 U and M requirements:

1. English $U$
2. One of Advanced Functions $U$, Calculus and Vectors $U$, or Mathematics of Data Management $U$
3. Biology U
4. Chemistry U
5. One U or M non-math/non-science course (Note: courses in technological education, science or mathematics are not acceptable)

## 6. Completion of one additional U or M course in any subject area to total six courses

HUMANITIES I
The following are the minimum Grade 12 U and M requirements:

1. English U
2. Completion of five additional $U$ or $M$ courses to total six courses

The Faculty of Humanities strongly recommends that you select at least one Grade 12 U or M course from Humanities subjects (Art, Drama, English, French, Français, other languages, History and Music). Note: In addition to Requirement 1 above, Biology $U$ is strongly recommended for students planning to enter the Cognitive Science of Language program.

## STUDIO ART I INTEGRATED ARTS I (iArts)

The following are the minimum Grade 12 U and M requirements:

1. English U
2. Completion of additional $U$ or $M$ courses to total six courses

McMaster offers Studio-Art iArts as a direct-entry Level I program leading to a Bachelor of Fine Arts (BFA) degree. Admission to this program is by selection and requires a mandatory portfolio interview creative submission with to the School of the Arts
https://sota.humanities.memaster.ca/studio-art/. https://sota.humanities.mcmaster.ca/undergraduate-programs/iarts/apply-now/
You must make arrangements for your portfolio interview with the School of the Arts at sota@memaster.ca.
For questions, please contact sota@mcmaster.ca.

HONOURS INTEGRATED SCIENCE (Level I)
Candidates are required to complete a mandatory Supplementary Application Form which must be submitted electronically at http://www.science.mcmaster.ca/isci/prospective-students. The information provided in the supplementary application enters into the selection process. Only applicants with high academic standing will be selected. Successful candidates must present a minimum average in the high 80's.
The following are the minimum Grade 12 U and M requirements:

1. English $U$
2. Advanced Functions $U$
3. Calculus and Vectors U
4. Two of Biology U, Chemistry U, Physics U
5. Completion of one additional $U$ or $M$ course to total six courses

INTEGRATED BIOMEDICAL ENGINEERING AND HEALTH SCIENCES (IBEHS) I /
INTEGRATED BIOMEDICAL ENGINEERING AND HEALTH SCIENCES (IBEHS) I CO-OP
Admission to Integrated Biomedical Engineering and Health Sciences 1 (regular and co-op) is by selection. A minimum overall average of $90 \%$ or higher is required for application consideration. Applicants must complete a mandatory on-line assessment as specified each year. See Application and Documentation Deadlines, for specific deadline dates.
The following are the minimum Grade 12 U and M requirements:

1. English $U$
2. Calculus and Vectors U
3. Biology $U$
4. Chemistry U
5. Physics U
6. Completion of one additional $U$ or $M$ course to total six courses

INTEGRATED BUSINESS AND HUMANITIES I
Admission to Integrated Business and Humanities 1 is by selection. A minimum overall average of $88 \%$ or higher is required for application consideration. Applicants must complete a mandatory on-line assessment (© Kira Talent) by February 1 each year. The following are the Minimum Grade 12 U and M requirements:

1. English U
2. Calculus and Vectors U
3. Data Management $U$
4. Completion of three additional U and M courses to total six courses.

The following are the minimum Grade 12 U and M requirements:

1. English $U$
2. Calculus and Vectors U
3. Biology U
4. Completion of three additional Grade 12 U or M courses to total six courses. Introductory Kinesiology U is strongly recommended.

LIFE SCIENCES GATEWAY
The following are the minimum Grade 12 U and M requirements:

1. English U
2. One of Advanced Functions $U$ or Calculus and Vectors $U$
3. Biology U
4. One of Advanced Functions U, Calculus and Vectors U, Chemistry U or Physics U
5. Completion of two additional $U$ or $M$ courses to total six courses

MATHEMATICS AND STATISTICS GATEWAY

The following are the minimum Grade 12 U and M requirements:

1. English U
2. Advanced Functions $U$
3. Calculus and Vectors U
4. Completion of three additional $U$ or $M$ courses to total six courses

MEDICAL RADIATION SCIENCES (Level I)
Students considering the Medical Radiation Sciences I program should refer to the Regulations for License to Practice and Functional Demands in the Medical Radiation Sciences program in the Faculty of Science section of this calendar.
The following are the minimum Grade 12 U and M requirements:

1. English $U$
2. Advanced Functions $U$
3. Calculus and Vectors $U$
4. Biology $U$
5. Chemistry U
6. Completion of one additional $U$ or $M$ course to total six courses

## MIDWIFERY I

Places in the Midwifery program are very limited and the admission process is highly competitive. Admission to the Midwifery Education Program is by selection. Application to the Midwifery program must be completed by February 1. In recent years an average range in the mid to high 80's has been required to move forward to the admissions interview stage. Interviews are by-invitation only The following are the minimum Grade 12 U and M requirements:

1. English $U$
2. Biology U
3. Chemistry U
4. Completion of additional U or M courses to total six courses
5. To be eligible to apply, students must obtain a minimum grade of $75 \%$ in each of the three required courses listed in points 1 , 2, and 3 above AND an overall average, including the required courses, that is acceptable to the Program
6. Current (Ontario) secondary students may apply if one or more of the three (3) mandatory prerequisite courses are in progress at the time of application; however, the grade 11 prerequisite(s) in the same subjects must be completed at the time of application so that a preliminary assessment of the subject area(s) can be made. Admission is based on in-progress secondary school subjects for current secondary students only if the grade 11 prerequisite in that subject area has been completed with a minimum grade of at least $75 \%$.

MUSIC I
The academic requirements are the same as for Humanities I. In addition, applicants to Music I or to the B.A. in Music must successfully complete a music audition/examination consisting of:

1. Demonstration of technique (a level equivalent to at least honours standing in Grade 8 of the Royal Conservatory of Music)
2. Performance (approximately 20 minutes' duration) of two or three varied pieces of your choice (approximately Grade 8 honours level), including at least one from the past 100 years 20th century
3. Ear test appropriate to the Grade 8 performance level
4. Written examination on rudiments of theory (Grade 2 level)
5. Interview

For comprehensive details, visit https://sota.humanities.mcmaster.ca/music/
Auditions take place between February and April. You must make Audition arrangements are to be made with the School of the Arts for your audition at sota@mcmaster.ca.

