AGENDA

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      ii. Changes to Award Terms (Approval)
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*Approval*

48 - 53

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*Approval*

54 - 75

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*Approval*

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*Information*

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viii. Certificate of Completion, Data Science

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*Information*

96

i. Certificate of Completion, Foundations of Analytics: Business Intelligence

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vi. Certificate of Completion, Foundations in Canadian Health
Certification of Completion, Pathophysiology & Epidemiology

Certificate of Completion, Principles of Health Information

Certificate of Completion, Workplace Health & Wellness

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Memo - Closure of Certificates of Completion (Health and Social Services)

f. NEW CERTIFICATE OF ATTENDANCE PROGRAMS

Information

Certificate of Attendance, Connected Health and the Internet of Things

6. 2021-2022 SESSIONAL DATES

Approval

2021-2022 Sessional Dates

7. ACADEMY FOR MICROCREDENTIALS AND EXTERNAL LEARNING

Approval

Proposal - Academy for Microcredentials and External Learning

8. OTHER BUSINESS
The following document describes the governance and activities of McMaster’s Undergraduate Council (UGC) and its related committees, except for the Quality Assurance Committee and the Awards Committee. It is a reference for staff that prepare curriculum submissions and to serve as a guide for the governance framework of curriculum.

Overview of Undergraduate Council (UGC)

Purpose
As a committee of Senate, bylaws require UGC to “initiate and regulate matters concerning undergraduate work of concern to the University as a whole, in accordance with such directives and priorities as have been established by the Senate.” In effect, UGC evaluates revisions to the undergraduate curriculum, academic regulations, policy, and financial aid and awards as recommended by the Faculties or the Arts & Science Program.

UGC is also expected to “report and to make recommendations to the Senate upon such matters as may be judged necessary by the Undergraduate Council or as required by the Senate.”

Member Composition
The composition of UGC includes:

- 17 ex officio members:
  - Vice-Provost (Faculty) (Chair)
  - Chancellor
  - President and Vice-Chancellor
  - Provost
  - Vice-Provost (Faculty)
  - Associate Vice-President (Students and Learning) & Dean of Students
  - Associate Deans (Academic) of the Faculties of Business, Engineering, Humanities, Science and Social Sciences
  - Vice-Dean, Undergraduate Health Sciences Education
  - Director of the Arts and Science Program
  - Director of the Centre for Continuing Education
  - University Registrar
  - University Librarian
  - Principal of McMaster Divinity College
- Six elected faculty members, comprising one member from each Faculty offering undergraduate work
- Seven undergraduate students, one from each of the six Faculties offering undergraduate work, and one from the Arts and Science Program, to be appointed by the Senate on the recommendation of the Dean/Director
- Invited guests (non-voting)

Committees
UGC has five standing and several ad hoc committees:

1. Executive Committee:
   - May act on behalf of, and within the functions granted to UGC by Senate and typically reviews time-sensitive business occurring outside of UGC’s usual meeting schedule. Actions are reported for ratification at the next regular meeting of UGC. Membership of the committee includes: UGC’s Chair, Vice-Chair, and the Chairs of each of the Standing Committees. The Committee also approves the memberships for standing and ad-hoc committees annually.

2. Awards Committee:
   - Recommends terms and conditions for all undergraduate awards and directs the Office of the Registrar (Aid & Awards) regarding the policy, procedure, and administration for the acceptance of such awards.

3. Certificates & Diplomas Committee:
   - Operates within the framework of the Senate Policy on Diplomas and Certificates.
   - Assesses, for recommendation to UGC, new Certificate and Diploma programs and revisions to existing programs. The committee will either make a recommendation for approval by UGC and Senate or, may
provide a report for information in the case of new Certificates of Attendance or Completion, or minor revisions to existing certificates and diplomas.

4. **Curriculum & Admissions Committee:**
   - Coordinates and examines curriculum revisions for inclusion in the Undergraduate Calendar.
   - Reviews curriculum changes in detail and provides a summary report to UGC and Senate for approval.

5. **Quality Assurance Committee:**
   - Operates within the framework of the *Policy on Academic Program Development and Review*.
   - Assesses IQAP cyclical reviews and submits Final Assessment Reports to Undergraduate and Graduate Councils for information.
   - Receives status reports of any pending program proposals.

6. **Ad hoc Committees** are struck as required by its mandate. Recent committees established by UGC include Ad hoc Committees on/to:
   - Academic Structures for Student Success (CASS)
   - Certificates, Diplomas, and Microcredentials
   - Deferred Examinations
   - Major and Two Minors Pathway (M2M)
   - Review Non-McMaster Credentials
   - Review the Undergraduate Awards Policy

**Business Conducted**

UGC regulates the following undergraduate academic activities:

i. New programs, program closures, and revisions to programs including names, ownership, or degree designation

ii. New certificate and diploma programs; revisions to, or closures of

iii. Revisions to courses, program and admission requirements

iv. Revisions to academic policy and regulations for recommendation to the Senate. For example:
   - General Academic Regulations
   - Undergraduate Course Management Policy
   - Religious, Indigenous, Spiritual Obligations (RISO) Policy

v. Sessional dates, for information to the Senate

vi. Terms and conditions of student financial aid and awards

vii. Any other business placed on its agenda by its Chair, UGC’s Secretary, an Associate Dean or Dean of a Faculty offering undergraduate work, or the Director of the Arts and Science Program.

In practice, the above items i, ii, and iii are reviewed in detail by the C & A Committee and are provided in summary to UGC for approval. See Table 1 below and Appendix 1 for more detail about the approval workflow of academic activities.

**Timeline**

<table>
<thead>
<tr>
<th>Month</th>
<th>Business Activity</th>
</tr>
</thead>
<tbody>
<tr>
<td>April</td>
<td>Meeting dates for the forthcoming academic year are announced</td>
</tr>
<tr>
<td>September</td>
<td>Members receive meeting dates and member composition for the academic session</td>
</tr>
<tr>
<td></td>
<td>Vice-chair is elected</td>
</tr>
<tr>
<td>October – November</td>
<td>Curriculum changes are discussed and approved by Faculty-level curriculum committees and Faculty Councils, for recommendation to the C &amp; A Committee</td>
</tr>
<tr>
<td></td>
<td>In November, the C &amp; A Committee receives, reviews, deliberates, and approves curriculum changes for recommendation to UGC and Senate (where applicable)</td>
</tr>
</tbody>
</table>

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1 Refer to the *Policy on Academic Program Development and Review* for procedures and information on new program proposals. For program closures, see the *Protocol for the Closure of Undergraduate Programs*. 

April 2020
<table>
<thead>
<tr>
<th>December</th>
<th>UGC approves changes from November C &amp; A Committee</th>
</tr>
</thead>
<tbody>
<tr>
<td>January</td>
<td>The C &amp; A Committee approves final curriculum changes (as addenda) for recommendation to UGC and Senate (where applicable). Note: this is the last opportunity for C &amp; A approval for the forthcoming academic year’s curriculum. Senate approves changes recommended from UGC in its December meeting (where applicable).</td>
</tr>
<tr>
<td>February</td>
<td>UGC approves final changes from the January C &amp; A Committee. Note: this is the last opportunity for UGC approval for the forthcoming academic year’s curriculum. UGC approves Sessional Dates for the Academic year that begins in 18 months. Senate approves final curriculum changes (where applicable).</td>
</tr>
<tr>
<td>March</td>
<td>Undergraduate Calendar goes live (late March). Senate receives Sessional Dates for information for the Academic year that begins in 18 months.</td>
</tr>
</tbody>
</table>

The timeline for the curriculum revision process exists to ensure downstream committees make the appropriate approvals before the undergraduate calendar goes live. In some cases, additional approvals will be necessary from the Student Fees Committee, University Planning Committee (UPC), the Senate, and the Ministry of Training, Colleges, and Universities (MTCU).

Traditionally, the C & A Committee examines the majority of annual curriculum changes, in detail, during its November meetings. These meetings are often 3-4 hours in duration each and span the course of two or three days (alternating mornings and afternoons). After its meetings, the committee provides UGC with a summary report of the changes, which is typically approved by UGC during the December meeting that precedes the academic year under review.

**Governance and Administration**

The University Secretariat is responsible for coordinating and facilitating the work of UGC and its committees and advises these bodies on governance, policy, and process. Specific tasks performed by the Secretariat on behalf of UGC include:

- Establishing meeting dates and locations
- Inviting members, consultants, observers and special guests to meetings as required by UGC’s business
- Monitoring expected attendance for quorum
- Collecting and distributing meeting materials to members
- Capturing meeting minutes, appending the final approved versions to the meeting packages, and archiving the package to form the official record
- Drafting remarks for the meeting chair which may include a list of motions for the meeting
- Providing advice as to the process in which UGC conducts business

UGC generally divides its meeting agenda between DISCUSSION, APPROVAL, and INFORMATION items, and includes reports from its committees. In some cases, additional governing bodies including UPC, the Student Fees Committee, or Senate must approve or receive an item for information, and typically UGC uses separate motions to identify these items in the agenda. Some examples include:

**Items recommended to Senate for approval:**
- New degree programs (also to UPC)
- Degree, certificate, or diploma closures; suspension of program admissions (also to UPC)
- Degree program name changes
- Revisions to academic regulations or admission requirements

**Items recommended to UPC for approval:**
- New degree programs (also to the Senate)
- Closures of degree programs or suspension of program admissions (also to the Senate)
- Certificate or diploma closures (in cases where there is an impact on resources for the unit or Faculty)
Notes:
- UGC and its committees do not review business related to student fees, as this responsibility rests with UPC and the Student Fees Committee.
- External approval or reporting may be necessary in the case of new programs or major modifications to existing programs.

Table 2: Undergraduate Governance Approval Chain

<table>
<thead>
<tr>
<th>Activity</th>
<th>C&amp;D</th>
<th>C&amp;A</th>
<th>UGC</th>
<th>UPC</th>
<th>Senate</th>
<th>Quality Council</th>
<th>MTCU</th>
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<tr>
<td>New degree designation²</td>
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<td>A</td>
<td>A</td>
<td>A</td>
<td>A</td>
<td>A²</td>
<td></td>
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<tr>
<td>Minor Revisions</td>
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<td>S</td>
<td>S</td>
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<td></td>
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<td>Major Revisions</td>
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<td>Name change</td>
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<td>Closure/ Suspension of Admission</td>
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<td>Admission Requirements (from high school or upper level)</td>
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<td>Application Procedures</td>
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<td>Sessional dates</td>
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<td>Certificates and Diplomas</td>
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<td>A</td>
<td>A²</td>
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<td>A</td>
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<td>Concurrent Certificate</td>
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<td>A</td>
<td>A²</td>
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<td>Certificate of Attendance</td>
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<td>I</td>
<td>I</td>
<td>I</td>
<td>I</td>
<td>I²</td>
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<tr>
<td>New/Revision/Closure</td>
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<td>I</td>
<td>I</td>
<td>I²</td>
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<td>I</td>
<td>I</td>
<td>I</td>
<td>I²</td>
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<tr>
<td>Non-curricular calendar copy⁵</td>
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<td>S</td>
<td></td>
<td></td>
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</tr>
</tbody>
</table>

See also Appendix 1 for a detailed process map illustrating the workflow for UGC’s business.

Curriculum & Admissions Committee (C & A)

Purpose
The C & A Committee receives and scrutinizes, in detail, annual changes to curriculum, admissions requirements, and Faculty-level regulations that are proposed by each Faculty and the Arts & Science program. As per the Senate bylaws,

² New degree designation/abbreviations also proceed to the Senate Committee on University Ceremonials and Insignia.
³ "Non-core programs" (as defined by the Ministry) require approval. Contact the Registrar’s Office for more information.
⁴ For example: PIC, Undergraduate Course Management Policy, RISO, Fall break, Academic Accommodations Policy, approval of University partnerships in principle (e.g. Mohawk College, Navitas Canada Holdings Limited and McMaster University College, etc.).
⁵ For example, departmental Faculty Member lists, glossary item definitions, etc.
the Committee assesses each submission by its “fairness to students, avoidance of conflicts, and equity among Faculties.” This evaluation ensures:

- Equity in the outcome and application of regulations, requirements, and policies for all undergraduate students
- Students are not disadvantaged by revisions proposed by a department or Faculty outside of their own
- Prerequisite courses are used to ensure acceptable preparation and not to manage enrolment in the course
- Students may enrol in courses that are outside of their discipline without unreasonable restriction

The collegial review of curricular and admission revisions should also ensure that new requirements or policies are “consistent with general University guidelines,” including those contained in the Undergraduate Course Management Policies. Revisions approved by the Committee are recommended to UGC and form the basis of the annual update of the undergraduate calendar.

Member Composition

The membership of C & A Committee is drawn from members of UGC and normally includes:

- Ex Officio:
  - Vice Provost (Faculty)
  - Associate Deans (Academic) of the Faculties of Business, Engineering, Humanities, Science and Social Sciences
  - Vice-Dean, Undergraduate Health Sciences Education
  - Director of the Arts & Science Program
  - University Registrar
- Two elected members of faculty
- Three undergraduate students
- Consultants (non-voting)

The Chair of UGC appoints the Chair of the C & A Committee. A majority of members constitutes quorum, which may include the Chair.

Procedure for the Annual Review of Curriculum Changes

Schedule

Table 1 above describes the annual timeline for UGC’s business. The annual cycle traditionally begins in the September preceding the academic year under review. The cycle beings with Faculty-level curriculum committees reviewing and approving the changes proposed by their departments; this review continues throughout September and October. By early November, each Faculty Council will have approved all proposed changes, and the final set of revisions is submitted to the C & A Committee for its November meetings. When required, UGC approves material from the November C & A meeting during its December meeting. In turn, UGC submits material for approval, when required, to Senate for its January meeting. After this time, UGC will entertain only critical revisions and only with the agreement of the C & A Committee Chair.

Meetings and Agenda

The C & A Committee uses its in-person meetings to review, discuss, and approve curriculum changes received from each Faculty and the Arts & Science Program (see the evaluation criteria listed under Curriculum & Admissions Committee: Purpose above). The C & A Committee traditionally meets once per month during the academic year but addresses the majority of business during its November meeting. In consultation with the Chair, the Secretariat establishes the order in which the C & A Committee reviews submissions, which often depends on the significance and the time required for deliberation of the proposed changes. Voting may take place electronically when required. The Secretariat will capture minutes from meetings, and members will approve these minutes at the next scheduled meeting. After approval, minutes are appended to the corresponding meeting package and form the official record. The Chair will use Procedures for Meetings and Organizations to facilitate meetings and group decision-making.
Curriculum Revision Submissions

Documents submitted by the Faculty offices should be electronic and illustrate all revisions to degrees, programs, courses, admission requirements, descriptions, regulations, and policies. The inclusion of an abstract is encouraged, but submissions must present the annotated calendar copy for each applicable section in its entirety. That is, existing calendar copy should be marked-up using the strikeout feature to show text deletions and the grey highlight feature to show text additions. A brief rationale should be included for each change (or set of changes) unless it is typographical error correction, or, the reason for the change is apparent.

All revisions move through stages of approvals, and each level of governance requires different degrees of detail to consider for their acceptance. The C & A Committee requires the most detail for its deliberations, UGC requires a summary, and Senate needs only enough detail to approve major revisions at a high level. Each governing body that reviews the submission must be supplied with an appropriate amount of detail so they may fulfil their mandate. Sections of a submission intended for lower governing bodies (and have higher amounts of detail) will be removed from the report by the Secretariat as it moves through the governance process. See Table 2 above for a matrix outlining the approval chain of typical undergraduate academic business and also Appendix 2 for a sample submission template illustrating the structure used in the document.