## NURSING I

NURSING CONSORTIUM (CONESTOGA)

## NURSING CONSORTIUM (MOHAWK)

Note: Effective September 2021, all applicants for the three sites streams will-apply to the OUAC (Ontario University Universities' Application Centre), selecting McMaster University BScN and the specific site(s) of interest.
Students interested in a McMaster (B.Sc.N.) Nursing degree have three location options: McMaster University, Mohawk College or Conestoga College. Each of the three sites offers the four-year program which uses the problem-based learning and small group tutorial educational model. For more information about the Mohawk and Conestoga College sites refer to the B.Sc.N. (A) Stream in the School of Nursing, Faculty of Health Sciences portion of the Calendar. For full application instructions see the School of Nursing and Application Procedures sections as well as https://nursing.mcmaster.ca/programs/undergraduate.
Admission to Nursing 1 at all sites is by selection. A minimum overall average of $85 \%$ or higher is normally required for application consideration. Additionally, applicants to Nursing must complete a mandatory on-line assessment (CASPer ${ }^{T M}$ ) on the dates specified each year (October-February). Applicants who do not complete the CASPer ${ }^{\text {TM }}$ test will not be considered for admission.

The following are the minimum Grade 12 U and M requirements:

1. English $U$
2. One of Advanced Functions U, Calculus and Vectors U, Mathematics of Data Management $U$
3. Biology U
4. Chemistry U
5. Completion of two additional $U$ or $M$ courses to total six courses

The selection method is by academic qualifications (minimum overall average range of $85 \%$ or higher is required for consideration) and a mandatory, online, 90 -minute computer-based assessment of personal characteristics called CASPer ${ }^{\text {TMM }}$. Applicants who do not complete the CASPer ${ }^{T M}$ test will not be considered for admission.

Health requirements for admission to Nursing 1: During the registration process, you must file with the University information pertaining to your state of health and immunization is required. Detailed instructions will be provided after acceptance into the program. Students considering the Nursing 1 program should refer to the document Requisite Skills and Abilities for Nursing Practice in Ontario at the College of Nurses of Ontario www.cno.org.

SOCIAL SCIENCES I
The following are the minimum Grade 12 U and M requirements:

1. English $U$
2. Completion of five additional $U$ or $M$ courses to total six courses

Advanced Functions $U$ and Calculus and Vectors $U$ are strongly recommended for students planning to enter programs in Economics or Psychology, Neuroscience and Behaviour. Biology $U$ is recommended for students planning to enter a program in Psychology, Neuroscience and Behaviour.

## STUDIO ART

The following are the minimum Grade 12 U and M requirements:
3. English U
4. Completion of additional $U$ or $M$ courses to total six courses

McMaster offers Studio Art as a direct-entry Level I program leading to a Bachelor of Fine Arts (BFA) degree. Admission to this program is by selection and requires a mandatory portfolio interview with the School of the Arts https://sota.humanities.memaster.ca/studioart/.
You must make arrangements for your portfolio interview with the School of the Arts at sota@memaster.ca.

## B. Other Canadian Provinces and Territories Subject Requirements for Level I Programs

In addition to the minimum requirements below, satisfactory completion of the specified subject requirements for the program to which you applied is also required. Please refer to our website http://future.mcmaster.ca for more details.
Averages used to determine eligibility for admission and residence are calculated to two decimal points based on the minimum provincial requirements, including the prerequisite courses for the program to which you have applied.

## Early Conditional Admission

Applications are reviewed for conditional admission as soon as all required documents, with sufficient course and grade data, are received by the Office of the Registrar, Admissions. All Canadian applicants should upload forward interim/midyear school grade reports showing marks for all courses taken during the Grade 11 and 12 years as well as all course registrations for the current academic year, as soon as they are available. The terms and conditions of the offer of admission are stated clearly on the offer letter. The Provincial Ministry final transcript confirming final grades and graduation status will be required at the end of the school year. Students from all other provinces where transcripts are issued by their high schools should have their schools forward the appropriate interim mid-year transcripts and final transcripts confirming graduation.
Applicants are required to meet the following minimum requirements including the specified subject requirements (not listed below) for their chosen program. For a complete listing of our specific course requirements by province and Level I program you may refer to our web site: https://future.mcmaster.ca/.

## Alberta, Northwest Territories and Nunavut

Grade 12 high school diploma with five acceptable academic courses numbered 30 or 31, including English Language Arts 30-1.

## British Columbia and Yukon

Grade 12 high school diploma with four six acceptable Grade 12 academic courses (or equivalent), including English Studies 12, English 12, or English 12 First Peoples. Five Grade 12 academic courses, including all required courses, are used for programs with five requirements.

## Manitoba

Grade 12 high school diploma with five acceptable Grade 12 academic courses numbered 40S, including one of English 40 S.

## New Brunswick

Grade 12 high school diploma with five acceptable Grade 12 academic courses numbered 120, 121, or 122, including English 121, or English 122, or English as a Second Language 22411.

## Newfoundland and Labrador

Grade 12 high school diploma with eleven acceptable Grade 12 academic credits at the 3000 level, including English 3201.

## Nova Scotia

Grade 12 high school diploma with five acceptable Grade 12 academic or advanced courses (university preparatory Academic or Advanced), including English 12.

## Prince Edward Island

Grade 12 high school diploma with five acceptable Grade 12 academic courses numbered 611 or 621, including English 611 or 621. Québec
Grade 12 Diploma with six acceptable Grade 12 academic courses in the 600 series including English OR

Year I CEGEP with twelve appropriate academic courses, including two English/Anglais 603 or two English 604 courses. Students completing Year II or III CEGEP who will or have achieved the DEC may be considered for advanced credit in their chosen program. The côte de rendement ( R Score) is used for admission consideration.

## Saskatchewan

Grade 12 high school diploma with five acceptable Grade 12 academic courses numbered 30, including both English A30 and B30.

## C. International Baccalaureate Diploma

Applicants who have completed or will be completing the International Baccalaureate Diploma will be considered for admission to Level I, provided the completed diploma program includes the subject requirements of the program desired. Advanced credit of up to 18 units of study will be considered for Higher Level $(\mathrm{HL})$ courses based on the achievement of final IB Diploma grades of 5 or greater. For more information please refer to https://future.mcmaster.ca/.

## D. Advanced Placement (AP) Courses/Examinations

Applicants who have completed AP courses will be considered for admission to a Level I program. Applicants who have completed A.P. exams through the College Board in acceptable courses and achieve a minimum grade of 4 will be considered for up to 18 units of advanced credit. For all students who have completed AP examinations through the College Board, an official copy of the final Advanced Placement Examination Results Report from the College Board is required as part of the admission and advanced credit evaluation process. For more information please refer to https://future.mcmaster.ca/admission/

## E. Other International Secondary School Qualifications

See the admission Admission requirements for applicants from the more common international educational systems are noted below. For all other education systems from around the world, please visit our website for the specific minimum requirements for your country's educational system country-specific requirements. Required subjects would be are the same as required for Ontario and other Canadian students: https://future.mcmaster.ca/admission/.
Applicants must arrange for official upload high school transcripts as part of the application process. to be sent to McMaster University well in advance of the session to which they are applying. The equivalent of first-class standing will be required for admission consideration. Documents in a language other than English should be accompanied by notarized English translations. You will be-Applicants are considered for admission on an individual basis and you will not be allowed to attend the University until we have received efficial evidence that all conditions attached to your the Offer of Admission have been fulfilled.
McMaster University may require students presenting admission documents that will form the basis of their admission to the university, from schools outside of North America, to have those documents authenticated via WES Canada https://www.wes.org/ca/. Students will be supplied with This requirement, if applicable, will be specified specific information in their official Offer of Admission letter.

## American High School Curriculum

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/.

## 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/english-proficiency/ https://future.memaster.ca/admission/languaget
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 f Results of an equivalent AP challenge examination will be accepted 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 is required for AP challenge exams.
Students who are presenting AP courses that are prerequisites 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 is 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.

In response to the pandemic, McMaster University is making made the submission of SAT/ACT optional for the Fall 2022 admission cycle. For SAT/ACT admission requirements for Fall 2023, please visit https://future.mcmaster.ca/admission/for updated information as it becomes available:. Results (if submitted) will be considered if they benefit the student and make their application stronger; however students who do not submit a score will not be penalized.
Applicants choosing to submit SAT/ACT results may do so by email to: macdocs@mcmaster.ca.
Applicants choosing to submit SAT/ACT results may do so by email to: macdocs@momaster.ca.

- Detailed school profile including grading scale
- $2 n d$ quartile results can be used for consideration for a conditional offer of admission provided at least 2 of the 5 required courses have been completed and grades presented.
- Grade 9, 10, 11 and Grade 12 2nd quartile results
- SAT and SAT II Subject Test results must be-sent from the College Board directly and cannot be accepted electronically.
- SAT minimum - overall score of 1200 or greater (Reading/Math sections only) with a minimum score of 600 in each section (Institutional Code for SAT/AP - 0936)
OR
- ACT - minimum composite score of 27 or greater (Institutional Code -5326)

General Certificate of Education (G.C.E.)
Applicants from the General Certificate of Education system require a minimum of five G.C.E. subjects, at least two three of which must be at the Advanced A2 Level with the balance of the subjects at the IGCSE/GSCE (Ordinary Level). Advanced Level subjects must be appropriate to your chosen program.
Note: Many programs may require a minimum of three Advanced A2 Level courses.
For program specific requirements please refer to https://future.mcmaster.ca/admission/.

## Other Countries or Educational Systems

For admission requirements from other education systems, please visit https://future.mcmaster.ca/admission/ to view our countryspecific Admissions Requirements.

## F. Home Schooled Applicants

Home schooled applicants who in addition to their home schooling experience have completed six Grade 12 U and M courses at an Ontario Ministry of Education inspected and approved school, or equivalent courses from another recognized academic jurisdiction may be considered for their program of choice providing they present the appropriate prerequisite courses on official transcripts from accredited schools and meet the required admission average. McMaster University is the sole arbiter of what is considered as equivalent level education and equivalent courses.
All other home schooled applicants may apply for admission consideration to Humanities I or Social Sciences I by presenting the following:

1. List of home school credentials including but not limited to structured curriculum completed through ACE (Accelerated Christian Education Program) or other such programs.
2. Portfolio of written work; normally, evidence of appropriate intellectual maturity.
3. Results of standardized tests such as SAT, ACT. 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.
Interested applicants should contact the Office of the Registrar for further information regarding admission criteria.

## G. Prior-Year Secondary School Graduates

Applicants who have previously completed a secondary school diploma and have not attended a post-secondary institution since graduation, may be considered for admission by presenting satisfactory standing in six required Grade 12 U and M courses (or equivalent) as identified in the Subject Requirements For Specific Level I Programs section in this calendar.
If you have Having attended a post-secondary institution after high school graduation- disqualifies applicants from being you would not be-considered as an applicant from secondary school. See Admission/Transfer From Post-Secondary Institutions section in this calendar.

## 2. Admission/Transfer from Post-Secondary Institutions A. From Universities

Most McMaster programs have enrollment limits and admission is by selection. Possession of the minimum admission requirements does not guarantee admission. Admission will be considered on a case by case basis and is not guaranteed.
When you transfer to McMaster University, Transfer applicants you will normally receive credit for courses in which a grade of you have obtained at least a C- standing (as per the McMaster grading scale) has been achieved. Assessment of courses for transfer credit is subject to the guidelines of the individual Faculties.
As a transfer student, you Transfer students must also satisfy the Residence Requirements set out in the General Academic Regulations section of this Calendar. The University will not accord to you privileges which would not be granted by your own university.
Grades obtained in courses taken at another university will not be included in McMaster's Grade Point Average, and, therefore, cannot be used to raise your standing.

If you have been required to withdraw from another university and have fulfilled your period of suspension, you may apply for admission. However, you must present a letter of explanation and clarification concerning your past academic performance. You may also be asked to provide academic documentation for proof of further academic achievement which is both current and relevant. For full transfer information see our website: https://future.mcmaster.ca/admission/transfer-student-information/.

## B. From Colleges of Applied Arts and Technology

Most-McMaster programs have enrollment limits and admission is by selection. Possession of the minimum admission requirements does not guarantee admission. Admission will be considered on a case by case basis and is not guaranteed.
See the minimum admission requirements for Level I programs as listed below.
For information regarding the amount of available transfer credits when transferring from a College of Applied Arts and Technology and to view the minimum admission requirements, please visit https://future.mcmaster.ca/college-transfer-student/. https://future.memaster.ca/admission/college-transfer-student-information/.

## C. University Graduates Applying for a Second Bachelor's Degree

All programs have enrollment limits and admission is by selection. If you have a first non-Honours degree, you may apply to take an Honours second degree in the same subject area or a second degree in another discipline. Please note the following exceptions: B.Arts Sc.(Arts \& Science), B.Com. (Bachelor of Commerce), B.Com. (Honours), B.H.Sc. (Bachelor of Health Sciences (Honours)), B.Sc. (Honours) in Integrated Science (ISCI), Honours B.Sc. Kinesiology, Integrated Biomedical Engineering and Health Sciences, and Integrated Business and Humanities cannot be done as second degree programs. Honours Music is only available as a second degree to students whose first degree is not a BA in Music. The requirements are set out in the General Academic Regulations section of this Calendar.
If you wish to enter a Second Bachelor's Degree in a subject area from the Faculty of Science, please note that admission to all limited enrollment programs, with the exception of Medical Radiation Sciences I, may not be possible. Second Degree applicants to all Science programs, except Medical Radiation Sciences I, are not eligible to apply to or be admitted to any of the other first year Science programs. Second Degree applicants must have already completed all first year requirements for the second year program they wish to apply to, with the exception of Medical Radiation Sciences I. See Limited enrollment Programs in the Faculty of Science section of this Calendar for a list of programs. Please contact the Office of the Associate Dean of Science (Academic) for further information (see the Application Procedures section).
If you are a McMaster graduate or potential graduate, you may be able to use the McMaster University Returning Student Application (see the Application Procedures section).