Content

The C & A Committee reviews all matters related to the academic work of undergraduate students at McMaster, including new or revised content as noted below. New programs, program closures and substantial changes to admission standards, program requirements, or academic regulations must be further reviewed by UGC and Senate for approval (see Table 2 above for a complete list).

a) Undergraduate degrees and programs:

   New Programs
   
   The Committee reviews the full program proposal as described in the Policy on Academic Program Development and Review.

   Revisions to Existing Programs
   
   It is not necessary to include the entire program requirements in the submission and only the section(s) being revised are required. The highlight/strikeout method should be used to indicate changes.

   Program revisions often include:
   
   - The addition, removal, or substitution of required or elective courses
   - The adjustment of required course units for a particular level of the program
   - The addition, removal or modification of program notes

   Where changes are substantive, academic units should include a brief rationale for each change (or group of changes).

   Program Closures
   
   Proposals seeking the phasing out or termination of programs, diplomas, or certificates should briefly outline:
   
   - The rationale for the closure
   - The number of in-course students affected by the closure
   - The anticipated strategy to manage in-course students (if applicable)
   - The expected timeline for the ceasing of admission, wind-down, and ultimate termination of the program

b) Specializations, streams, interdisciplinary minors and minors:

   Proposals may include a brief description and rationale, followed by the new calendar copy

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6 Refer to the Policy on Academic Program Development and Review for procedures and information on new program proposals. For program closures, see the Protocol for the Closure of Undergraduate Programs. See also Table 2 describing the required approval sequence for the introduction, revision, or closure of various credentials.

April 2020
Revisions and closures shall be formatted as described in (a) above, though it is understood that current participation data may not be available for some minors.

c) Program admission (including Level I and upper-year program admission):
   - Adjustments to requirements are included in the “Revisions to Programs” section of the report
   - More senior governing bodies require an appropriate level of detail for their approvals

d) Course descriptions and requisites:
   - New courses are listed in the appropriate section of the report (see Curriculum Submissions: Format below) and should include the complete title and description of the course
   - Revisions to existing courses are indicated using the highlight and strikeout method within the full course description
   - The “Course Deletions” section of the submission template lists all the courses to be removed from the calendar (see Curriculum Submissions: Format below)
   - Rationale and supplemental details (e.g. projected enrolment, reserve capacities, etc.) may be included with the course revisions, especially if the course includes/excludes enrolment from other Faculties

e) Faculty, program, or department-specific regulations:
   - See Curriculum Submissions: Format below for placement.

f) General Academic Regulations and university-wide academic policy:
   - proposed revisions to the General Academic Regulations or university-wide academic policy are included in the Report to the Senate section of the package and should include appropriate details for the Senate’s consideration.

Curriculum Submissions: Format
Annual curriculum submissions by Faculty offices use the following structure:

Faculty of xxxx - Curriculum Revisions for the 20xx-20xx Undergraduate Calendar

i. Summary Page: Report to Senate
   Summary of Major Curriculum Changes
   1.0 New Programs
   2.0 Program Closures/Mergers
   3.0 Major Curriculum Revisions
   4.0 Revisions to the General Academic Regulations, Faculty-Level Regulations, and Academic Policy

ii. Summary Page: Report to Undergraduate Council
   Narrative summary of changes to curriculum, grouped by department

iii. Report to the Curriculum & Admissions Committee
   Submissions presented in detail, grouped by department and by category
   Department of xxxx
   1.0 New Programs, specializations, or minors
   2.0 Revisions to Existing Programs, Specializations, Minors, and Program-Level Regulations (including program notes)
   3.0 Deletions of Programs, Specializations, or Minors
   4.0 New Courses
   5.0 Revisions to Existing Courses and Departmental Notes
   6.0 Course Deletions
   7.0 Revisions to non-curricular calendar copy (e.g. faculty member list, glossary, etc.)

The Committee meeting package is later assembled using all of the consolidated Faculty submissions, and each Faculty appears as a separate appendix within the Curriculum Revisions for the 20xx-20xx Undergraduate Calendar portion of the agenda. See below for the typical structure of the Committee’s meeting package. Note: The Secretariat must receive final curriculum submissions at least one week before the in-person meeting so that members have adequate time to review the material on the secure portal.
Meeting Packages

A typical Committee meeting package uses the following structure:

I. Agenda
II. Minutes of the Previous Meeting (for approval)
III. Curriculum Revisions for the 20xx-20xx Undergraduate Calendar
   i. Arts & Science Program - Curriculum Revisions for the 20xx-20xx Undergraduate Calendar
   ii. Faculty of Business - Curriculum Revisions for the 20xx-20xx Undergraduate Calendar
   iii. Faculty of Engineering - Curriculum Revisions for the 20xx-20xx Undergraduate Calendar
   iv. Faculty of Health Sciences - Curriculum Revisions for the 20xx-20xx Undergraduate Calendar
   v. Faculty of Humanities - Curriculum Revisions for the 20xx-20xx Undergraduate Calendar
   vi. Faculty of Science - Curriculum Revisions for the 20xx-20xx Undergraduate Calendar
   vii. Faculty of Social Sciences - Curriculum Revisions for the 20xx-20xx Undergraduate Calendar

Changes presented by each Faculty are normally approved using a single motion (i.e. one motion per Faculty). However, when a senior governing body must approve an item separately (e.g. a new program), the Committee uses individual motions for these items. Table 2 above describes which items are approved by more senior governing bodies: these items require separate motions for approval.

Report from the C & A Committee to UGC

- UGC requires only a summary of general curriculum revisions, but each Faculty must include a hyperlink to the complete submission should UGC members require more information. See Appendix 2 for a sample report from the C & A Committee to UGC.
- the C & A Committee forwards its report containing the Faculty submission summary reports to UGC (see Curriculum Submissions above).
- items to be referred to the Senate for approval (e.g. new/closed programs, changes to admissions, etc.), should include the full proposal or content.

Certificates and Diplomas Committee (C & D)

See the Senate Policy on Diplomas and Certificates for a comprehensive description of the Committee’s mandate and process.

Purpose

Operating within the framework of the Senate Policy on Diplomas and Certificates, the C & D Committee assesses, for recommendation to UGC, new Certificate and Diploma programs and revisions to existing programs. The committee will either make a recommendation for approval by UGC and Senate or, may provide a report for information in the case of new Certificates of Attendance or Completion.

Member Composition

The membership of the Certificates & Diplomas Committee is drawn from members of the Senate and must include:

- Ex Officio:
  o The Vice Provost (Faculty)
  o The University Librarian
  o The University Registrar
- Three elected members of faculty
- Two undergraduate students
- Consultants (non-voting)

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7 Revisions proposed after the November Committee meetings are considered addenda to the first set of revisions.
The Chair of UGC appoints the Chair of the Certificates and Diplomas Committee. Quorum requires two-thirds of voting members, which may include the Chair. The number and composition of the committee’s membership may be adjusted to ensure diversity in Faculty representation.

Procedure and Schedule for Review

From time to time, the Centre for Continuing Education (CCE) or Faculty offices may propose new certificate or diploma programs (or revisions to existing programs) for consideration by the C & D Committee. There is not a fixed schedule for proposals to be considered during the academic year, but adequate time must be left for consideration by more senior governing bodies, before a given program may commence. All governing bodies must approve revisions by the end of March preceding the academic year under review if revisions are to appear in the undergraduate calendar. See Table 2 above for the types of certificate or diploma revisions that may require further approval by more senior governing bodies.

Meetings & Agenda

The Certificates and Diplomas Committee uses its in-person meetings to review, discuss, and approve new certificates and diplomas, along with revisions to existing programs. Each category of certificates and diploma requires a different level of consideration based on the Senate Policy on Diplomas and Certificates. In consultation with the Chair, the Secretariat establishes the order in which the Committee reviews proposals, which often depends on the significance and the time required for deliberation of the proposed changes. Agenda items for the C & D Committee are generally separated by those FOR APPROVAL and those FOR INFORMATION and include new programs, revisions to existing programs, and program closures. Voting may take place electronically when required. The Secretariat will capture minutes from Committee meetings, and members will approve these minutes at the next scheduled meeting. After approval, they are appended to the corresponding meeting package and form the official record. The Chair uses Procedures for Meetings and Organizations to facilitate meetings and group decision-making.

Submissions

New Programs

CCE or a sponsoring academic unit submits proposals for new undergraduate diplomas, stand-alone certificates, and concurrent certificates to the C & D Committee for consideration. In the absence of a standard template for these credentials, the proposal should include the following information:

- Program overview and rationale including learning objectives and the protocol for student assessment
- A statement of academic merit from a Faculty office
- Admission requirements, if any
- A statement of financial viability and resource implications
- Credit toward degree studies, if any
- Statement of Administrative Responsibility
- A list of courses that comprise the credential, if applicable

Note: New Certificates of Completion and Certificates of Attendance do not require approval from the Committee or UGC, nor do revisions to existing programs in these categories. However, administrative and academic units must report new, revised, and closed certificate programs to the Committee on an annual basis. This report may be submitted to the Committee at any time during the academic year.

Revisions to Existing Programs

It is not necessary to include the entire program requirements in the submission and only the section(s) being revised are required, with alterations indicated using the highlight and strikeout method. Program revisions often include:

- Additions, removals, or substitutions of required or elective courses
- Adjustments of required course units for a particular level of a program
- Additions, removals or modifications of program notes
Where changes are substantive, academic units should include a brief rationale for each change (or group of changes).

Program Closures
- Proposals seeking the phasing out or termination of a diploma or certificate program should briefly outline:
  - Rationale for the closure
  - Number of in-course students affected by the closure
  - Anticipated strategy to manage in-course students (if applicable)
  - Expected timeline for the ceasing of admission, wind-down, and ultimate termination of the program
FACULTY OF HUMANITIES

UNDERGRADUATE CURRICULUM REPORT

TO UNDERGRADUATE COUNCIL

FOR THE 2019-20 CALENDAR

NOVEMBER 2018
REPORT TO SENATE  
FACULTY OF HUMANITIES  
SUMMARY OF MAJOR CURRICULUM CHANGES FOR 2019-20  

NEW PROGRAMS  
- Addition of new Concurrent Certificate in Professional French (as submitted to UGC Certificates & Diplomas Committee)  

MAJOR REVISIONS  
None  

DELETION OF A PROGRAM  
None  

For a complete review of all changes, please refer to the November 2018 Faculty of Humanities Report to Undergraduate Council for changes to the 2019-2020 Undergraduate Calendar, found at http://www.humanities.mcmaster.ca/about/faculty-meetings/
REPORT TO UNDERGRADUATE COUNCIL

FACULTY OF HUMANITIES

SUMMARY OF CURRICULUM CHANGES FOR 2019-20

This report highlights substantive changes being proposed. For a complete review of all changes, please refer to the November 2018 Faculty of Humanities Report to Undergraduate Council for changes to the 2019-2020 Undergraduate Calendar, found at http://www.humanities.mcmaster.ca/about/faculty-meetings/

1. FACULTY OF HUMANITIES (DEAN’S OFFICE)
   - Updating of program language pertaining to degree programs, second language proficiency, deferred term work, Letter of Permission, and Immersion/Student Abroad options
   - Addition of 2 new courses (HUMAN 3D12, 4LW3)

2. SCHOOL OF THE ARTS
   - Studio Art:
     - Addition of course to optional list
     - Minor revision to 5 existing course descriptions (ART 2DG3, 2IS3, 2PG3, 2PM3, 2SC3)
   - Art History:
     - Updating of 2 course descriptions (ARTHIST 2A03, 3XX3)
   - Music:
     - Addition to course list in each program (Combined Honours B.A., B.A., B.Mus., B. Mus. (Music Cognition))
     - Updating of program and admission notes for Music Cognition program
     - Minor revisions to Music Cognition requirements
     - Minor revision to 8 existing course descriptions (MUSIC 2B03, 2CA3, 2DA3, 2MC3, 2MH3, 3J03, 4Z03, MUSICCOG 4MP3)
   - Theatre & Film Studies:
     - Updating of all program course lists to reflect current offerings
     - Minor revision to 2 existing courses (THTRFLM 3L03, 4A06)
     - Deletion of 1 course (THTRFLM 3M03)
     - Minor updates to departmental notes

3. CLASSICS
   - Addition of 1 new course (CLASSICS 3ER3)
   - Minor revision to 1 existing course (CLASSICS 2E03)
   - Deletion of 1 course (CLASSICS 3Z03)
   - Revision to departmental notes’ course elective listings

4. COMMUNICATION STUDIES AND MULTIMEDIA
   - Communication Studies:
     - Updating of program course lists
     - Addition of 1 new course (CMST 3203)
     - Deletion of 1 course (CMST 3C03)
   - Multimedia:
     - Updating of program course lists
     - Revision to 1 existing course (MMMEDIA 2G03)

5. DEPARTMENT OF ENGLISH AND CULTURAL STUDIES
   - Updating of all program course lists to reflect current offerings
   - Addition of program notes to all programs, and as reflected in minor program changes
   - Addition of 14 new courses (ENGLISH 1F03, 1G03, 1H03, 2KA3, 3NN3, 3TT3, 3UU3, 4DL3, 4QA3, 4RL3, 4ST3, 4Y03, 4YF3)
   - Revision to 4 existing courses (ENGLISH 1CS3, 3GF3, 3GG3, 4Y06)
   - Deletion of 8 existing COURSES (ENGLISH 1A03, 1AA3, 1C06, 3C06, 3RL6, 4AA3, 4CL3, 4FF3)

6. DEPARTMENT OF FRENCH
   - Minor revision to all program and minor requirements
   - Addition of notes and course addition to Combined Math program option
   - Addition of 1 new course (FRENCH 3I3)
   - Revision to 4 existing courses (FRENCH 2JJ3, 3CO3, 4A03, 4P06)
Deletion of 1 course (FRENCH 2H03)
- Minor revision to departmental notes’ course area listings
- Proposal for new Concurrent Certificate in Professional French (as submitted to Certificates & Diplomas Committee)

7. DEPARTMENT OF HISTORY
- Revision to all program notes and requirements
- Addition of 3 new courses (HISTORY 2GR3, 4MM3, 4NN3)
- Minor revision to 30 existing courses (HISTORY 2KK3, 3N03, 3XX3, 4G03, 4QQ3, 4AW3, 4CE3, 4CM3, 4CZ3, 4E03, 4FF3, 4H03, 4HH3, 4HP3, 4I03, 4JJ3, 4K03, 4KK3, 4L03, 4LJ3, 4LP3, 4P03, 4PP3, 4QR3, 4RP3, 4RP6 A/B, 4S03, 4SC3, 4SS3, 4YYS A/B)
- Deletion of 4 courses (HISTORY 3G03, 4A06, 4CR3, 4W03)
- Updating of departmental notes

8. DEPARTMENT OF LINGUISTICS AND LANGUAGES
- Updating of program notes and course lists of all Cognitive Science and Linguistics programs
- Addition of 4 new courses (GERMAN 2P03, LINGUIST 3SL3, RUSSIAN 2G03, 2H03)
- Revision to 8 existing courses (CHINESE 1Z06 A/B, LINGUIST 1A03, 1AA3, 2D03, 2DD3, 2S03, 2SL3, 3F03)
- Deletion of 3 courses (JAPANESE 3Z03, 3ZZ3, 4II3)
- Updating of departmental notes

9. PEACE STUDIES
- Updating of program and minor course list options
- Addition of 7 new courses (PEACEST 2LS3, 3GG3, 3Q03, 3XX3, 4GG3, 4MA3, 4MB3)
- Deletion of 5 courses (PEACEST 3HH3, 3Z03, 4E03, 4K03, 4M06 A/B)

10. DEPARTMENT OF PHILOSOPHY
- Updating of JPPL program course lists
- Addition of notes and course addition to Combined Math program option
- Addition of 2 new courses (PHILOS 4YE3 A/B, 4YY3)
- Revision to 16 existing courses (PHILOS 2CT3, 3YY3, 3C03, 3CC3, 3Q03, 4D03, 4F03, 4V03, 4A03, 4C03, 4I03, 4K03, 4Q03, 4S03, 4XP3 A/B, 4XX3)
- Deletion of 1 course (PHILOS 4B03)

11. WOMEN’S STUDIES
- No applicable changes
FACULTY OF HUMANITIES
REPORT TO UNDERGRADUATE COUNCIL (CURRICULUM & ADMISSIONS)
CURRICULUM REVISIONS FOR 2019-20
FACULTY OF HUMANITIES (DEAN’S OFFICE)

1.0 NEW PROGRAMS: n/a

2.0 REVISIONS TO EXISTING PROGRAMS:

2.1 Concurrent Certificate in Leadership & Cross-Cultural Literacy (as submitted to Certificates and Diplomas Committee)

3.0 NEW COURSES:

3.1 HUMAN 3D12 - Full-Time Discovery Channel Internship
12 unit(s)
This course integrates academic knowledge with an internship experience involving the research, writing and production of content for Discovery Channel Canada. Students will also gain valuable experience in production coordinating and management. Students accepted to this placement will document their learning experiences through a portfolio. The employer establishes the number of positions available.
This course is evaluated on a Pass/Fail basis.
Normally 35 hours per week.
Prerequisite(s): Registration in Level 3 or above of any Honours Humanities program; and permission of the Associate Dean or delegate.
Enrolment and credit in this course is contingent upon the student’s successfully having secured a position with the employer, and on satisfactory employer evaluation(s).
Rationale: The Discovery Channel offers several unpaid internships, and these applications will now be opened to McMaster’s Humanities students, and notably to those within Communication Studies and Multimedia programs. Should a student be selected for this internship they will have the option of completing as a for-credit offering. This course was previously offered on Dean’s Letter.

3.2 HUMAN 4LW3 – Wilson Leadership Scholar Capstone A/B
3 unit(s)
This course may be taken by Wilson Leadership Scholar Award winners. Working under the supervision of the Wilson Leadership Scholar Award Director and Associate Director, students will combine leadership theory and practice through the creation and completion of applied community outreach projects.
This course is graded on a Pass/Fail basis.
Two to four hours; two terms
Prerequisite(s): Open to Wilson Leadership Scholar Award winners; permission of the Wilson Leadership Scholarship Award Associate Director is required.
Rationale: This course was previously offered on Dean’s Letter. Wilson Leadership Scholar winners have the option of completing a community project under the supervision of the Director and Associate Director and as an academic capstone. This course can be taken in place of HUMAN 4LC3 for those students completing the concurrent certificate in Leadership and Cross-Cultural Literacy.

4.0 REVISIONS TO EXISTING COURSES: n/a

5.0 COURSE DELETIONS: n/a

6.0 REVISIONS TO FACULTY REGULATIONS:

Types of Degree Programs

Rationale for all program description changes: Clarification of individual degree requirements, as based on both unit requirements and full-time projected time to completion.

Single Honours Program
This involves three years of study, beyond Level I, concentrated in the work of a single discipline (e.g. History.) After three years of Music study beyond Music I, students receive a B.Mus. (Honours) degree.
Honours Bachelor of Arts programs consist of a total of 120 units of work typically completed over four years of full-time study. Honours programs provide a concentration in the work of a single discipline (e.g. History). The Honours Bachelor of Music (B. Mus. Honours) consists of 123 units total, with three years of full-time Music study beyond Music 1. The Honours Bachelor of Fine Arts (B.F.A. Honours) is completed in 120 total units, or three years of full-time Art study beyond Studio Art I.

Combined Honours Program
Appendix 2: Sample Curriculum Revision Document

This involves three years of study, beyond Level I, concentrated in the work of two disciplines (e.g. English and Peace Studies). A student can combine study in any two Humanities disciplines, or one Humanities discipline and a subject from another Faculty where appropriate (e.g. History and Political Science.)

Subject to possible timetable restrictions, and provided that the student meets the requirements for entry into each of the relevant Honours programs, a student may combine work in any two disciplines within the Humanities for completion of a Combined Honours Bachelor of Arts degree (e.g. English and Peace Studies). These combinations are available within the Faculty, in combination with programs in the Faculty of Social Sciences (e.g. History and Political Science), and with select offerings in the Arts and Science Program, or select combinations with Math or Biology. Students will complete 120 units, including approximately 36 units of work beyond Level I in each component of the program (normally 12 units per level in each subject). The Honours B.A. in Justice, Political Philosophy and Law is not available in combination with another subject.

B.A. Program

This involves two years of study, beyond Level I, concentrated in the work of a single discipline.

Bachelor of Arts programs consist of a total of 90 units, typically completed over three years of full-time study, and concentrated in the work of a single discipline.

The content and the requirements of Single Honours, Combined Honours and other B.A. programs are found after the Academic Regulations below.

There are a number of Humanities courses without prerequisites which may be taken as electives. Individual course descriptions are listed by department in the Course Listings section of this Calendar.

Not only are students from other Faculties able to take individual courses which have no prerequisites, but they are also able to transfer into any of the degree programs offered by the Faculty of Humanities. For the majority of programs in the Faculty, admission may be gained after the successful completion of any Level I program at the university, providing this includes the necessary program requisites as outlined in the admission statement for each Humanities program as described under Programs for the B.A., B.A. (Honours) and B.Mus. (Honours) Degrees.

Second Language Proficiency

Students embarking on Humanities programs should be aware that most graduate schools require, for admission, proficiency in at least one, and frequently two, languages other than English. In this Faculty, proficiency in at least one language other than English is regarded as an essential tool for students interested in Linguistics. Generally, proficiency in more than one language is a hallmark of most highly-qualified Humanities’ graduates seeking the widest range of post-graduation academic and employment opportunities.

For students wishing to acquire a reading knowledge of French, a summer course, FRENCH 4R06 is offered in May-June in alternate years. This course is intended to prepare current and incoming graduate students for the French proficiency test administered by some departments. Certain graduate programs recognize a passing mark in this course as fulfillment of the second language requirement. For students wishing to acquire a reading knowledge of German, GERMAN 4RC6 is offered in May-June in alternate years.

Rationale: Deletion of older and/or redundant information regarding language offerings.

Deferred Examinations and Deferred Term Work

Students who have been granted deferred examination or term-work privilege may be required by their Faculty/Program office to reduce their course load during the term in which the deferred examinations are being written. The decision on a reduced load will be made and communicated with the decision on the application for deferred examinations.

Rationale: Inclusion of reference to incomplete term work as a deciding factor in the possibility for reduced course load in the subsequent term.

Summer School

Students who have been granted deferred examination or term-work privileges for courses taken in the preceding Winter session must secure the advance permission of the Assistant Dean of Humanities before enrolling in Spring/Summer courses. A decision will be made based upon the academic record of the student and the amount of work outstanding.

Rationale: This section is redundant now that all information is included in reference to ‘Deferred Examinations and Deferred Term Work’.

Letter of Permission

Students in good academic standing, who wish to attend another university to take courses for credit toward a McMaster degree, must first request a Letter of Permission in the Student Centre in Mosaic. A Letter of Permission is automatically cancelled if a student is placed on academic probation, program probation, or required to withdraw from the University. Students should take note of any conditions on the Letter of Permission that might apply, including the requirement of a grade of at least C- for transfer credit. Courses taken at another university cannot be used to satisfy the University’s minimum residence requirement, will not be included in the calculation of the averages at McMaster, and therefore cannot be used to raise standing. The transcript designation will read TCOM, indicating transfer credit has been granted Complete.
when a C- or better is attained. It is the student’s responsibility to ensure that an official transcript from the host university is sent to the Academic Advising Office to receive credit for work taken. **Rationale:** Updating of language to reflect current practice.

### Summer Immersion Programs in French

- Students must obtain approval from the Academic Advising Office prior to participating in any language immersion program. Failure to obtain prior approval may result in transfer credit not being accepted.
- The government-sponsored Explore summer language program offers university students the opportunity to take French courses at a large number of accredited institutions. Students wishing to attend another university in order to participate in a language immersion program must: (a) petition the Academic Advising Office, (b) submit detailed course descriptions for assessment, and (c) obtain a Letter of Permission.
- Students enrolled in a program in French may take a maximum of six units of credit in this manner as elective work only. Students not enrolled in a program in French may take up to 12 units of credit. **Rationale:** Highlighting of significance that prior approval must be obtained for acceptance of appropriate transfer credit.

### Humanities Study Abroad

#### Humanities Study Abroad During Level III of Honours Programs

- There are two ways to undertake international studies during Level III of an Honours program: (i) a Formal Exchange Program or (ii) a Third Year Study Elsewhere Program. Independent Study Abroad through a Letter of Permission.

**(I) Formal Exchange Program During Level III of Honours Programs**

- Formal Exchange Programs are those where McMaster University has an agreement with another institution involving a temporary exchange of students. Exchange students enrol at and pay tuition fees and supplementary fees to McMaster. No tuition is paid to the other institution. See the General Academic Regulations section of this Calendar and the sections on Eligibility and Application below.

**Eligibility for Study Abroad the McMaster Exchange Program**

- Students enrolled in any Honours or Combined Honours program in the Faculty of Humanities may apply to replace all or part of the work of their third year with an acceptable program of study taken at a partner university or equivalent institution approved by the Faculty of Humanities.
- To be eligible to take part in this program, students must have completed at least 60 units of work with a Grade Point Average of at least 7.0. Individual programs may have additional requirements. All requirements must be satisfied by the end of the Fall/Winter session (September-April) preceding the commencement of study elsewhere. Students taking part in this program do not have the option of graduating with a three-year B.A. degree on the basis of work completed in this program, but must return to McMaster University to complete their final 30 units of work.
- Students may receive up to 30 units of credit for a full year of study at another institution. The awarding of transfer credit for work completed elsewhere may be confirmed only after the Academic Advising Office has received transcripts and reviewed students’ academic achievements following their return and after they have officially enrolled for Level IV.

**Application for Study Abroad the McMaster Exchange Program**

- Students interested in applying for this program should consult the Academic Advising Office approximately one year before they anticipate studying abroad (i.e. during the Fall term of the year in which they enter Level II.) A plan for the completion of the academic program, approved by the program counsellor(s), must be submitted to the Advising Office by the published deadline (usually in January, although applications for some exchanges may be due as early as December.) Applications are submitted through International Student Services and are normally due in January of Level II.

**(II) Third Year Study Elsewhere Honours Program Independent Study Abroad**

- Qualified Level III students may undertake studies at a university abroad for one or two terms in the Third Year Study Elsewhere Program through a Letter of Permission. This program is not available at universities with which McMaster University has a Formal Exchange Agreement. Students enrol at, but do not pay tuition to McMaster University. Students pay tuition fees to the other institution. See the General Academic Regulations section of this Calendar and the sections on Eligibility and Application below.

**Eligibility for Study Abroad through Letter of Permission**

- Students in good standing in the Faculty of Humanities may apply for a Letter of Permission to take coursework abroad towards their degree. The coursework must be approved in advance by the faculty office. Students must apply directly to, and be accepted by, the other school.
• The awarding of transfer credit for work completed elsewhere may be confirmed only after the Academic Advising Office has received transcripts and reviewed students’ academic achievements following their return.

Application for Study Abroad through a Letter of Permission
• Students should consult with an academic advisor on the coursework to be taken abroad prior to applying. A Letter of Permission must be given by McMaster to be permitted to take coursework elsewhere for transfer credit. Students apply directly to the other school to be accepted, and must be aware of the other school’s dates and deadlines.

Eligibility for Study Abroad the McMaster Exchange Program
• Students enrolled in any Honours or Combined Honours program in the Faculty of Humanities may apply to replace all or part of the work of their third year with an acceptable program of study taken at a partner university or equivalent institution approved by the Faculty of Humanities.

• To be eligible to take part in this program, students must have completed at least 60 units of work with a Grade Point Average of at least 7.0. Individual programs may have additional requirements. All requirements must be satisfied by the end of the Fall/Winter session (September-April) preceding the commencement of study elsewhere. Students taking part in this program do not have the option of graduating with a three-year B.A. degree on the basis of work completed in this program, but must return to McMaster University to complete their final 30 units of work.

• Students may receive up to 30 units of credit for a full year of study at another institution. The awarding of transfer credit for work completed elsewhere may be confirmed only after the Academic Advising Office has received transcripts and reviewed students’ academic achievements following their return and after they have officially enrolled for Level IV.

Application for Study Abroad the McMaster Exchange Program
• Students interested in applying for this program should consult the Academic Advising Office approximately one year before they anticipate studying abroad (i.e. during the Fall term of the year in which they enter Level II.) A plan for the completion of the academic program, approved by the program counsellor(s), must be submitted to the Advising Office by the published deadline (usually in January, although applications for some exchanges may be due as early as December.) Applications are submitted through International Student Services and are normally due in January of Level II.

Rationale: Updating of all language pertaining to study abroad options, based on current practice and processes.

7.0 COURSES IDENTIFIED AS ‘AT-RISK’: n/a
8.0 REVISIONS TO LIST OF FACULTY CONTACTS:

DEAN OF HUMANITIES
K. Cruikshank/B.A., M.A., Ph.D.

ASSOCIATE DEAN OF HUMANITIES (Acting)
A. Moro/B.A., M.A., Ph.D.


Humanities Academic Advising Office
Chester New Hall, Room 107, ext. 27532

ASSISTANT DEAN (STUDIES)
J. Osterman/B.A., B.Admin., M.Ed.

ACADEMIC ADVISORS
C. Chauvin/B.A., B.Ed.
J. Gloazzo, B.A., M.A.
J. Richardson/B.A.
E. Williams/B.A., B.Ed., M.Ed.

SCHOOL OF THE ARTS

(i) STUDIO ART:

April 2020
1.0 NEW PROGRAMS:  n/a

2.0 REVISIONS TO EXISTING PROGRAMS:

2.1 Honours Studio Art (B.F.A.)

Requirements
120 units total (Levels I to IV), of which 48 units may be Level I
30 units
• Studio Art 1
15 units
• ART 2DG3 - Contemporary Approaches to Drawing
• ART 2IS3 - Independent Studio Methods
• ART 2PG3 - Contemporary Approaches to Painting
• ART 2PM3 - Contemporary Approaches to Print Media
• ART 2SC3 - Contemporary Approaches to Sculpture
3 units
from
• ART 2DP3 - Digital Practices
• ART 2ER3 - Environmentally Responsible Art
• ART 2Z03
• HTHSCI 3EE3 - Biomedical Graphics
• MMEDIA 2G03 - Introduction to Digital Audio
• MMEDIA 3C03 – Interactive and Spatial Audio

Rationale: Inclusion of additional course option, as seats will now be available to Art students.

3.0 NEW COURSES:  n/a

4.0 REVISIONS TO EXISTING COURSES:

4.1 ART 2DG3, 2IS3, 2PG3, 2PM3, 2SC3

Prerequisite(s): WHMIS 1A00 and Registration in Level II Honours Studio Art program

Rationale: As WHMIS 1A00 is a requirement of Studio Art I, this prerequisite is redundant.