## D. Continuing Students

At McMaster, a Continuing Student is defined as a graduate from an undergraduate program, who wishes to take more undergraduate courses,., either out of general interest or to upgrade or obtain courses required for future applications to graduate studies or other professional programs. To be eligible to take courses as a Continuing Student applicants will you will be expected to have an undergraduate university degree and at least a C average, with no failures; in your final year's work (or the equivalent, in the case of a degree taken through part-time studies), and academic records which are satisfactory to the Department and the Office of the Associate Dean of the appropriate Faculty. *Please Note: not all courses are available to Continuing students and course prerequisites for selected courses must be met. Also note that admission as a Continuing student does not guarantee registration in courses of interest to the student.

## McMaster Graduates

If you are a graduate of a McMaster undergraduate degree program and wish to become a Continuing Student, you do not need to apply for admission. Graduates who have not attended courses for more than two years will need to contact the Office of the Registrar prior to attempting to enrol for courses.

## Graduates from Other Universities

As a Continuing Student with a non-McMaster degree, you must apply formally for admission in the first instance. In subsequent academic terms sessions, you will only be required to enrol.
Acceptance as a Continuing Student carries no implications with respect to acceptance in the School of Graduate Studies. If you plan to proceed to a graduate degree you should apply directly to the specific department of your program of interest.

## E. From Six Nations Polytechnic

McMaster University, along with four five other universities, partnered with Six Nations Polytechnic to offer university courses in the community of Six Nations. The courses offered are eligible for transfer credit at any of the universities within the consortium. For more information please contact the Indigenous Student Services at 905-525-9140, ext. 27459 or indigsc@mcmaster.ca.

## F. From Post-Secondary Institutions with Religious Affiliation

Undergraduate general academic studies taken at colleges with religious affiliation that are member institutions of specific accredited associations will be considered for admission and transfer credit on a case by case basis. Applicants from a non-accredited postsecondary institution with religious affiliation will be considered for admission based on completion of a Grade 12 high school diploma.

## 3. Other Categories of Admission

A. Part-time Admission

Students Applicants interested in beginning studies on a part-time basis should review the requirements and information found in the following sections of this Calendar:

- Admission Requirements
- Application Procedures
- General Academic Regulations
- Sessional Dates
- Program descriptions found in the specific Faculty sections

Applicants who wish to pursue undergraduate studies on a part time basis at McMaster must meet one of the admissions criteria outlined in the sections above. If applicants do not meet any of these criteria, they may qualify for Mature Student Admission as outlined under the heading Mature Student Admission below.
Detailed information can be found on our website: http://future.mcmaster.ca/admission/.

## B. Mature Students (Admission)

If you do not qualify Applicants for admission consideration, who do not qualify under one of the above categories, McMaster will be assessed your for eligibility as a mature student. You may be considered for limited admission, provided both of the following conditions are satisfied:

1. You have not The applicant has not attended secondary school or college on a full-time basis for at least two years.
2. You have The applicant has never attended university.

Applicants admitted as mature students will not be granted transfer credit. Programs in the Faculties of Humanities and Social Sciences have no specific course requirements for mature student admission. The following Level I programs have specific course requirements that mature applicants must present from secondary school, as outlined:

- Business I: requires satisfactory completion of Grade 12 Calculus and Vectors $U$ one Grade 12 U Mathematics course (or equivalent).
- Chemical and Physical Sciences Gateway: requires satisfactory standing in four Grade 12 U mathematics and science courses (or equivalent) as specified under the heading Subject Requirements For Specific Level I Programs.
- Environmental and Earth Sciences Gateway: requires satisfactory standing in three Grade 12 U mathematics and science courses (or equivalent) as specified under the heading Subject Requirements For Specific Level I Programs.
- Life Sciences Gateway: requires satisfactory standing in three Grade 12 U mathematics and science courses (or equivalent) as specified under the heading Subject Requirements For Specific Level I Programs.
- Mathematics and Statistics Gateway: requires satisfactory standing in two Grade 12 U mathematics courses - Advanced Functions U and Calculus and Vectors U (or equivalent) as specified under the heading Subject Requirements For Specific Level I Programs.
- Midwifery I: does not offer mature admission directly to the program. However, students interested in Midwifery may be admitted as a mature student to another program in order to complete a minimum of six university courses (18 units) in their program of admission before applying to the Midwifery Education Program.
- Nursing I does not offer mature admission directly to the program. However, students interested in Nursing may be admitted as a mature student to another program in order to complete university prerequisite courses for later consideration for admission to Nursing I. Possession of the minimum admission requirements does not guarantee an offer of admission. Contact the School of Nursing for more details.
The following programs do not admit under the category of Mature Students: Arts \& Science I, Automation Engineering Technology I (B.Tech.), Automotive and Vehicle Technology I (B.Tech.), Biotechnology I (B.Tech.), Computer Science I, Engineering I, Health Sciences I, Honours Integrated Science (Level I), Honours Kinesiology (Level I), Integrated Biomedical Engineering and Health Sciences I, Integrated Business and Humanities I, Medical Radiation Sciences (Level I), Midwifery I, and Nursing I, and Process Automation Technology I (B.Tech.).
If admitted to a program Those admitted as a mature student, you may register to take up to 18 units of course work (normally Level I courses) during the Fall/Winter session with no more than nine units in each term (three courses). Within the first 18 units, mature students will be limited to taking three units in each term of the Spring/Summer session.
Upon completion of 18 units, your academic performance will be is reviewed according to the general academic regulations of the university. (See Level I Registration and Academic Standing Requirements under General Academic Regulations).


## C. Visiting Students (Letter of Permission - For Credit at Another University)

If you are a student Students currently attending another university, you may apply to take McMaster courses for credit at your their own/home institution. Please note, not all courses are available for credit outside McMaster and all are subject to enrollment limits,, so it It is important that all applicants adhere to McMaster application deadlines.
You must initially apply Applications are made through the Ontario Universities' Application Centre (OUAC). The and send your Letter of Permission and an official transcript are required. from your home institution directly to the Office of the Registrar,
Admissions. Upon receipt, your $\ddagger$ Transcripts will be are reviewed to ensure you have met the prerequisites for courses have been completed. you plan to take at McMaster. Approval of your application as a Visiting Student application does not guarantee your enrollment in a course.
Subsequent requests to take courses on a Letter of Permission do not require another application; however you must send an updated Letter of Permission and a current official transcript from your home institution must be sent to the Office of the Associate Dean of the Faculty offering the course at McMaster. If you are interested in registering attempting to register in courses offered by more than one Faculty, you must obtain approval from each Office of the Associate Dean must be obtained.

## D. Graduates of McMaster Certificate/Diploma Programs

If you have Applicants who have-completed certificate or diploma programs from McMaster,you may be granted advanced credit up to maximum specified by Undergraduate Council upon successful completion of the certificate/diploma program. Faculties will take into
account review the subject matter of both the certificate and degree programs. The credit granted will normally be applied against your elective courses. For more information concerning the amount of regarding advanced credit granted, please refer to the Certificate and Diploma Programs section of this Calendar.

## E. Post-Degree Students

If you are a university University graduates or a persons with professional qualifications who wishes to take one or more graduate courses but not proceed to an advanced degree, you-may apply to McMaster as a post-degree student. To enroll as a post-degree student, you mustapply to the appropriate department(s) and have your admission and registration approved by the School of Graduate Studies for each session in which you wish to take courses. You will register and pay fees as a graduate student. Acceptance as a post-degree student carries no implications with respect to admission to advanced degrees, and even if such admission is granted subsequently, credit toward the advanced degree will not normally be granted for the work previously taken.

## F. Listeners

If you are uncertain about taking degree courses, you may registering as a listener in a degree course may be of interest. but not for eredit. You-Listeners attend all classes, but do not complete any of the essays, tests and or other formal requirements and do not receive a grade or credit. You do not receive a grade for courses that you attend. Some students have eased their way into degree study with this option, subsequently applying for admission and enrolling in further courses for credit. Please note not all courses are available to Listeners. Please see https://financial-affairs.memaster.ca/ https://registrar.mcmaster.ca/fees/ for any applicable fees. For more information please contact the Office of the Registrar.
Written permission to attend must be obtained from the instructor delivering the course. An I.D. card cannot be issued until permission has been obtained.

## G. Enrichment Program for Secondary School Students

If you are an outstanding Outstanding Grade 12 students and who wish to enroll in a university-level course while completing Grade 12 $U$ and $M$ courses in you're-their final year of study, you may apply for the Enrichment Program. For more information contact the Office of the Registrar https://future.mcmaster.ca/contact-us/.

## H. Former McMaster Degree Students (Returning Students)

## Readmission

If you are a former Former McMaster students who voluntarily withdrew from an undergraduate program more than five years ago (and have not attended another university or completed a college diploma elsewhere) and you wish to return to you're-their studies, then you must apply for Readmission. Students from the School of Nursing or the Physician Assistants program must apply for Readmission regardless of time elapsed following voluntary withdrawal.
If you were enrolled (have a record of course enrolment) within the last five years and you left the university in good academic standing (and have not attended another university or completed a college diploma elsewhere), then it is not necessary for you to apply for Readmission. Normally, you will be permitted to enrol in your previous program or another program for which you qualify. You must contact the Office of the Registrar directly in order to have your status reactivated prior to enrollment.: (905) 525-4600.

## Reinstatement

See the General Academic Regulations section in this Calendar.

## Second McMaster Degree

See University Graduates Applying for a Second Bachelor's Degree in this section of the Calendar.

## Continuing Studies

See Continuing Students in this section of the Calendar.

## 4. Transfer Credits

## A. General Policy on the Transfer of University Course Credits

To facilitate program completion by undergraduate students seeking to transfer course credit from an accredited university to McMaster, the University has implemented the following principles:

1. Acceptance of transfer credits from accredited universities shall be based on the recognition that, while learning experiences may differ in a variety of ways, their substance may be essentially equivalent in terms of their content and rigour. Insofar as possible, acceptance of transfer credit shall allow for the maximum recognition of previous learning experience in universitylevel courses;
2. Subject to degree, grade and program requirements, any course offered for credit by an accredited university shall be accepted for credit by McMaster when there is an essential equivalency in course content. However, no course for which a grade of less than C- (60\%) has been achieved will be considered.
3. Evaluation of all possible transfer credits available at the time of admission must be completed within one year of the date of admission to the University.

## B. From Colleges of Applied Arts and Technology

Normally, if you are a well-qualified graduates of a three-year program and where the college work is appropriate to you're-the chosen university program, you could may receive up to 30 units of transfer credit. If you have completed a Graduates of two-year programs and performed well, will be reviewed for transfer credit will be reviewed on a case-by-case basis. Credit beyond this may be given on an individual basis where the college and university programs are in similar areas, and where you're-the academic record warrants special consideration.
In the granting of credit, attention will be given to:

1. your performance in the college program;
2. the duration of the college program;
3. the program taken at the college and the program to which entry is sought;
4. you're-the applicant's secondary school record.

Each case will be considered individually on its own merits for the program desired.

## C. Advanced Credit

Subject to the discretion of the Faculty, advanced credit may be granted if you have for a completed: the International Baccalaureate (I.B.) Diploma; the Advanced Placement (A.P.) Program and the College Board examinations;; or the General Certificate of Education (G.C.E.) and you have met the minimum requirements prescribed have been achieved. Advanced credit may shorten your degree program length at McMaster.

## D. Credit in Courses by Special Assessment (Challenge Examinations)

Students Applicants who have acquired knowledge at a different type of institution or in a manner that makes assessment of their qualifications difficult are permitted to seek degree credit through special assessment (Challenge for Credit). Challenge for credit is not intended to give credit for skills or knowledge gained through high school, college or previous university instruction. The special assessment may include one or more of the following: written examinations, papers, essays, submissions of a substantial body of work, or portfolios, or laboratory tests. Credit can be granted only for those courses listed in the current McMaster calendar. Not all courses in all disciplines are available for challenge. Faculties and departments are free to determine which, if any, of their courses are open for special assessment. Challenges are assessed on a pass/fail basis. The passing grade for a challenge appears on the transcript as COM (Complete) and is not used in computing averages or evaluating honours or scholarship standing, but is counted as a course attempt. Unsuccessful attempts will be noted on the transcript as a grade of F. Special Assessment is not available for a course taken previously and a course may be attempted only once by special assessment. Once you have registered for a course by such means (known as challenge exams) the registration may not be cancelled and you may not withdraw from the course. Waivers of prerequisites only (ie. no degree credit) will be at the discretion of the department.

## 5. English Language Proficiency

If you have been Applicants asked to meet the English Language Proficiency requirement, you must demonstrate English language proficiency by achieving the minimum requirements as specified by McMaster. The university reserves the right to require applicants with an English Language Proficiency score disparate from their English prerequisite subject grade to present further evidence of achievement. You may review acceptable tests of English Language Proficiency and minimum score requirements on our web site https://future.mcmaster.ca/english-proficiency/. It is your responsibility to make all arrangements regarding the writing of the English Language Proficiency tests and to have the official score report submitted to the Office of the Registrar, Admissions in a timely manner. At the discretion of the university, you may be exempted from this requirement if you meet one of the following requirements:
i. Attended immediately prior to application to McMastef, in full-time academic studies (non-ESL), an accredited Secondary School (High School) or Post-Secondary College in an English-speaking country for at least four years immediately prior to your anticipated start date at McMaster, OR
ii. Attended immediately prior to your application to McMaster, in full-time academic studies (non-ESL), at an accredited English medium Secondary School (High School) or Post-Secondary College for at least four years,* immediately prior to the anticipated start date at McMaster OR
iii. Attended immediately prior to your application to McMaster, in full-time academic studies (non-ESL), at an accredited English medium University for at least one year, immediately prior to the anticipated start date at McMaster OR
iv. Resided in an English-speaking country for at least four years immediately prior to your anticipated start date at application to McMaster.
*Please note that the Undergraduate MD program requires a minimum of three years of study at an English-medium university. More information about the admission requirements for Medicine at McMaster can be found at: https://mdprogram.mcmaster.ca/. Statements for Application Fraud
If McMaster concludes based on reasonable grounds that the applicant has falsified any information presented to the University as part of his or her application, without limiting any other rights of McMaster available at law, McMaster reserves the right to revoke the offer and, subject to applicable law and University Policy, to terminate a student's registration.
Without limiting McMaster's General Statement on Collection of Personal Information and Protection of Privacy, please take note that McMaster University collects and retains personal information of applicants for admissions to McMaster University under the authority of The McMaster University Act, 1976. This information may be used for the administration of admissions and registration and, subject to McMaster University policies (as may be amended or revoked from time to time), McMaster may disclose any evidence of misrepresentation, fraud or falsification of admissions documentation to other educational institutions, to government agencies, to lawenforcement agencies and to other relevant third parties. The information you provide on any application for admissions 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 English Language Development Diploma (MELD)