5.0 COURSE DELETIONS:  n/a

6.0 REVISIONS TO DEPARTMENTAL NOTES:  n/a

7.0 COURSES IDENTIFIED AS ‘AT-RISK’:  n/a

8.0 REVISIONS TO LIST OF FACULTY MEMBERS:
http://sota.humanities.mcmaster.ca/
Faculty as of January 15, 2018

DIRECTOR
Virginia Aksan (Acting)

PROFESSORS
William Renwick/(Music) B.Mus. (British Columbia), Ph.D. (CUNY), A.A.G.O., F.R.C.C.O.

ASSOCIATE PROFESSORS
Peter Cockett/(Theatre & Film Studies) B.A. (London), M.A., Ph.D. (Toronto)
John Ford/(Studio Art) B.Sc (Southeast Missouri State), M.F.A. (Southern Illinois)
Catherine Graham/(Theatre & Film Studies) B.A., M.A., Ph.D. (McGill)
Janice Hladki/(Theatre & Film Studies) B.A. (York), M.A., Ph.D. (Toronto)
Michael Schutz/(Music) B.Mus., B.Sc. (Pennsylvania), M.Mus. (Northwestern), Ph.D. (Virginia)
Joseph Sokalski/(Theatre & Film Studies) B.E. (Alberta), M.A., Ph.D. (Toronto)
Angela Sheng/(Art History) B.A., M.A., Ph.D. (Toronto), Licence (Paris), Ph.D. (Pennsylvania)
Matthew Woolhouse/(Music) GGSM (London, UK), M.Phil., Ph.D. (Cantab)

ASSISTANT PROFESSORS
Peter Cockett/(Theatre & Film Studies) B.A. (London), M.A., Ph.D. (Toronto)
David Berry/(Music) A.R.C.T., B.Mus. Perf., M.Mus. (Toronto), Ph.D. (McMaster)
Logan MacDonald/(Studio Art) B.F.A. (Concordia), M.F.A (Toronto)
Appendix 2: Sample Curriculum Revision Document

Andrew Mitchell/(Music) B.Mus. (Saskatchewan), M.A., Ph.D. (Western)
Sally McKay/(Studio Art/Art History) B.F.A (Western), M.A. (Nova Scotia College of Art and Design), Ph.D. (York)
Joseph Resendes/(Music) B.F.A., M.A. (Toronto)
Tracy Wong/(Music) B.Mus (Australia), M.A., Ph.D. (Toronto)

ADJUNCT ASSISTANT PROFESSORS
Tobi Bruce/(Art Gallery of Hamilton) B.A. (Kingston), M.A. (Ottawa)
Melissa Bennett/(Art Gallery of Hamilton) B.F.A (Nova Scotio), M.A. (Toronto)

ASSOCIATE MEMBERS
Alison McQueen/(History) B.A. (McGill), M.A., Ph.D. (Pittsburgh)
David Ogborn/(Communication Studies and Multimedia) B.A., B.Sc. (Mary), B.Mus. (Manitoba), M.Mus. (Toronto), Mus.Doc. (Toronto)

PROFESSORS EMERITI
William Renwick/(Music) B.Mus. (British Columbia), Ph.D. (CUNY), A.A.G.O., F.R.C.C.O.

(ii) ART HISTORY:

1.0 NEW PROGRAMS: n/a
2.0 REVISIONS TO EXISTING PROGRAMS: n/a
3.0 NEW COURSES: n/a
4.0 REVISIONS TO EXISTING COURSES:

4.1 ARTHIST 2A03 - Visual Literacy
3 unit(s)
A course of lectures and discussions that explores the concept of visual literacy and examines the ways in which fine and popular arts structure our understanding through images.
One lecture (two hours), one tutorial/discussion; Three lectures; one term
Prerequisite(s): Registration in Level II or above
Antirequisite(s): CMST 2I03
Offered on a rotational basis.
Rationale: Change to reflect addition of third hour lecture.

4.2 ARTHIST 3XX3 - Cinema History from WWII
3 unit(s)
An exploration of narrative film from 1941 to the present day, incorporating a study of a variety of narrative cinema styles. Theoretical issues will include questions of cinema's relationships to other art forms, narrative, genre and authorship.
Two lectures, plus one weekly film screening; one term
Prerequisite(s): One of ARTHIST 2FL3, ARTHIST 3FL3, THTRFLM 2FF3 or THTRFLM 3FF3
Antirequisite(s): CMST 3XX3
Cross-list(s): THTRFLM 3L03
This course is administered by Theatre & Film
Rationale: The prerequisite cross-listed course has previously been offered at both levels II and III. This change will reflect that students who may have taken it at either level II or III, and under either discipline, have met the prereq.

5.0 COURSE DELETIONS: n/a
6.0 REVISIONS TO DEPARTMENTAL NOTES: n/a
7.0 COURSES IDENTIFIED AS ‘AT-RISK’:
• ARTHIST 2DF3 – History is course lead on this cross-list, and intends to offer in 2019-20
• ARTHIST 4U03 – Classics is course lead on this cross-list, and intends to offer in 2019-20
8.0 REVISIONS TO LIST OF FACULTY MEMBERS: (as noted above)

(iii) MUSIC:

1.0 NEW PROGRAMS: n/a
2.0 REVISIONS TO EXISTING PROGRAMS:

2.1 Combined Honours in Music and Another Subject (B.A.) and Music (B.A.)
Course List 1
All Level III and IV Music courses, including except:

HEALTHSCI 3MU3 - Music, Health, & the Community
The following exceptions may not be used toward this course list:
• MUSIC 3GA3 A/B - Ensemble Performance: Accompanying
• MUSIC 3GB3 A/B - Ensemble Performance: McMaster Concert Band

April 2020
Appendix 2: Sample Curriculum Revision Document

• MUSIC 3GC3 A/B - Ensemble Performance: McMaster University Choir
• MUSIC 3GF3 A/B - Ensemble Performance: McMaster University Flute Ensemble
• MUSIC 3GI3 A/B - Ensemble Performance: McMaster Jazz Band
• MUSIC 3GP3 A/B - Ensemble Performance: McMaster Percussion Ensemble
• MUSIC 3GR3 A/B - Ensemble Performance: McMaster Chamber Orchestra
• MUSIC 3GW3 A/B - Ensemble Performance: McMaster Women's Choir
• MUSIC 3Z03
• MUSIC 4GA3 A/B - Ensemble Performance: Accompanying
• MUSIC 4GB3 A/B - Ensemble Performance: McMaster Concert Band
• MUSIC 4GC3 A/B - Ensemble Performance: McMaster University Choir
• MUSIC 4GF3 A/B - Ensemble Performance: McMaster University Flute Ensemble
• MUSIC 4GI3 A/B - Ensemble Performance: McMaster Jazz Band
• MUSIC 4GP3 A/B - Ensemble Performance: McMaster Percussion Ensemble
• MUSIC 4GR3 A/B - Ensemble Performance: McMaster Chamber Orchestra
• MUSIC 4GW3 A/B - Ensemble Performance: McMaster Women's Choir
• MMEDIA 3C03 - Interactive and Spatial Audio

Rationale: Course list addition to include HTHSCI 3MU3, which will have reserved seats for Music program students.

2.2 Honours Music (B.Mus.)

Course List 1

• HEALTHSCI 3MU3- Music, Health, & the Community
• MUSIC 2CG3 - Classical Guitar Methods
• MUSIC 2MC3 - Psychology of Music
• MUSIC 3AA3 - Elementary Music Education
• MUSIC 3CG3
• MUSIC 3J03 A/B - Orchestration and Arranging
• MUSIC 3K03 - Brass Methods
• MUSIC 3L03 - Woodwind Methods
• MUSIC 3M03 A/B - String Methods
• MUSIC 3N03 - Vocal Methods
• MUSIC 3P03 - Percussion Methods
• MUSIC 3Q03 - Conducting
• MUSIC 3R03 - Music Education
• MUSIC 3S03 - Foundations of Music Education
• MUSIC 4K03 - Brass Methods
• MUSIC 4L03 - Woodwind Methods
• MUSIC 4M03 A/B - String Methods
• MUSIC 4N03 - Choral Methods
• MUSIC 4OC3 - Advanced Conducting: Choral
• MUSIC 4O13 - Advanced Conducting: Instrumental
• MUSIC 4P03
• MUSIC 4Q03 - Current Issues in Music Education

Rationale: Course list addition to include HTHSCI 3MU3, which will have reserved seats for Music program students.

2.3 Honours Music (B.Mus.) (Music Cognition)

Admission

Enrolment in this program is limited. Admission requires, as a minimum, completion of Music I, a Grade Point Average of at least 5.0, and an average of at least 5.0 in PSYCH 1X03 (or 1F03) and PSYCH 1XX3 (or 1FF3).

Program Notes

1. Students interested in this program must have completed Grade 12 Biology U, or enroll in BIOLOGY 1P03 in the first term of Level I, concurrently with PSYCH 1X03.
2. More advanced training in statistics is recommended for students in this program (especially if students plan to conduct independent research in the future), but is not required. Students wanting more advanced statistics training should take PNB 2XE3 and PNB 3XE3. For permission to take these courses, please see the Academic Advisor in the Department of Psychology, Neuroscience & Behaviour.
3. The courses appearing in Course List 1 are specifically intended to prepare students to attend a Faculty of Education and for a career in school and music teaching. Students interested in Music Education are
advised to consult the Music Counsellor during Level I for advice on fulfilling the entrance requirements of Faculties of Education.

4. Students who intend to pursue graduate studies in music history or theory or who wish to use the music degree as preparation for post-graduate studies in other professions should select a significant number of the courses in Course List 2.

5. Students in the Honours B.Mus. (Music Cognition) program can only use a total of 12 units from Course List 5 as credit toward their degrees.

6. Although it is listed as an option, students are encouraged to complete MUSICCOG 4D06 A/B - Thesis in Music Cognition.

7. Psych 2E03 is recommended as preparation for MUSICCOG 4MP3.

Course List 1

- HEALTHSCI 3MU3 - Music, Health, & the Community
- MUSIC 2CG3 - Classical Guitar Methods
- MUSIC 3AA3 - Elementary Music Education
- MUSIC 3CG3
- MUSIC 3J03 A/B - Orchestration and Arranging
- MUSIC 3K03 - Brass Methods
- MUSIC 3L03 - Woodwind Methods
- MUSIC 3M03 A/B - String Methods
- MUSIC 3N03 - Vocal Methods
- MUSIC 3O03 - Conducting
- MUSIC 3P03 - Percussion Methods
- MUSIC 3V03 - Foundations of Music Education
- MUSIC 4K03 - Brass Methods
- MUSIC 4L03 - Woodwind Methods
- MUSIC 4M03 A/B - String Methods
- MUSIC 4N03 - Choral Methods
- MUSIC 4OC3 - Advanced Conducting: Choral
- MUSIC 4OI3 - Advanced Conducting: Instrumental
- MUSIC 4P03
- MUSIC 4Q03
- MUSIC 4V03 - Current Issues in Music Education

Requirements

123 units total (Levels I to IV), of which 51 units may be Level I

33 units

- Music 1

21 units

- MUSIC 2B03 - History of Western Music (1890-present)
- MUSIC 2CA3 - Theory and Analysis III
- MUSIC 2CB3 - Theory and Analysis IV
- MUSIC 2DA3 - Practical Musicianship III
- MUSIC 2E06 A/B - Solo Performance
- MUSIC 2MH3 - Music History II: Music in Western Culture to 1900

9 units

from

- MUSICCOG 2MP3 - Introduction to Music Cognition (or MUSICCOG 2A03 or 2MA3)
- MUSICCOG 3MP3
- MUSICCOG 3SP3 - The Science of Performance
- MUSICCOG 4MP3 - Neuroscience of Music (or one of MUSICCOG 3A03, 3MA3, or 4LA3)

3 units

- SOCSCL 2J03 - Introduction to Statistics

3 units

- PSYCH 2E03 - Sensory Processes
- PNB 2XA3 - Human Perception & Cognition

6 units
Appendix 2: Sample Curriculum Revision Document

- MUSIC 3E06 A/B - Solo Performance
  18 units
  from
  - Course List 1
  - Course List 2
  - Course List 3
  - Course List 4
- 3 units
  from
  - Course List 5
- 3 units
  from
  - PSYCH 2AA3 - Child Development
  - PSYCH 2E03 - Sensory Processes
  - PSYCH 2H03 - Human Learning and Cognition
  - PSYCH 2NF3 - Basic & Clinical Neuroscience
- 6 units
  - MUSICCOG 4D06 A/B - Thesis in Music Cognition or
  - 6 units from Course List 6
- 18 units
  - Electives, including no more than 6 units from Course List 5

**Rationale:** Proposed changes to the Honours Music (B.Mus.) (Music Cognition) program accommodate changes made to MUSICCOG 3SP3, for which Psychology is lead, and the addition of the new online 1FF3 (taken in lieu of 1XX3) being put forward by Psychology. Course list addition to include HTHSCI 3MU3, which will have reserved seats for Music program students.

2.4 Diploma in Music Performance (as submitted to Certificates and Diplomas Committee)

3.0 NEW COURSES: n/a

4.0 REVISIONS TO EXISTING COURSES:

4.1 MUSIC 2B03 – Music History: Music in Western Culture from c. 1750 to the Present History of Western Music (1890-present)
  3 unit(s)
  A survey of Western music from the late 19th century c. 1750 to the present. Includes consideration of performance practices, influences of the other arts and socio-political developments. In addition, musicological research and writing skills will be cultivated.
  Three lectures; one term
  **Prerequisite(s):** Registration in Level II of a Music program
  **Rationale:** Minimal change to title and description, to address how course is offered.

4.2 MUSIC 2CA3 - Theory and Analysis III, MUSIC 2CB3 - Theory and Analysis IV
  First offered in 2018-2019.

4.3 MUSIC 2DA3 - Practical Musicianship III
  3 unit(s)
  Continuation of MUSIC 1DB3.
  Sight-singing, dictation, and keyboard harmony.
  One lecture, two labs, one tutorial; one term
  **Prerequisite(s):** MUSIC 1DB3 and Registration in a Music program or permission of the instructor if space permits
  **Antirequisite(s):** MUSIC 2D03
  First offered in 2018-2019.
  **Rationale:** This course is a continuation of MUSIC 1DB3.

4.4 MUSIC 2MC3 - Psychology of Music
  3 unit(s)
  Overview of the psychological roots of the musical experience. Sample topics to include the perception of pitch, timbre, meter, and tonality as well as the communication of emotion. There will be a particular emphasis on the practical
implications of basic principles of perception and cognition, with a focus on improving the quality and efficiency of music performance, learning, and education.

Three lectures, one term

**Prerequisite(s):** Registration in Level II of an Honours, Combined Honours or B.A. Music program

**Antirequisite(s):** MUSICCOG 2MA3, 2MP3, PSYCH 2MA3, 2MP3

**Rationale:** This course is intended for non-Music Cognition students (who will take the specialized, core MUSICCOG 2MA3 anti-requisite).

### 4.5 MUSIC 2MH3 - Music History II: Music in Western Culture to 1900 from Antiquity to c. 1750

3 unit(s)

An examination, through selected examples, of Western musical practice and its contexts, from Antiquity to the beginning of the twentieth century, approximately 1750. A significant portion of the course will be devoted to the cultivation of writing and research skills.

Three lectures; one term

**Prerequisite(s):** Registration in Level II of a Music program

**Antirequisite(s):** MUSIC 2BB3

**Rationale:** Minimal change to title and description, to address how course is offered.

### 4.6 MUSIC 3J03 A/B - Orchestration and Arranging

3 unit(s)

A study of the orchestral/band instruments; scoring of music for various ensembles.

**Two lectures; two terms** Three lectures; one term

**Prerequisite(s):** MUSIC 2CB3 or 2CC3 A/B and 2H03, and registration in a Music program

Offered in alternate years.

**Rationale:** Change to single term will allow for greater student flexibility in required contact hours.

### 4.7 MUSIC 4Z03 - Composition

3 unit(s)

The composition of various instrumental or vocal works.

Times to be arranged between the student and instructor; one term

**Prerequisite(s):** Registration in Level III or IV of an Honours Music program and a grade of at least B+ in MUSIC 2CC3 A/B or MUSIC 2CB3; or permission of the instructor.

**Rationale:** Addition of new core course to prerequisite, which students will now be completing in lieu of 2CC3.

### 4.8 MUSICCOG 4MP3 - Neuroscience of Music

3 unit(s)

This seminar explores theories on how and why music evolved, and how the perception, development, performance and emotional experience of music are mediated by the brain. Primary source materials are discussed in class and experimental designs developed to address critical questions.

Lecture/seminar (three hours); one term

**Prerequisite(s):** MUSICCOG 2MP3 (or 2MA3) or PSYCH 2MP3 (or 2MA3) or 3H03; and registration in a Music Cognition program (B.A., B.Arts.Sc., B.Mus., B.Sc.), or PNB 2XA3 or PSYCH 2E03 and registration in an Honours program, or ISCI 2A18 A/B; or permission of the instructor. PSYCH 2E03 is recommended.

**Cross-list(s):** PSYCH 4MP3

This course is administered by the Department of Psychology, Neuroscience & Behaviour.

**Rationale:** Change to reflect course lead’s description.

### 5.0 COURSE DELETIONS:

n/a

### 6.0 REVISIONS TO DEPARTMENTAL NOTES:

n/a

### 7.0 COURSES IDENTIFIED AS ‘AT-RISK’:

n/a

### 8.0 REVISIONS TO LIST OF FACULTY MEMBERS:

(as noted above)

(iv) THEATRE AND FILM STUDIES:

1.0 NEW PROGRAMS:

n/a

2.0 REVISIONS TO EXISTING PROGRAMS:

2.1 Combined Honours in Theatre & Film Studies and Another Subject (B.A.),Honours Theatre & Film Studies (B.A.), Theatre & Film Studies (B.A.)

Course List 1

- THTRFLM 3AA3 - Modernist Drama and Theatre in Europe
- THTRFLM 3DD3 - Contemporary Canadian Drama and Theatre
- THTRFLM 3FF3 - Early Cinema History
- THTRFLM 3L03 - Cinema History from WWII
Appendix 2: Sample Curriculum Revision Document

• THTRFLM 3M03 - Analyzing Entertainment Culture
• THTRFLM 3P03 - Women and Visual Culture
• THTRFLM 3U03 - Pleasure and Critique in Dramatic Performance

Course List 2
• THTRFLM 3N03 - Artists' Alternative Film and Video
• THTRFLM 3OP6 A/B - Organizing the Performance Space
• THTRFLM 3PC3 - Performance and Community Engagement
• THTRFLM 3PR3 - Text-based Devising: Research and Development
• THTRFLM 3PS3 - Devising New Plays: Research and Development
• THTRFLM 3S03
• THTRFLM 3S06 - Major Production Workshop
• THTRFLM 3SD3 - Scripting the Devised Performance
• THTRFLM 3V53 - Visual Storytelling
• THTRFLM 3WW3 - Acting and the Voice: Devising from Classical Texts
• THTRFLM 3XX3 - Acting and the Body: Devising Physical Theatre

Course List 3
• ARTHIST 2A03 - Visual Literacy
• ARTHIST 2R03 - The History of Fashion and Identity
• ARTHIST 2T03 - Art, Theatre and Music in the Enlightenment
• ARTHIST 3Q03 - Colours of the World
• CLASSICS 2E03 - The Ancient World in Film
• CLASSICS 2YY3 - Greek Tragedy
• CMST 2G03 - Performance and Performativity
• ENGLISH 2CR3 - Shakespeare: Comedies, Problem Plays, and Romances
• ENGLISH 2HT3 - Shakespeare: Histories and Tragedies
• ENGLISH 3CC3 - Reading Film
• GERMAN 2N03 - The Holocaust in Film and Fiction (Taught in English)
• GERMAN 2P03 - Modern Germany through Film: Symphonies of Magic and Horror (Taught in English)
• GERMAN 2S03
• INDIGST 3EE3 - Indigenous Representations in Film
• INDIGST 3G03 - Indigenous Creative Arts and Drama: Selected Topics
• ITALIAN 3X03 - Italy Today Through Film (Taught in English)
• MMEDIA 2G03 - Introduction to Digital Audio
• MMEDIA 3C03 – Interactive and Spatial Audio
• MUSIC 2F03 - Music for Film and Television
• MUSIC 2TT3 - Broadway and the Popular Song
• RUSSIAN 2G03 – Masterpieces of Russian Literature in Film and TV Series (Taught in English)
• RUSSIAN 2H03 – Soviet Propaganda in Films and Other Mass Media (Taught in English)
• THTRFLM 2Z03

Rationale: Updating of all program course lists to reflect all relevant, current interdisciplinary offerings.

3.0 NEW COURSES: n/a

4.0 REVISIONS TO EXISTING COURSES:
4.1 THTRFLM 3L03 - Cinema History from WWII
3 unit(s)
An exploration of narrative film from 1941 to the present day, incorporating a study of a variety of narrative cinema styles. Theoretical issues will include questions of cinema’s relationship to other art forms, narrative, genre and authorship.
Two lectures, plus one weekly film screening; one term
Prerequisite(s): One of ARTHIST 2FL3, ARTHIST 3FL3, THTRFLM 2FF3 or THTRFLM 3FF3.
Antirequisite(s): CMST 3XX3
Cross-list(s): ARTHIST 3XX3

Rationale: The prerequisite cross-listed course has previously been offered at both levels II and III. This change will reflect that students who may have taken it at either level II or III, and under either discipline, have met the prereq.

4.2 THTRFLM 4A06 A/B - Theatre and Society: A Performance Project
6 unit(s)
Students will work in small groups to create and critique public performances.
Appendix 2: Sample Curriculum Revision Document

Two lectures and practical exercises, plus rehearsals; two terms.
Two lectures, one lab; total of 6 hours.

Prerequisite(s): Registration in Level IV of an Honours program in Theatre & Film Studies and permission of the School of the Arts; Starting in 2010, students proposing an original script must have taken THTRFLM 3SD3.

Admission to THTRFLM 4A06 will be based primarily on academic standing. In addition, students must complete a written application on a form provided by the School of the Arts, which must be submitted in March of the academic year prior to registration. Final selection will be made by Theatre and Film Studies faculty.

Rationale: Change to most accurately reflect class and rehearsal timelines.

5.0 COURSE DELETIONS:

5.1 THTRFLM 3M03 - Analyzing Entertainment Culture

Rationale: This course has not been offered since 2015.

6.0 REVISIONS TO DEPARTMENTAL NOTES:

Department Notes

1. The following are courses open as electives to students registered in Level II or above of any undergraduate program:
   - THTRFLM 2CP3 - Culture and Performance
   - THTRFLM 2FA3 - Film Analysis
   - THTRFLM 3AA3 - Modernist Drama and Theatre in Europe
   - THTRFLM 3DD3 - Contemporary Canadian Drama and Theatre
   - THTRFLM 3FF3 - Early Cinema History
   - THTRFLM 3M03 - Analyzing Entertainment Culture.

Rationale: THTRFLM 3M03 is being deleted so will no longer be offered as an elective option.

7.0 COURSES IDENTIFIED AS ‘AT-RISK’:

- THTRFLM 3M03 is being deleted

8.0 REVISIONS TO LIST OF FACULTY MEMBERS: (as noted above)

DEPARTMENT OF CLASSICS

1.0 NEW PROGRAMS: n/a

2.0 REVISIONS TO EXISTING PROGRAMS: n/a

3.0 NEW COURSES:

3.1 CLASSICS 3ER3 - Epics of Rome

3 unit(s)

This course will examine the great epic poems of Vergil, Ovid and Statius, studying them in the political and cultural context of contemporary Rome and against the background of the tradition of epic poetry.

Three hours; one term

Prerequisite(s): Three units from CLASSICS 1B03, 2D03, 2E03, 2Y03, 2YY3; and registration in Level II or above of any program offered in alternate years.

Enrolment: 60 Reserve capacities: Classics II: 20

Rationale: Our new appointment is a specialist in Latin Literature and taking over the alternating pair of Ovid (3YY3) and Satire (3Z03). Satire will be replaced with Epic.

4.0 REVISIONS TO EXISTING COURSES:

4.1 CLASSICS 2E03 - The Ancient World in Film

3 unit(s)

The emphasis is on myth (Amazons, Hercules) and history (slave revolts, banquets, decadent emperors), studied via Greek and Latin accounts (in translation) and cinematic versions (e.g. Electra, Medea, Mighty Aphrodite, Apocalypse Now, Spartacus, I Claudius).

Three lectures; two lectures, plus one weekly film screening; one term

Prerequisite(s): Registration in Level II or above of any program

Antirequisite(s): CMST 2Y03, THTRFLM 2G03

Offered on rotation.

Rationale: This format will best allow for full film screenings, as a complement to lectures.

5.0 COURSE DELETIONS:

5.1 CLASSICS 3Z03 - Satire

Rationale: The course is being replaced with a course in fitting with the Department’s needs and current areas of specialization.

6.0 REVISIONS TO DEPARTMENTAL NOTES:

April 2020
Department Note
The following courses are available as electives to qualified students in any program:

a. Classical Archaeology and Art History
   - CLASSICS 1A03 - Introduction to Classical Archaeology
   - CLASSICS 2B03 - Greek Art
   - CLASSICS 2C03 - Roman Art
   - CLASSICS 3H03 - Archaic Greek Art
   - CLASSICS 3Q03 - Greek Sanctuaries
   - CLASSICS 3S03 - Pompeii, Herculaneum, and Ostia

b. Ancient History and Society
   - CLASSICS 1M03 - History of Greece and Rome
   - CLASSICS 2K03 - The Society of Greece and Rome
   - CLASSICS 2LA3 - History of Greece to the Peloponnesian War
   - CLASSICS 2LB3 - History of Greece from the Peloponnesian War
   - CLASSICS 2LC3 - History of Rome to the Dictatorship of Caesar
   - CLASSICS 2LD3 - History of Rome from the Dictatorship of Caesar

c. Classical Literature in Translation
   - CLASSICS 1B03 - An Introduction to Ancient Myth and Literature
   - CLASSICS 2D03 - Greek and Roman Mythology
   - CLASSICS 2E03 - The Ancient World in Film
   - CLASSICS 2YY3 - Greek Tragedy
   - CLASSICS 3EE3 - The Ancient World in Film
   - CLASSICS 3ER3: Epics of Rome
   - CLASSICS 3MO3 - Greek Intellectual Revolution
   - CLASSICS 3YY3 - Ovid
   - CLASSICS 3Z03 - Satire

d. Classical Languages
   - GREEK 1Z03 - Beginner's Intensive Ancient Greek I
   - GREEK 1ZZ3 - Beginner's Intensive Ancient Greek II
   - LATIN 1Z03 - Beginner's Intensive Latin I
   - LATIN 1ZZ3 - Beginner's Intensive Latin II

Rationale: Updating elective lists to reflect current course offerings.

7.0 COURSES IDENTIFIED AS 'AT-RISK':
   - CLASSICS 4T03 A/B – this course is to remain in calendar, for use as needed (many students will take as ‘S’ single term option)
   - CLASSICS 4U03 – This course will be offered in 2019-20

8.0 REVISIONS TO LIST OF FACULTY MEMBERS:
Faculty as of January 15, 2018

CHAIR
Sean Corner
Claude Eilers (Acting)

PROFESSORS
Michele G. George/B.A. (Toronto), M.A., Ph.D. (McMaster)

ASSOCIATE PROFESSORS
Martin Beckmann/B.A. (Wilfrid Laurier), M.A. Ph.D. (McMaster)
Claude Eilers/B.A. (Saskatchewan), M.A. (McMaster), D.Phil. (Oxford)
Kathryn Mattison/B.A., Ph.D. (Toronto)
Spencer Pope/B.A. (Middlebury College), Ph.D. (Brown)

ASSISTANT PROFESSOR
Kathryn Mattison/B.A., Ph.D. (Toronto)
Mariapia Pietropaolo/B.A., M.A., Ph.D. (Toronto)

[Sample submission truncated after the Department of Classics]
REPORT TO UNDERGRADUATE COUNCIL
from the
UNDERGRADUATE COUNCIL AWARDS COMMITTEE

FOR APPROVAL

I Terms of Award
On April 2, 2020 the Awards Committee approved, via electronic vote, the following items for recommendation to Undergraduate Council. Details of the proposed recommendations are contained within the circulated report.

i. New Awards
The Liburdi Engineering Entrance Scholarship
The Liburdi Engineering Academic Grant
The Jim & Margaret Gibson Memorial Scholarship
The Liburdi Family Foundation International Exchange Scholarship
The Dr. Jason Lo Materials Science and Engineering Scholarship
The Tony Paver Memorial Scholarship

ii. Changes to Award Terms
The Abe Black Memorial Prize
The Linguistics and Languages Travel Scholarship

iii. New Bursaries
The Shelly Ferguson Bursary
The Jim & Margaret Gibson English & Cultural Studies Bursary
The Jim & Margaret Gibson Memorial Bursary
The Sandra Stephens "Brighter World" Memorial Bursary
The Wentworth Strategy Group Bursary

iv. Changes to Bursary Terms
The Lois Aileen Menzies Brown Bursary

v. Awards Removed from the Undergraduate Council
The McMaster Bursaries
The Don Phillips Bursary
The Abe Black Memorial Prizes

It is now recommended,

that the Undergraduate Council approve six new awards, changes to two awards, five new bursaries, changes to one bursary, and the removal of three awards from the Undergraduate Calendar, as set out in the attached.
FOR INFORMATION

II Award Name Changes
The Awards Committee received, for information, two award name changes.