Department of Linguistics and Languages (Faculty of Humanities)
Phone: (+1) 905.525.9140 Ext. 23718
Email: meld@mcmaster.ca
Web: https://meld.humanities.mcmaster.ca/diploma/
Students who meet the academic admission requirements for their choice of Level 1 program, but do not meet McMaster's English Language Proficiency requirement may be admitted to the MELD bridging program which has been developed for international students, providing them with a supportive environment in which they can succeed. The diploma is a two-term, full-time intensive bridging program in English language development, acculturation and engagement.
Students accepted into MELD are given a conditional offer of admission to their program of choice, pending successful completion of the MELD diploma. Once the diploma in MELD has been successfully completed, the student may register in the program to which the student was given conditional admission and will have completed 6 units of degree credit courses in Linguistics that may be applied as electives to that program. In exceptional circumstances, MELD will consider transfers from other McMaster programs.
Please visit https://meld.humanities.mcmaster.ca/diploma/ for more information or email meld@mcmaster.ca.

## Fall Term

(September - December)

- LINGUIST 1E03 - Introduction to English Linguistics I (degree credit course)
- MELD 1M00 - Mentorship Lab 1
- MELD 1Q03 - Critical and Analytic Reading
- MELD 1QQ3 - Grammar, Structure and University Writing
- MELD 1R03 - Aural Communication and Academic Culture
- MELD 1RR3 - Oral Communication for Academic and Social Interactions


## Winter Term

(January - April)

- LINGUIST 1EE3 - Introduction to English Linguistics II (degree credit course)
- MELD 1MM0 - Mentorship Lab 2
- MELD 1S03 - Critical Reading, Research and Academic Vocabulary
- MELD 1SS3 - Academic Writing, Reporting and Research
- MELD 1T03-Cross-Cultural Perspectives on Language and Language Learning
- MELD 1TT3 - Oral Communication for Academic Discourse


## McMaster English Readiness for Graduate Excellence Certificate

https://meld.humanities.mcmaster.ca/merge/
MERGE (the McMaster English Readiness for Graduate Excellence Certificate) is an intensive six-week summer certificate program for current or prospective graduate students from any institution who are looking to improve their English-language skills. The MERGE program offers over 200 hours of language training; 35 hours per week. Admission requirements include successful completion of an undergraduate degree and English language proficiency minimum requirements of TOEFL iBT 90 or IELTS 6.5 (with minimum category requirements). Target English proficiency upon program completion will be an IELTS score of 7-7.5 or Common European Framework Reference for Languages (CEFR) level C2.1, in keeping with graduate English proficiency admission requirements. The MERGE program goes beyond essential training in speaking, listening, reading, and writing. It has been designed to support the integration of these skills as applied to real world contexts students will encounter during graduate school and beyond. The MERGE certificate does not require current or conditional admission to a McMaster University graduate program and program completion does not guarantee admission to a graduate program of study in and of itself. As a stand-alone program, the MERGE certificate coursework cannot be utilized for advanced standing or credit towards degree studies.

## Certificate Requirements

Each of the program's six weeks will be divided into modules that will focus on a different set of skills. These modules will approach the development of these skills from the point of view of both cultural understanding and practical implementation, with an emphasis on teaching and practising the language skills needed to be successful in each domain. The six modules are:

- Module 1-General social interactions: conventions and strategies for everyday social encounters students face
- Module 2 - Academic feedback and critique: the role of critique in academia along with tools for both giving and receiving feedback or peer review
- Module 3 - Academic reasoning: identifying, understanding, and summarizing arguments and evaluating supporting evidence in both reading and listening
- Module 4 - Academic interactions: navigating relationships with supervisors, teams, and other faculty in person, through email, at conferences, and in seminars
- Module 5 - Career preparation: best practices for CVs/resumes, job interviews, elevator pitches, and online brand building
- Module 6 - Teaching: principles of effective teaching including developing lessons, interacting with students, and grading


## Application Procedures

HOW TO APPLY

1. Determine the appropriate application form and/or procedures. (See Categories of Admission below.)
2. Determine application deadline. (See Application and Documentation Deadlines in this section.)
3. Refer to the Admission Requirements and specific Faculty sections of this Calendar for further information.
4. Complete and submit your application as directed.
5. Submit all required documentation to McMaster. (See Documents in this section.)
6. Once you're-an application has been received, McMaster's Office of the Registrar, Admissions will provide you with an acknowledgment of receipt of your application plus further instructions/details about tracking you're-the application.

## 1. Categories of Admission

## A. Current Ontario High School Students

You should complete the The 101 application should be used if you meet ALL of the following requirements apply:

- You are taking courses during the day at an Ontario secondary school (this includes students returning for second semester and graduated students returning to upgrade one or more courses)
- You have not, at some any point, been out of secondary school for more than seven consecutive months
- You will have received or expect to receive your Ontario Secondary School diploma (OSSD) with six 4U/M courses at the end of the current year
- You have not attended a postsecondary institution (college/university/career college)
- You are applying to the first year of an undergraduate degree program or diploma program at an Ontario university
- You are under 21 years of age.

Use the Undergraduate 101 on-line application at www.ouac.on.ca/101/. Please consult with your secondary school guidance office regarding this application process.

## B. All Other Canadian High School Students

If you are For applicants currently attending secondary school outside of Ontario or have recently completed a secondary school diploma in any Canadian province or territory

- Use the OUAC 105 on-line application at www.ouac.on.ca/105/.


## C. High School Students with International Qualifications

If you are Applicants currently attending or have recently completed a secondary school program outside of Canada, and you are not a Ganadian citizen nor Permanent Resident of Canada

- Use the OUAC 105 on-line application at www.ouac.on.ca/105/.


## D. University/College Transfer/Continuing Students

If you are currently registered in or have completed an undergraduate degree program at another university and wish to attend McMaster OR
If you-are currently registered in or have attended or completed a college diploma program and wish to attend McMaster

- Use the OUAC 105 on-line application at www.ouac.on.ca/105/.


## E. Nursing Consortium Programs

\#you are interested in a-Applying to McMaster's Nursing (B.Sc.N). programs at the Mohawk College or Conestoga College sites

- For admission to Nursing for Fall 2022, applicants to all three sites will apply through the OUAC at www.ouac.on.ca.
- Current Ontario high school applicants - use the OUAC 101 on-line application at www.ouac.on.ca/101/.
- All other applicant groups use the OUAC 105 on-line application at www.ouac.on.ca/105/.


## F. Previous McMaster Degree Students (Returning Students)

1. Readmission: If you are a former McMaster student with a record of course enrolment, who was in good standing and who voluntarily withdrew from an undergraduate program more than five years ago (providing you have not attended another university nor received a college diploma since last registered at McMaster). If you are a former Nursing or Physician Assistant student, you must apply for readmission regardless of the amount of time that has elapsed. Apply on-line at:future.memaster.ca/admission/process/returning/ https://registrar.mcmaster.ca/build-degree/continuing-students-second-degreel
2. McMaster Second Degree: If you are a McMaster graduate or potential graduate at the end of your current academic term and wish to pursue a second undergraduate degree (providing you have not attended another university nor received a college diploma since last registered at McMaster).

- Use the McMaster Returning Student Application to apply on-line at future.mcmaster.ca/admission/process/returning/ https://registrar.mcmaster.ca/build-degree/continuing-students-second-degreel

3. Reinstatement: If you are a former McMaster student who was required to withdraw from studies at McMaster.

- Complete Obtain the Reinstatement Request Form found from the Office of the Registrar, Gilmour Hall, Room 108, McMaster University, Hamilton, Ontario, L8S 4L8 or online here: https://registrar.mcmaster.ca/builddegree/reinstatement/. Submit a Service Request in Mosaic and attach the completed form.

4. Continuing Student: If you are a McMaster graduate from an undergraduate program and wish to become a Continuing Student.

- You do not need to apply for admission. Contact the Office of the Registrar, Services, for assistance https://registrar.mcmaster.ca/events/connect-with-us-online/.


## G. Visiting Students (Letter of Permission - For Credit at Another University)

If you are currently enrolled at another university and wish to attend McMaster to take courses on a Letter of Permission for credit at that university

- Use the OUAC 105 on-line application at www.ouac.on.ca/105/
H. Part-Time Degree Studies at McMaster Only

If you wish to begin undergraduate studies on a part-time basis (enrolled in less than 18 units of study)

- Use the OUAC 105 on-line application at www.ouac.on.ca/105/.


## I. Post-Degree Studies

If you wish to register as a post-degree student (taking graduate courses but not proceeding to an advanced degree)

- Contact the Graduate Studies Office, Gilmour Hall, Room 212, McMaster University, Hamilton, Ontario, L8S 4L8 for information on how to apply to the appropriate academic department(s).


## J. Medical Program

See the heading Admission Policy for the Medical Program in the Faculty of Health Sciences section of this Calendar.

## 2. Documents

## A. Required Documents

A complete application includes: an application form, relevant transcripts and all other documentation stipulated in the Admission Requirements and specific Faculty sections of this Calendar, in letters from the appropriate Faculty and/or in letters from Office of the Registrar, Admissions.
You must provide McMaster with Transcripts of marks and/or certificates from all secondary and post-secondary institutions attended must be provided. When you are requested to provide an official transcript, then an official signed and sealed transcript is a signed and sealed record of all academic achievement must be issued and sent by an academic institution directly to McMaster University, Office of the Registrar, Admissions.
If you are currently attending secondary school, please see your contact a guidance counselor to request that your current Grade Report showing all courses you will be completing in Grade 12 courses. If you have previously attended secondary school in another province, you may need to submit a request for a transcript containing your secondary school marks from the Ministry or Department of Education in that province if it is not normally provided by your high school.-
Where documentation from a school outside of Canada is in a language other than English, you must provide official transcripts in the original language as well as efficial, notarized English translations are required.
For specific document submission requirements and processes/procedures, please review:
https://future.mcmaster.ca/admission/documents/.
If McMaster concludes based on reasonable grounds that the applicant has falsified any information presented to the University as part of his or her application, without limiting any other rights of McMaster available at law, McMaster reserves the right to revoke the offer and, subject to applicable law and University Policy, to terminate a student's enrolment.
Without limiting McMaster's General Statement on Collection of Personal Information and Protection of Privacy, please take note that McMaster University collects and retains personal information of applicants for admissions to McMaster University under the authority of The McMaster University Act, 1976. This information may be used for the administration of admissions and registration and, subject to McMaster University policies (as may be amended or revoked from time to time), McMaster may disclose any evidence of misrepresentation, fraud or falsification of admissions documentation to other educational institutions, to government agencies, to lawenforcement agencies and to other relevant third parties. The information you provide on any application for admissions 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.

## B. Retention of Documents

All documentation submitted in support of you're-an application for admission becomes the property of the University and will not be returned.
Documentation for those not accepted If you are not accepted, or you for those who fail to enroll following acceptance, your documentation-will be destroyed at the end of the admissions cycle. If you an applicant reapplies, reapply, you they must resubmit any new academic information in addition to the documentation submitted previously required documentation.
3. Application and Documentation Deadlines

Page 16 of $\mathbf{2 0}$

McMaster University reserves the right, at its sole discretion, not to accept, process or adjudicate applications or amendments to applications to any program at any time. Meeting minimum application requirements does not guarantee admission to any program at McMaster University. Application fees are non-refundable and you are advised to review admission requirements carefully before applying, to determine your academic eligibility for admission consideration for admission. Please see the Admission Requirements section of this calendar for general information. University transfer applicants should review programs by Degree and Minors Programs (by Degree) and Minors requirements section before applying. McMaster University has a number of highly competitive by-selection programs that require requiring a mandatory supplementary application/assessment, and all of these programs have early application and supplementary submission deadlines, as specified in the chart below. Failure to apply on time or to submit the required supplementary application/assessment by the specified dates will automatically disqualify applicants for consideration for to these specified programs. You are advised to submit your application Submission of an application and/or amendments should be made well in advance of the deadlines listed below.