III Award Value Changes
The Awards Committee received, for information, two award value changes.
PROPOSED NEW AWARDS FOR APPROVAL

Entrance Awards

The Liburdi Engineering Entrance Scholarship
Established in 2019 by Joseph Liburdi.
Requirements: To be awarded to students entering the Faculty of Engineering who demonstrate outstanding academic achievement and community engagement.
Typically Available: 1 x $10,000

In-Course and Renewal Academic Grants

The Liburdi Engineering Academic Grant
Established in 2019 by Joseph Liburdi.
Requirements: To be granted to students enrolled in Level 2 or above in the Faculty of Engineering who attain high averages and demonstrate financial need.
Typically Available: 1 x $40,000 ($10,000 per year)

In-Course and Renewal Awards

The Jim & Margaret Gibson Memorial Scholarship
Established in 2020 by the Estate of Margaret Janet Wilson Gibson B.A. (Class of ‘89), in memory of Jim and Margaret Gibson.
Requirements: To be awarded to students enrolled in Level 3 or above of an English and Cultural Studies program in the Faculty of Humanities who attain high averages.
Typically Available: 1 x $4,800

The Liburdi Family Foundation International Exchange Scholarship
Established in 2019 by Joseph Liburdi in loving memory of his parents, Carlo and Domenica.
Requirements: To be awarded to students enrolled in the Faculty of Engineering who attain high averages and are participating in one of McMaster’s formal exchange programs.
Typically Available: 1 x $10,000

The Dr. Jason Lo Materials Science and Engineering Scholarship
Established in 2019 in memory of Dr. Jason Lo a leader in emerging materials, and an outstanding scientist, renowned for his deep commitment to student research, who had a passion for innovation.
Requirements: To be awarded to students enrolled in Level 2 of any Materials Science and Engineering program who attain high averages.
Typically Available: 1 x $2,500

The Tony Paver Memorial Scholarship
Established in 2020 by CUPE Local 5167 in loving memory of Tony Paver.
Requirements: To be awarded to a student enrolled in a Labour Studies program who attains high averages.
Typically Available: 1 x $1,000

CHANGES TO AWARD TERMS FOR APPROVAL

The Abe Black Memorial Prize
Established in 1982 by friends and colleagues of Dr. A.H. Black in memory of a distinguished member of the Department of Psychology, Neuroscience & Behaviour from 1958 to 1978.

Requirements: To be awarded to the students who, in the judgment of the Department of Psychology, Neuroscience & Behaviour, has demonstrated outstanding achievement in PNB 4D06 A/B (Senior Thesis), PNB 4D09 A/B (Senior Honours Thesis), or PNB 4DD6 A/B (Senior Thesis) enrolled in Level 2 or above in an Honours Psychology, Neuroscience & Behaviour program who attain high averages.

The Linguistics and Languages Travel Scholarship
Established in 1991 by the Department of Modern Languages and Linguistics.

Requirements: To be awarded to a student enrolled in Level 2 or above in a program in Cognitive Science of Language or Linguistics and who, in the judgment of the Department of Linguistics and Languages, has attained notable academic standing or attain high averages. The purpose of the scholarship is to assist with travel expenses to study and travel abroad. Priority will be given to a student participating in the Humanities Study Elsewhere Program.

PROPOSED NEW BURSARIES FOR APPROVAL

Submitted by the Office of Student Financial Aid & Scholarships

The Shelly Ferguson Bursary
Established in 2020 by Shelly Ferguson, B.A.Hon. (Class of 2004) in recognition of the potential and talents of all students.

Requirements: To be granted to students enrolled in any program who demonstrate financial need. Preference will be given to students who are mothers of preschool children.

The Jim & Margaret Gibson English & Cultural Studies Bursary
Established in 2020 by the Estate of Margaret Janet Wilson Gibson B.A. (Class of ‘89), in memory of Jim and Margaret Gibson.

Requirements: To be granted to students enrolled in Level 3 or above of an English and Cultural Studies program in the Faculty of Humanities who demonstrate financial need.

The Jim & Margaret Gibson Memorial Bursary
Established in 2020 by the Estate of Margaret Janet Wilson Gibson B.A. (Class of ‘89), in memory of Jim and Margaret Gibson.

Requirements: To be granted to students enrolled in Level 3 or above in the Faculty of Humanities who demonstrate financial need. Preference will be given to students with an interest in German Studies or those enrolled in German courses.

The Sandra Stephens “Brighter World” Memorial Bursary
Established in 2020 in loving memory of Sandra Stephens.

Requirements: To be granted to students enrolled in Level 3 or above in the Faculty of Business who demonstrate financial need. Preference will be given to students who demonstrate leadership and
community engagement within McMaster.

**The Wentworth Strategy Group Bursary**
Established in 2019 by Mark John Stewart, B.A.Hon (Class of 2006), M.B.A. (Class of 2010), Managing Director of Wentworth Strategy Group and former President of the McMaster Alumni Association.

**Requirements:** To be granted to a student enrolled in the Honours Bachelor of Commerce in Integrated Business and Humanities program who demonstrates financial need. Preference will be given to students who demonstrate leadership and community engagement.

**CHANGES TO BURSARY TERMS**

**The Lois Aileen Menzies Brown Bursary**
Established in 1997 by Douglas A. and in honour of Lois Aileen Menzies Brown, mother and wife, in recognition of the health care provided to her family in association with members of the McMaster Health Sciences teams, in honour of their son Douglas Ian Brown. To be granted to a McMaster student enrolled in the Faculty of Health Sciences who demonstrates financial need.

Awards Removed from the Undergraduate Calendar for Approval
The McMaster Bursaries
The Don Phillips Bursary
The Abe Black Memorial Prizes

**FOR INFORMATION**

**AWARD NAME CHANGES**
The Stelco Bursary U.S. Steel Canada Group of Business Fund
The Hamilton-Oshawa Port Authority HOPA Ports Scholarship

**AWARD VALUE CHANGES**
The De Villiers - Mahaffy Merit Awards **Typically Available:** 2 x $250 - $1,000
The Linguistics and Languages Travel Scholarship **Typically Available:** 3 x $250 - $1,000
REPORT TO UNDERGRADUATE COUNCIL
from the
UNDERGRADUATE COUNCIL
CERTIFICATES AND DIPLOMAS COMMITTEE

FOR APPROVAL

I. Revisions to Certificate and Diploma Programs
At its March 31, 2020 meeting, the Certificates and Diplomas Committee approved, for recommendation to Undergraduate Council, minor revisions to the Human Resources Management Diploma Program. Details of the proposed revisions are contained within the circulated report.

It is now recommended,

that the Undergraduate Council approve revisions to the Human Resources Management Diploma Program, as set out in the attached.

II. New Certificate and Diploma Programs
At the same meeting, the Certificates and Diplomas Committee approved, for recommendation to Undergraduate Council, the establishment of the following Certificate programs. Details of the proposed Certificates are contained within the circulated report.

a. Certificate, Data Analytics
b. Certificate, Data Science
c. Certificate, Data Engineering

It is now recommended,

that the Undergraduate Council approve, for recommendation to Senate, the establishment of the Certificate in Data Analytics, as set out in the attached.

It is now recommended,

that the Undergraduate Council approve, for recommendation to Senate, the establishment of the Certificate in Data Science, as set out in the attached.

It is now recommended,

that the Undergraduate Council approve, for recommendation to Senate, the establishment of the Certificate in Data Engineering, as set out in the attached.

III. Closure of Certificate and Diploma Programs
At the same meeting, the Certificates and Diplomas Committee approved, for recommendation to Undergraduate Council, the closure of the following Certificate programs. Details of the proposed Certificate closures are contained within the circulated report.
a. Certificate, Foundations of Analytics  
b. Certificate, Big Data Analytics  

It is now recommended,  

that the Undergraduate Council approve, for recommendation to Senate, the closure of the Certificate in Foundations of Analytics effective September 2020, as set out in the attached.  

It is now recommended,  

that the Undergraduate Council approve, for recommendation to Senate, the closure of the Certificate in Big Data Analytics effective September 2020, as set out in the attached.  

FOR INFORMATION  

IV. New Certificate of Completion Programs  
At the same meeting, the Certificates and Diplomas Committee received, for information, the establishment of nine Certificate of Completion programs:  

a. Certificate of Completion, An Introduction to Artificial Intelligence in Health Care  
b. Certificate of Completion, AWS Academy Cloud Architecting  
c. Certificate of Completion, AWS Academy Cloud Foundations  
d. Certificate of Completion, Health Analytics  
e. Certificate of Completion, Privacy Management  
f. Certificate of Completion, Sustainability  
g. Certificate of Completion, Data Analytics  
h. Certificate of Completion, Data Science  
i. Certificate of Completion, Data Engineering  

V. Closure of Certificate of Completion Programs  
At the same meeting, the Certificates and Diplomas Committee received, for information, the closure of ten Certificate of Completion programs:  

a. Certificate of Completion, Foundations of Analytics: Business Intelligence  
b. Certificate of Completion, Foundations of Analytics: Data Analysis  
c. Certificate of Completion, Foundations of Analytics: Data Science  
d. Certificate of Completion, Health Information Systems  
e. Certificate of Completion, Evaluation and Data Analytics for the Health Sector  
f. Certificate of Completion, Foundations in Canadian Health  
g. Certificate of Completion, Pathophysiology & Epidemiology  
h. Certificate of Completion, Principles of Health Information  
i. Certificate of Completion, Workplace Health & Wellness  
j. Certificate of Completion, Fundamentals of Addiction for Allied Health Professionals  

VI. New Certificate of Attendance Programs  
At the same meeting, the Certificates and Diplomas Committee received, for information, the establishment of the Certificate of Attendance, Connected Health and the Internet of Things.  

Undergraduate Council  
April 14, 2020
## A. Department & Program Information (Complete all fields):

<table>
<thead>
<tr>
<th>Field</th>
<th>Details</th>
</tr>
</thead>
<tbody>
<tr>
<td>Department</td>
<td>McMaster Continuing Education</td>
</tr>
<tr>
<td>Program Name</td>
<td>Human Resources Management Program</td>
</tr>
<tr>
<td>Name of Representative</td>
<td>Nathalie Vallée, Program Manager</td>
</tr>
<tr>
<td>Nature of Submission</td>
<td>Course revision</td>
</tr>
<tr>
<td>Effective Date</td>
<td>June 2020</td>
</tr>
<tr>
<td>Submission Date</td>
<td>March 11th, 2020</td>
</tr>
</tbody>
</table>

## B. Course Revision #1

<table>
<thead>
<tr>
<th>Field</th>
<th>Details</th>
</tr>
</thead>
<tbody>
<tr>
<td>Current Course Title</td>
<td>Occupational Health and Safety</td>
</tr>
<tr>
<td>Is this course currently offered?</td>
<td>Yes</td>
</tr>
<tr>
<td>Existing Course Code</td>
<td>HRM 921</td>
</tr>
<tr>
<td>Course Unit Value</td>
<td>3 units</td>
</tr>
</tbody>
</table>

List Course Pre-requisites (if applicable):
N/A

Revised Course Description:
The major objective of this course is to introduce human resources professionals to the broad and ever-changing field of occupational health and safety, an inherently technical subject area far broader than legislation only. The course will explore occupational health and safety (OHS) regionally, nationally and internationally, as you analyze technical, legislative, political and personnel issues. Within each module, you will study a series of topics using multimedia materials carefully curated for you to build your own practitioner library and you will learn from real case studies from the Canadian court system. Upon completion of this course, you should be able to identify a strong OHS program, identify gaps in a program, the role of occupational
Revised Course Learning Outcomes:

<table>
<thead>
<tr>
<th>By the end of this course, students will be able to:</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Explain the connection between human resources management and occupational health and safety when planning and managing safe workplaces.</td>
</tr>
<tr>
<td>2. Make informed recommendations based on knowledge of the evolution of health and safety legislation, including policies, regulations and standards.</td>
</tr>
<tr>
<td>3. Describe the process of hazard recognition, risk assessment, prevention and control (pre-contact, contact and post-contact control)</td>
</tr>
<tr>
<td>4. Explain the risk, identification, interactions, and management of various workplace hazards such as chemical, biological, psychological, and physiological agents.</td>
</tr>
<tr>
<td>5. Discuss the importance of occupational health and safety training, emergency preparedness and evacuation plans in consideration of employer’s obligations and employees’ rights.</td>
</tr>
<tr>
<td>6. Describe the incident investigation process, including accidents/incidents, legal requirements, tools and record keeping.</td>
</tr>
</tbody>
</table>

Rationale for Revision:

Upon development of the course with the Subject Matter Expert, the course description and learning outcomes needed to be revised to reflect the content and assessment changes made to the course.
### B. Course Revision #2

<table>
<thead>
<tr>
<th>Current Course Title:</th>
<th>Human Resources Planning</th>
</tr>
</thead>
<tbody>
<tr>
<td>Is this course currently offered?</td>
<td>Yes</td>
</tr>
<tr>
<td>Existing Course Code:</td>
<td>HRM 923</td>
</tr>
<tr>
<td>Course Unit Value:</td>
<td>3 units</td>
</tr>
<tr>
<td>List Course Pre-requisites (if applicable):</td>
<td>N/A</td>
</tr>
</tbody>
</table>

**Revised Course Description:**
Participants will learn the theory, best practices and industry trends in Human Resource Planning. Specific areas of discussion include, setting the foundation for strategic human resource planning, job analysis, forecasting and workforce planning, talent management, compensation, international HR and program development and implementation.

**Revised Course Learning Outcomes:**
By the end of this course, students will be able to:

1. Detail the key considerations in the HR planning process and how HR planning supports the achievement of organizational goals and objectives.
2. Detail the connection of various human resources practices, including job design, forecasting and planning, compensation, and talent management to organizational structure, strategy and culture.
3. Detail qualitative and quantitative forecasting methods to determine HR supply and demand and develop strategies to address talent surplus and shortages.
4. Outline how job design, organizational design and total rewards programs can enhance and constrain employee and organizational success.
5. Develop a robust HR plan supported by effective workforce planning, performance management programs and talent management strategies.
<p>| | |</p>
<table>
<thead>
<tr>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>6.</td>
<td>Outline the benefits and constraints on HR planning when operating within an international landscape.</td>
</tr>
<tr>
<td>7.</td>
<td>Analyze and assess the performance of HR program effectiveness.</td>
</tr>
</tbody>
</table>

**Rationale for Revision:**

Upon development of the course with the Subject Matter Expert, the learning outcomes needed to be revised to reflect the content and assessment changes made to the course.
DATE: March 27th, 2020

TO: Certificate and Diploma Committee, Undergraduate Council and Senate

FROM: Sue McCracken, Associate Dean, Academic, DeGroote School of Business

SUBJECT: Evaluation of Revisions Made to the Human Resources Management Program Courses (HRM 921 and 923) for McMaster Continuing Education

I have reviewed the proposal for the review of the Human Resources Management program to be offered through McMaster Continuing Education. I have examined the proposed revisions for the course descriptions and learning outcomes linked to the rationale for their changes. My examination of the revisions concurs that the proposed courses are still of the intellectual rigour comparable to that found in undergraduate degree courses and that aligning with industry trends and professional associations will be beneficial to the program and the students. Students taking the courses will continue to meet the minimum requirements set out in the Policy on Certificates and Diplomas for Undergraduate Council.

Since the courses and diploma meet all these criteria as set out in the Policy on Certificates and Diplomas for Undergraduate Council, I support the submission of these revisions to the Committees for approval.

Sincerely,

Susan McCracken, Associate Dean (Academic), PhD, CPA, CA
Associate Professor in Accounting
DeGroote School of Business | McMaster University
1280 Main Street West, Hamilton Ontario L8S 4M4
905.525.9140 ext. 23993 | smccrac@mcmaster.ca
March 27th, 2020

TO: Susan McCracken, DeGroote School of Business
FROM: Aaron Schat, Human Resources & Management Area
SUBJECT: Evaluation of HRM Course Revisions, Proposal for McMaster Continuing Education

I have reviewed the proposal for the course revision of the two HRM courses (Occupational Health and Safety, Human Resources Planning) offered through the McMaster Continuing Education. I have examined the submission document and it is my finding that the proposed changes to the courses in the Human Resources Management Program are appropriate, and the course continues to meet the standards necessary for an academic program with courses of 3.0 units. Students taking the course will continue to meet the minimum requirements set out in the Policy on Certificates and Diplomas for Undergraduate Council. In conclusion, the revised course will meet all criteria as set out in the Policy on Diplomas & Certificates for Undergraduate Council, I am in support of the proposed changes to HRM 921 and HRM 923.