## Fall and Winter Terms

The dates and deadlines listed below are for applications submitted for the 2022-2023 2021-2022 academic year. Please refer to http://future.mcmaster.ca for the date and deadline information for 2023-2024 applications.

| PROGRAM | APPLICATIONS | MANDATORY SUPPLEMENTARY APPLICATIONS |
| :--- | :---: | :---: |


| PROGRAM | APPLICATIONS | MANDATORY SUPPLEMENTARY APPLICATIONS |
| :---: | :---: | :---: |
| Engineering \& Society (Above Level 1) (Regular and Co-op) |  |  |
| Health Sciences I (Honours) | January 1513 | Early February Details at: https://bhsc.mcmaster.ca |
| Health Sciences (Honours) (Above Level 1) | April 1 | Early May Details at https://bhsc.mcmaster.ca |
| Honours Biology and Pharmacology Co-op (Above Level 1) | February 1 | February 1 <br> Mandatory Letter of Intent specifying reasons for applying and applicant suitability for the program. Email biophrm@mcmaster.ca by February 1. |
| Honours Integrated Science I | February 1 January 13 | February 1 <br> Details at: https://www.science.mcmaster.ca/sis/undergraduate/isci/isci-admission-requirements.html |
| Integrated Biomedical Engineering \& Health Sciences 1 (Regular and Co-op) | January 15-13 | End of January <br> Online Kira ${ }^{\circledR}$ Assessment <br> Details at: https://www.eng.momaster.ca/future-students/supplementary-application |
| Integrated Business \& Humanities | January 15-13 | February 1 <br> Online Kira ${ }^{\oplus}$ Assessment |
| Justice, Political Philosophy \& Law | April 1 | April 1 <br> For more information see: https://philos.humanities.mcmaster.ca/undergraduateprograms/ justice-political-philosophy-and-law-program/ |
| Midwifery (including submission of all transcripts) | February 1 | N/A |
| Physician Assistant (including submission of all official transcripts) <br> Note: This program is not open to International Applicants. This program is open to Canadian citizens and present <br> Permanent Residents of Canada only. | February 1 | End of February 4 |
| Social Work | February 1 | February 1 |
| Nursing I: Secondary School Applicants | January 15-13 | Mandatory Supplementary application information is available on the CASPer ${ }^{T M}$ website. |
| Nursing 1 (university transfer applicants from programs other than Nursing and applicants from college pre-health programs (including submission of all official transcripts) | February 1 | Mandatory Supplementary application information is available on the CASPer ${ }^{T M}$ website. |
| Nursing:Transfer from another Nursing program to the McMaster site. |  | Students from other university Nursing programs should contact the McMaster Nursing program office at 905-525-9140, ext. 22232, for information about transfer options and application procedures. McMaster will not typically accept transfer applications from students already in a Nursing program elsewhere. |
| Nursing BasicAccelerated Stream (above level 1) (including submission of all official | February 1 | Mandatory Supplementary application information is available on the CASPer ${ }^{T M}$ website. |


| PROGRAM | APPLICATIONS | MANDATORY SUPPLEMENTARY APPLICATIONS |
| :--- | :---: | :---: |
| transcripts) |  |  |
| Nursing Post Diploma <br> RPN Stream (Mohawk) <br> (Conestoga) | February 1 | Mandatory Supplementary application information is available on the |
| CASPerT ${ }^{\text {webssite. }}$ |  |  |

## Application Deadlines for All Other McMaster Programs for Fall and Winter Terms

*February 1 - Applications received on or before February 1 with all supporting official documentation received no later than February 15 from applicants with no postsecondary experience will be reviewed for admission pending space availability in the program. All applications received after February 1 will be considered only if there is space available in the program.
April 1 - The final date to apply for admission and submit all required documentation for admission consideration is April 1. This final deadline applies to all international and domestic applicants.

|  | APPLICATION DEADLINE | SUPPORTING DOCUMENTATION <br> DEADLINE |
| :--- | :---: | :---: |
| Ontario High School Applicants (Recommended) | January 15-13 | April 1 |
| Early Deadline* (see above) | February 1 | February 15 |
| Final Deadline Domestic Applicants | April 1 | April 1 |
| Final Deadline International Applicants | April 1 | April 1 |
| B.Tech. Degree Completion Program Only - <br> January Entry <br> May Entry <br> September Entry | November 15-1 | November 15 |

## Spring/Summer Term

|  | DOMESTIC DEADLINE | INTERNATIONAL DEADLINE |
| :--- | :---: | :---: |
| May Entry (Term 1 or 3) | April 1 | April 1 |
| Supporting Documentation for May Entry | April 1 | April 1 |
| June Entry (Term 2) | May 15 | May 15 |
| Supporting Documentation for June Entry | May 15 | May 15 |

## Former McMaster Students: Re-admission / Re-instatement Deadlines for Fall and Winter Terms

|  | DOMESTIC DEADLINE | INTERNATIONAL DEADLINE |
| :--- | :---: | :---: |
| Re-instatement Deadline | June 30 | June 30 |
| Re-admission Deadline | July 15 | July 15 |
| Nursing Deadline | February 1 | February 1 |
| Physician Assistant | February 1 | N/A |

## Academic Advising for Admitted Students

If you are Applicants offered admission to a program at McMaster, you will be asked to confirm that you have accepted acceptance of the offer, of admission and will to attend the University. Your Admission offers will include information regarding acceptance procedures for the offer of admission, specified deadline for your acceptance, a response deadline, and registration procedures. Offer of Admission acceptance deadlines specified in you're-the Offer of Admission letter are strictly enforced. Please ensure that you accept Accepting the your offer of admission as directed well before the specified deadline date is recommended.
If you are admitted to Level 1, your the Faculty Office may also arrange a meeting with an Faculty Academic Advisor to set up your program. Although summer advising and registration sessions are not compulsory, you are strongly it is recommended advised to participate.
If you are offered admission above Level 1, you may arrange for academic advising with the Office of the Associate Dean of the Faculty offering the program, or the Office of the Director of the program may be arranged.

## 4. Review of Admission and Re-Admission Decisions

No appeal procedure shall be available for decisions on admission or re-admission to the University. Such decisions may be reviewed within the following framework:
a. An applicant to the University believes that the admission or re-admission decision, or, in the case of a transfer student the decision to grant credits, is incorrect, or based on incorrect or incomplete information, may, within one week of receiving the decision, request a review of that decision by writing to the Senior Associate Registrar, Undergraduate Admissions, stating why she/he they thinks the decision should be reviewed.
b. The Senior Associate Registrar, Undergraduate Admissions, shall determine whether the information on which the decision was based was incomplete or incorrect and, if so, shall refer the request for review to the appropriate Faculty Committee. That Committee shall make a final decision and report it to the Senior Associate Registrar, Undergraduate Admissions, who shall then convey the decision in writing to the student.

## Enquiries: Application Procedures

For information about applying to McMaster, visit: https://future.mcmaster.ca/how-to-apply/, or direct your enquiries to our online chat: https://future.mcmaster.ca/contact-us/

Office- of the Registrar, Admissions
Gilmour Hall, Room 109
AcMaster University
Hamilton, Ontario, L8S 4L8
Telephone: (905) 525-4600
https://future.memaster.cat

## General Academic Regulations Non-Numeric Grades and Notations

## Honour Lists

Students are reviewed for Deans' Honour Lists (DHL) and Provost's Honour List (PHL) each time a minimum of 30 units (with at least 24 graded units) may not exceed 6 units assessed with a non-numeric grade) have been completed. Subsequent assessments are based on all units completed since the previous review. Students will be named to the Deans' Honour List when a minimum average of 9.5 is achieved. Students will be named to the Provost's Honour List when an average of 12.0 is achieved.