Sincerely,

[Signature]

Aaron Schat
Chair, Human Resources & Management Area
DeGroote School of Business
Phone: (905) 525-9149, ext 23946
Email: schata@mcmaster.ca

Cc: Susan McCracken, Associate Dean, DeGroote School of Business
DATE: March-31-20
TO: Certificate & Diploma Committee
FROM: Lorraine Carter, Director, McMaster Continuing Education
RE: Proposal for Data Analytics, Data Science and Data Engineering programs

Continuing Education is proposing a restructuring of two existing programs: Foundations of Data Analytics and Big Data Analytics. Courses from both programs will be re-assigned to the following new programs:

- Data Analytics (Certificate of Completion, Certificate)
- Data Science (Certificate of Completion, Certificate)
- Data Engineering (Certificate of Completion, Certificate)

This restructuring will further result in closure of a number of existing Certificate and Certificate of Completion programs associated with Foundations of Data Analytics and Big Data Analytics. These programs will be carefully phased out over the next year (2020/21) in order for students to complete program requirements. Students will also have the option to transition to one of the new programs if they wish.

Upon conclusion of the program approval process, students will be notified by Continuing Education of these changes and the options for finishing their studies.

The following programs will close as a result of this restructuring process:

- Foundations of Analytics Certificate
- Foundations of Analytics: Business Intelligence Certificate of Completion
- Foundations of Analytics: Data Analysis Certificate of Completion
- Foundations of Analytics: Data Science Certificate of Completion
- Big Data Analytics Certificate

The rationale for these changes is based on student enrolment patterns, instructor and student feedback, and evolving industry trends.

Sincerely,

Lorraine Carter
Director, Continuing Education
### Department & Program Information (complete all fields):

<table>
<thead>
<tr>
<th>Field</th>
<th>Details</th>
</tr>
</thead>
<tbody>
<tr>
<td>Program Name</td>
<td>Data Analytics</td>
</tr>
<tr>
<td>Name of Representative</td>
<td>Mahdi Eskandari</td>
</tr>
<tr>
<td>Effective Date</td>
<td>May 1, 2020</td>
</tr>
<tr>
<td>Date of Submission</td>
<td>March 20, 2020</td>
</tr>
</tbody>
</table>

### Academic Merit (complete all fields; write “not applicable” as needed):

<table>
<thead>
<tr>
<th>Field</th>
<th>Details</th>
</tr>
</thead>
<tbody>
<tr>
<td>Program Overview</td>
<td>The Data Analytics program replaces the Foundations of Data Analytics program. The program will offer a Certificate in Data Analytics or a Certificate of Completion in Data Analytics. The program presents an intermediate level of content in the areas of statistics, data analytics, big data analytics, machine learning and technical/software applications. The purpose of the program is to offer courses with a focus on modelling and analysis of data for students with prior academic and work experience in data analytics and/or introductory level of data science, and related topics. Students may select courses based on their academic and professional backgrounds as well as their future learning needs. Students interested in enrolling in the intermediate to advanced topics with data analytics and data science but lack the pre-requisite knowledge may be referred to this program. Each course will bridge theory and practical experience through a combination of experiential learning (i.e. case studies, projects, data laboratory activities, discussions, and presentations) and traditional teaching methods. Emerging trends, theories and practices will be incorporated to coursework to ensure that program content is current and relevant.</td>
</tr>
<tr>
<td>Learning Objectives</td>
<td>Upon completion of the program, students will:</td>
</tr>
</tbody>
</table>
- Apply statistical methods for the analysis of data sets
- Collect, analyze, interpret, and share data;
- Identify relationships in data;
- Select and employ problem-solving techniques and source standard and web-based tools to test analytical solutions;
- Demonstrate fundamental skills for using information visualization techniques and tools;
- Define the principles and potential uses of artificial intelligence in various industries
- Employ data models in business intelligence and data analysis case studies

The following objectives will be threaded within each course:
- Demonstrate an awareness of ethical practices and professional standards applicable to the field of data analytics;
- Exemplify the skills, attitudes and behaviours required to work and collaborate with people and develop personal management skills;
- Employ effective communication practices

<table>
<thead>
<tr>
<th>Meeting Learning Objectives:</th>
<th>The Data Analytics program will use a series of courses to achieve the stated program objectives. Individual course objectives are mapped to the overall program objectives. The delivery format and teaching methods are structured to have a maximum effect on achieving the learning objectives.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Program Admission Requirements:</td>
<td>The program will not require an application for admission. Recommended program requirements will be posted to Continuing Education’s website:</td>
</tr>
<tr>
<td></td>
<td>“In compliance with the Certificates and Diploma, admission policy from Undergraduate Council, students who wish to enter the Data Analytics program should meet the following requirements based on their education and work experience:</td>
</tr>
<tr>
<td></td>
<td>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</td>
</tr>
<tr>
<td></td>
<td>2) Be proficient with computer program applications, such as Word, Excel</td>
</tr>
<tr>
<td></td>
<td>3) Follow University guidelines for English Language Proficiency requirements: Completion of TOEFL exam with a minimum acceptable score of IBT: 86 overall with a minimum</td>
</tr>
<tr>
<td><strong>Program Pre-requisites (if applicable):</strong></td>
<td>A score of 20 on each of the four components (Reading, Writing, Speaking, Listening), valid for 2 years.</td>
</tr>
<tr>
<td>------------------------------------------</td>
<td>--------------------------------------------------</td>
</tr>
<tr>
<td><strong>Program Completion Requirements:</strong></td>
<td>Prior to the start of the first course, students will be required to attend class with the requisite laptop computer and software programs. Technology specifications will be provided to students upon course enrolment and will be posted to CE’s program webpages.</td>
</tr>
<tr>
<td><strong>Program Delivery Format:</strong></td>
<td>To qualify for a Certificate, students must complete a minimum of 15 units of study. To qualify for a Certificate of Completion, students must complete 3 courses.</td>
</tr>
<tr>
<td><strong>Program Delivery Format:</strong></td>
<td>Program courses may be delivered in-person, online and/or a blended format. All formats will include instructor lecture and/or presentations, group discussions, and practical application activities.</td>
</tr>
<tr>
<td><strong>Student Evaluations (Grading Process):</strong></td>
<td>Each course will include several evaluation components. The evaluations will consist of assignments, case studies, presentations, data laboratory application activities, individual or group projects, class participation, or a combination thereof. Where appropriate, evaluations will be structured to evaluate participants’ level of competency in achieving overall learning objectives.</td>
</tr>
<tr>
<td><strong>Course Evaluation:</strong></td>
<td>For each course, students will complete an evaluation to assess content, delivery, materials, method of evaluation and instruction.</td>
</tr>
<tr>
<td><strong>Course Instruction:</strong></td>
<td>Instructors for courses will be selected from a pool of qualified external professionals. In compliance with <em>McMaster’s Senate and Undergraduate Council Guidelines for Certificates and Diplomas</em>, the 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.</td>
</tr>
<tr>
<td><strong>Credit Towards Degree Programme Studies:</strong></td>
<td>The academic credit courses included in the program may be used for credit towards undergraduate degree studies in accordance with the normal academic rules as specified by the Faculty offering the degree.</td>
</tr>
<tr>
<td><strong>Program Advanced Standing:</strong></td>
<td>Upon enrolment to the program, a student may receive up to a maximum of 6 units of transfer credit for the Certificate option. No transfer credit will be permitted for the Certificate of Completion. Students may apply the completed Certificate of Completion in Data Analytics courses to the Certificate in Data Analytics.</td>
</tr>
</tbody>
</table>
External courses used for advanced standing must be equivalent to the McMaster courses that they replace; specifically,
- Courses must have at least 80% content/curricula overlap and a similar number of equivalent to classroom hours;
- Courses must be listed on an official transcript from an accredited academic institution with a grade; and,
- Courses must be taken within the last 3 years.

Statement of Financial Viability:
I have reviewed the business case and financial projections which includes 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).

Lorraine Carter, Director, Centre for Continuing Education

Statement of Administrative Responsibilities:

Statement of Faculty Alignment:
The staffing and systems infrastructure to support the following functions already exists within the Centre for Continuing Education. Costs will be fully covered by tuition, with the exception of the first year of the program, when the startup will be subsidized by the Centre for Continuing Education.

Program responsibilities are as follows:
- Budget development and monetary responsibilities
- Program and Course Development
- Course Registrations/Administration
- Supervision of Instructors to ensure University policies and practices are adhered to; courses are taught according to program requirements and standards
- Marketing and Promotions

The DeGroote School of Business will act as academic liaison and is charged with the responsibility of on-going academic review and assessment of the curriculum. The Faculty’s letter of support is included at the end of this document.

Listing of Courses:
The current course codes are provided in the course list. Course codes will be revised for the new program plan.

<table>
<thead>
<tr>
<th>Course Code &amp; Title</th>
<th>Required/Elective</th>
<th>Unit Value</th>
<th>Term</th>
</tr>
</thead>
<tbody>
<tr>
<td>(BDA 200) Foundations of Computer Programming</td>
<td>Elective</td>
<td>3.0</td>
<td>Spring 2020</td>
</tr>
</tbody>
</table>

This course introduces the students to the fundamentals of structured programming and problem-solving. A current programming language will be used to introduce problem
analysis, algorithm design, object-oriented programming concepts and program implementation. Topics include variables, conditional processing, loops, functions, data structures, error handling and file input/output. Programming experience is not required; however, proficiency with computer operating systems is required.

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Type</th>
<th>Credits</th>
<th>Term</th>
</tr>
</thead>
<tbody>
<tr>
<td>BDA 201</td>
<td>Statistics for Data Analysis</td>
<td>Elective</td>
<td>3.0</td>
<td>Spring 2020</td>
</tr>
</tbody>
</table>

Course description: This course introduces descriptive statistics, basic inferential statistics, linear regression, and probability concepts and calculations. Practical application activities in the course focus on how statistical methods are used in the analysis of data. Common statistical and programming tools will be introduced and employed in order to demonstrate how significant and insightful information is collected, used and applied to problem-solving processes. This course is designed for individuals with no, or limited, study in Statistics. Pre-requisite: Grade 11/12 Mathematics (College/University Prep)

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Type</th>
<th>Credits</th>
<th>Term</th>
</tr>
</thead>
<tbody>
<tr>
<td>BDA 202</td>
<td>Working with Databases</td>
<td>Elective</td>
<td>3.0</td>
<td>Spring 2020</td>
</tr>
</tbody>
</table>

Course description: This course introduces the students to database management concepts using a practical approach. The course will begin with an introduction to data modeling and how these models are implemented through the use of the Structured Query Language (SQL). The remainder of the course explores how SQL can be used to query and manipulate data. Proficiency in computer operating systems is required.

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Type</th>
<th>Credits</th>
<th>Term</th>
</tr>
</thead>
<tbody>
<tr>
<td>BDA 203</td>
<td>Business Intelligence &amp; Data Analytics</td>
<td>Elective</td>
<td>3.0</td>
<td>Spring 2020</td>
</tr>
</tbody>
</table>

Course description: Learn to apply data analytics skills to the area of business intelligence (BI). Focus is placed on the components of business intelligence project lifecycle such as project planning, BI tool selection, data modelling, ETL design, BI application design and deployment and reporting. This course is designed for individuals interested in BI practices and analysis without a detailed focus on statistical analysis and computer programming.

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Type</th>
<th>Credits</th>
<th>Term</th>
</tr>
</thead>
<tbody>
<tr>
<td>BDA 204</td>
<td>Data Analysis and Visualization</td>
<td>Elective</td>
<td>3.0</td>
<td>Spring 2020</td>
</tr>
</tbody>
</table>

Course description: This course will examine the exploration of data in order to discover meaningful information to solve problems. The course will present the analytics life cycle in the context of planning to solve a business problem. Emphasis will be placed on framing the problem, proposing an analytics solution, communicating with stakeholders, and establishing an analytics focussed project plan. Common data visualization tools and techniques will be explored and used as students learn best practices for the presentation and communication of analytical solutions and insights.

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Type</th>
<th>Credits</th>
<th>Term</th>
</tr>
</thead>
<tbody>
<tr>
<td>BDA 207</td>
<td>Artificial Intelligence (AI) for Business: An Introduction (formerly Introduction to Artificial Intelligence)</td>
<td>Elective</td>
<td>3.0</td>
<td>Spring 2020</td>
</tr>
</tbody>
</table>
Course description: This course presents the principles of artificial intelligence (AI) through an exploration of its history, capabilities, technologies, framework, and its future. AI applications in various industries will be reviewed through some case examples. Current trends in AI will be discussed and students will be encouraged to consider the potentials of AI to solve complex problems. This course will help students to understand the implications of AI for business strategy, as well as the economic and societal issues it raises.

<table>
<thead>
<tr>
<th>(BDA 101) Data Analytics &amp; Modelling</th>
<th>Elective</th>
<th>3.0</th>
<th>Spring 2020</th>
</tr>
</thead>
<tbody>
<tr>
<td>Course description: This course offers an introduction to data science and machine learning paving the way for students to learn data analytics principles. In particular, this course begins with a brief history of data analytics and data science, followed by regression analysis, regression and classification trees, and ends with introductions to K-means clustering, principal component analysis (PCA). Each lecture has associated with it a practical lab session which students will put &quot;theory into practice&quot; offering students a hands-on approach to learning the material. Pre-requisite: Introductory statistics course, or BDA 201 Statistics for Data Analytics</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
**Department & Program Information (complete all fields):**

<table>
<thead>
<tr>
<th>Program Name:</th>
<th>Data Science</th>
</tr>
</thead>
<tbody>
<tr>
<td>Name of Representative:</td>
<td>Mahdi Eskandari</td>
</tr>
<tr>
<td>Effective Date:</td>
<td>May 1, 2020</td>
</tr>
<tr>
<td>Date of Submission:</td>
<td>March 20, 2020</td>
</tr>
</tbody>
</table>

**Academic Merit (complete all fields; write “not applicable” as needed):**

1. **Program Overview:**

   The Data Science program replaces the Big Data Analytics program. The program will offer a Certificate in Data Science or a Certificate of Completion in Data Science.

   The program presents an intermediate level of content in the areas of statistics, data analytics, big data analytics, machine learning and technical/software applications. The purpose of the program is to offer courses for students with prior academic and work experience in data analytics and/or introductory level of data science, and related topics.

   Students may select courses based on their academic and professional backgrounds as well as their future learning needs. Students interested in enrolling in advanced topics with data analytics, data science and data engineering, but lack the prerequisite knowledge may be referred to this program.

   Each course will bridge theory and practical experience through a combination of experiential learning (i.e. case studies, projects, data laboratory activities, discussions, and presentations) and traditional teaching methods. Emerging trends, theories and practices will be incorporated to coursework to ensure that program content is current and relevant.

   Program learning objectives and specific course outcomes align with INFORMS seven knowledge domains: 1) Business problem...
framing; ii) Analytics problem framing; iii) Data; iv) Methodology; v) Model Building; vi) Deployment, and vii) Model lifecycle management

| ii. Learning Objectives: | Upon completion of the program, students will:
| | • Identify a business problem and determine if, and how, an analytics solution is applicable;
| | • Translate a business problem into an analytics problem;
| | • Propose, and refine, analytical solutions to business problems;
| | • Collect, analyze, interpret, and share data;
| | • Identify relationships in data;
| | • Select problem-solving techniques and software tools to test analytical solutions;
| | • Employ common industry software tools;
| | • Identify, test, and evaluate model structures to apply to solve a business problem;
| | • Assess new and emerging technologies, tools and strategies applicable to data science and related fields.

The following objectives will be threaded within each course:
• Demonstrate an awareness of ethical practices and professional standards applicable to the field of data analytics;
• Exemplify the skills, attitudes and behaviours required to work and collaborate with people and develop personal management skills;
• Employ effective communication practices.

| iii. Meeting Learning Objectives: | The Data Science program will use a series of courses to achieve the stated program objectives. Individual course objectives are mapped to the overall program objectives. The delivery format and teaching methods are structured to have a maximum effect on achieving the learning objectives.

| iv. Program Admission Requirements: | The program will not require an application for admission. Recommended program requirements will be posted to Continuing Education’s website:
| | “In compliance with the Certificates and Diploma, admission policy from Undergraduate Council, students who wish to enter
the Data Analytics program should meet the following requirements based on their education and work experience:

- 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
- Be proficient with computer program applications, such as Word, Excel, and Access
- Possess prior education or work experience in the field of data analytics, statistics (minimum introductory level)
- Follow University guidelines for English Language Proficiency requirements: Completion of TOEFL exam with a minimum acceptable score of IBT: 86 overall with a minimum score of 20 on each of the four components (Reading, Writing, Speaking, Listening), valid for 2 years”

| v. Program Pre-requirements (if applicable): | Prior to the start of the first course, students will be required to attend class with the requisite laptop computer and software programs. Technology specifications will be provided to students upon course enrolment and will be posted to CE’s program webpages. |
| vi. Program Completion Requirements: | To qualify for a Certificate, students must complete a minimum of 15 units of study. To qualify for a Certificate of Completion, students must complete 3 courses. |
| vii. Program Delivery Format: | Program courses may be delivered in-person, online and/or a blended format. All formats will include instructor lecture and/or presentations, group discussions, and practical application activities. |
| viii. Student Evaluations (Grading Process): | Each course will include several evaluation components. The evaluations will consist of assignments, case studies, presentations, data laboratory application activities, individual or group projects, class participation, or a combination thereof. Where appropriate, evaluations will be structured to evaluate participants’ level of competency in achieving overall learning objectives. |
| ix. Course Evaluation: | For each course, students will complete an evaluation to assess content, delivery, materials, method of evaluation and instruction. |
| x. 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, the selection will be based on academic background and/or experience within the field. Instructors must have a |
### xi. Credit Towards Degree Programme Studies:

The academic credit courses included in the program may be used for credit towards undergraduate degree studies in accordance with the normal academic rules as specified by the Faculty offering the degree.

### xii. Program Advanced Standing:

Upon enrolment to the program, a student may receive up to a maximum of 6 units of transfer credit for the Certificate option. No transfer credits will be permitted for the Certificate of Completion.

Students may apply the completed Certificate of Completion in Data Science courses to the Certificate in Data Science.

External courses used for advanced standing must be equivalent to the McMaster courses that they replace; specifically,
- Courses must have at least 80% content/curricula overlap and a similar number of equivalent to classroom hours;
- Courses must be listed on an official transcript from an accredited academic institution with a grade; and,
- Courses must be taken within the last 3 years

### Statement of Financial Viability:

I have reviewed the business case and financial projections which includes 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).

*Lorraine Carter, Director, Continuing Education*

### Statement of Administrative Responsibilities:

Statement of Faculty Alignment:

The staffing and systems infrastructure to support the following functions already exists within the Centre for Continuing Education. Costs will be fully covered by tuition, with the exception of the first year of the program, when the startup will be subsidized by the Continuing Education.

Program responsibilities are as follows:
- Budget development and monetary responsibilities
- Program and Course Development
- Course Registrations/Administration
• Supervision of Instructors to ensure University policies and practices are adhered to; courses are taught according to program requirements and standards
• Marketing and Promotions

The DeGroote School of Business will act as academic liaison and is charged with the responsibility of on-going academic review and assessment of the curriculum. The Faculty’s letter of support is included at the end of this document.

### Listing of Courses:

The current course codes are provided in the course list. Course codes will be revised for the new program plan.

<table>
<thead>
<tr>
<th>Course Code &amp; Title</th>
<th>Required/Elective</th>
<th>Unit Value</th>
<th>Term</th>
</tr>
</thead>
<tbody>
<tr>
<td>(BDA 101) Data Analytics &amp; Modelling</td>
<td>Elective</td>
<td>3.0</td>
<td>Spring 2020</td>
</tr>
</tbody>
</table>

Course description: This course offers an introduction to data science and machine learning paving the way for students to learn data analytics principles. In particular, this course begins with a brief history of data analytics and data science, followed by regression analysis, regression and classification trees, and ends with introductions to K-means clustering, principal component analysis (PCA). Each lecture has associated with it a practical lab session which students will put "theory into practice" offering students a hands-on approach to learning the material.

Pre-requisite: Introductory statistics course, or BDA 201 Statistics for Data Analytics

| Machine Learning for Big Data Analytics (formerly BDA 102 Big Data Analytics) | Elective | 3.0 | Spring 2020 |

Course description: Building on the fundamental principles of data analytics, this course advances to modern machine learning techniques such as neural network, deep learning, and reinforcement learning as well as NLP and text analysis. Application activities will be structured to provide an introductory level of how machine learning techniques are applied to big data analytics. Learners should have a strong level of data analytics for this course. BDA 104 Predictive Modelling and Data Mining is recommended prior to registering in this course.

Pre-requisite: Intermediate or advanced statistics course, BDA 205 Statistical Analysis for Data Science, or BDA 101 Data Analytics & Modelling.

| (BDA 103) Data Management | Elective | 3.0 | Spring 2020 |

Course description: Data analytics problems require new tools/technologies to store and manage the data to realize the business benefit. This course explores the importance of managing data as an enterprise asset and the data management components required in term of the acquisition, storage, sharing, validation and accessibility of data for addressing business problems. An examination of Database Management Systems,
database architectures, the differences between OLTP (Online transaction processing) OLAP (online analytical processing) and the administrative processes that guide the data lifecycle will be a focus of the course.

Pre-requisite: Introductory statistics course, or BDA 201 Statistics for Data Analytics, or BDA 205 Statistical Analysis for Data Science

<table>
<thead>
<tr>
<th>Course Title</th>
<th>Type</th>
<th>Credits</th>
<th>Term</th>
</tr>
</thead>
<tbody>
<tr>
<td>(BDA 104) Predictive Modelling and Data Mining</td>
<td>Elective</td>
<td>3.0</td>
<td>Spring 2020</td>
</tr>
<tr>
<td>Course description: The course will introduce predictive modelling techniques as well as related statistical and visualization tools for data mining. The course will cover common machine learning techniques that are focused on predictive outcomes. Students will learn how to evaluate the performance of the prediction models and how to improve them through time. Pre-requisite: Introductory statistics course, or BDA 201 Statistics for Data Analytics.</td>
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</table>

<table>
<thead>
<tr>
<th>Course Title</th>
<th>Type</th>
<th>Credits</th>
<th>Term</th>
</tr>
</thead>
<tbody>
<tr>
<td>Data Science Capstone Project (formerly BDA 106 Big Data Capstone project)</td>
<td>Elective</td>
<td>3.0</td>
<td>Spring 2020</td>
</tr>
<tr>
<td>Course description: The course provides students with a real-world business problem/project in order to apply analytics models, methodologies and tools learned in the program. Faculty mentors will work with students to ensure the capstone project reflects, and encompasses, best practices for project management, data analytics and data science. Students should plan to complete this course in the final term of their studies.</td>
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</table>

<table>
<thead>
<tr>
<th>Course Title</th>
<th>Type</th>
<th>Credits</th>
<th>Term</th>
</tr>
</thead>
<tbody>
<tr>
<td>(BDA 205) Statistical Analysis for Data Science</td>
<td>Elective</td>
<td>3.0</td>
<td>Spring 2020</td>
</tr>
<tr>
<td>Course description: This course provides a foundation for exploring data through computing and statistical analysis. Focus is placed on the structure and applications of probability, statistics, computer simulation and data analysis for students exploring the field of data science. This course builds upon introductory statistics courses and is designed for students with experience/study in programming, calculus and algebra. Programming in R will be used throughout the course. Pre-requisite: Grade 12 U level Mathematics (Advanced Function, or Calculus and Vectors, or Mathematics for Data Management, or Mathematics for College Technology), or University or college introductory course in Statistics.</td>
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</table>

<table>
<thead>
<tr>
<th>Course Title</th>
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<th>Credits</th>
<th>Term</th>
</tr>
</thead>
<tbody>
<tr>
<td>Data Analytics Tools (formerly BDA 206 Data &amp; Web Technologies for Data Analysis)</td>
<td>Elective</td>
<td>3.0</td>
<td>Spring 2020</td>
</tr>
<tr>
<td>Course description: Students will learn how to collect, manage, analyze, and visualize data to deliver clear business insights from raw data sources. This course will cover the Hadoop ecosystem as it is a primary platform for any other tools like Spark or Kafka. This course also covers an example of NoSQL, such as Cassandra which is suited for distributed computing. Emerging tools and technologies may be presented as applicable</td>
<td></td>
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</tbody>
</table>

Page 66 of 113
to course content. Pre-requisite: Introductory statistics course, or BDA 201 Statistics for Data Analytics, or BDA 205 Statistical Analysis for Data Science
## Department & Program Information (complete all fields):

<table>
<thead>
<tr>
<th>Field</th>
<th>Information</th>
</tr>
</thead>
<tbody>
<tr>
<td>Program Name</td>
<td>Data Engineering</td>
</tr>
<tr>
<td>Name of Representative</td>
<td>Mahdi Eskandari</td>
</tr>
<tr>
<td>Effective Date</td>
<td>May 1, 2020</td>
</tr>
<tr>
<td>Date of Submission</td>
<td>March 21, 2020</td>
</tr>
</tbody>
</table>

## Academic Merit (complete all fields; write “not applicable” as needed):

### i. Program Overview:

The Data Engineering Program will offer a Certificate in Data Engineering or a Certificate of Completion in Data Engineering.

The program presents an intermediate-advanced level of topics in the areas of data science, machine learning with a focus on big data analytics, common open source technologies, and cloud computing platforms to create data infrastructure. The purpose of the program is to offer courses for students with prior academic and work experience in data analytics, data science, computer science, and related topics.

Students may select courses based on their academic and professional backgrounds as well as their future learning needs.

Each course will bridge theory and practical experience through a combination of experiential learning (i.e. case studies, projects, data laboratory activities, discussions, and presentations) and traditional teaching methods. Emerging trends, theories and practices will be incorporated to coursework to ensure that program content is current and relevant.

### ii. Learning Objectives:

Upon completion of the program, students will:

- Translate a business problem into an analytics problem;
- Propose, and refine, analytical solutions to business problems;
- Collect, analyze, interpret, and share data;
- Identify relationships in data;
- Select problem-solving techniques and software tools to test analytical solutions;
- Work with open source and scalable document database tools to search and manage large data sets efficiently
- Implement cloud computing concepts
- Build a variety of IT infrastructure on the cloud
- Prepare to pursue designation such as the Certified Cloud Practitioner, and Cloud Solutions Architect

The following objectives will be threaded within each course:
- Demonstrate an awareness of ethical practices and professional standards applicable to the field of data analytics;
- Exemplify the skills, attitudes and behaviours required to work and collaborate with people and develop personal management skills;
- Employ effective communication practices

<table>
<thead>
<tr>
<th>iii. Meeting Learning Objectives:</th>
<th>The Data Engineering program will use a series of courses to achieve the stated program objectives. Individual course objectives are mapped to the overall program objectives. The delivery format and teaching methods are structured to have a maximum effect on achieving the learning objectives.</th>
</tr>
</thead>
</table>
| iv. Program Admission Requirements: | The program will not require an application for admission. Recommended program requirements will be posted to Continuing Education’s website: “In compliance with the Certificates and Diploma, admission policy from Undergraduate Council, students who wish to enter the Data Analytics program should meet the following requirements based on their education and work experience:
- 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
- Be proficient with computer program applications, such as Word, Excel, and Access |
<p>| v. Program Pre-requisites (if applicable): | Prior to the start of the first course, students will be required to attend class with the requisite laptop computer and software programs. Technology specifications will be provided to students upon course enrolment and will be posted to CE’s program webpages. |
| vi. Program Completion Requirements: | To qualify for a Certificate, students must complete a minimum of 15 units of study. To qualify for a Certificate of Completion, students must complete 3 courses. |
| vii. Program Delivery Format: | Program courses may be delivered in-person, online and/or a blended format. All formats will include instructor lecture and/or presentations, group discussions, and practical application activities. |
| viii. Student Evaluations (Grading Process): | Each course will include several evaluation components. The evaluations will consist of assignments, case studies, presentations, data laboratory application activities, individual or group projects, class participation, or a combination thereof. Where appropriate, evaluations will be structured to evaluate participants’ level of competency in achieving overall learning objectives. |
| ix. Course Evaluation: | For each course, students will complete an evaluation to assess content, delivery, materials, method of evaluation and instruction. |
| x. 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, the 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. |
| xi. Credit Towards Degree | The academic credit courses included in the program may be used for credit towards undergraduate degree studies in |</p>
<table>
<thead>
<tr>
<th>Programme Studies:</th>
<th>accordance with the normal academic rules as specified by the Faculty offering the degree.</th>
</tr>
</thead>
</table>
| xii. Program Advanced Standing: | Upon enrolment to the program, a student may receive up to a maximum of 6 units of transfer credit for the Certificate option. No transfer credits will be permitted for the Certificate of Completion. Students may apply the completed Certificate of Completion in Data Engineering courses to the Certificate in Data Engineering. 

External courses used for advanced standing must be equivalent to the McMaster courses that they replace; specifically,  

- Courses must have at least 80% content/curricula overlap and a similar number of equivalent to classroom hours;  
- Courses must be listed on an official transcript from an accredited academic institution with a grade; and  
- Courses must be taken within the last 3 years |

**Statement of Financial Viability:**
I have reviewed the business case and financial projections which includes 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).

*Lorraine Carter, Director, Continuing Education*

**Statement of Administrative Responsibilities:**

**Statement of Faculty Alignment:**
The staffing and systems infrastructure to support the following functions already exists within the Centre for Continuing Education. Costs will be fully covered by tuition, with the exception of the first year of the program, when the startup will be subsidized by the Centre for Continuing Education.

Program responsibilities are as follows:  

- Budget development and monetary responsibilities  
- Program and Course Development  
- Course Registrations/Administration  
- Supervision of Instructors to ensure University policies and practices are adhered to; courses are taught according to program requirements and standards  
- Marketing and Promotions
The DeGroote School of Business will act as academic liaison and is charged with the responsibility of on-going academic review and assessment of the curriculum. The Faculty’s letter of support is included at the end of this document.

**Listing of Courses:**

The current course codes are provided in the course list. Course codes will be revised for the new program plan.

<table>
<thead>
<tr>
<th>Course Code &amp; Title</th>
<th>Required/Elective</th>
<th>Unit Value</th>
<th>Term</th>
</tr>
</thead>
<tbody>
<tr>
<td>Machine Learning for Big Data Analytics (formerly BDA 102 Big Data Analytics)</td>
<td>Elective</td>
<td>3.0</td>
<td>Spring 2020</td>
</tr>
</tbody>
</table>

Course description: Building on the fundamental principles of data analytics, this course advances to modern machine learning techniques such as neural network, deep learning, and reinforcement learning as well as NLP and text analysis. Application activities will be structured to provide an introductory level of how machine learning techniques are applied to big data analytics. Learners should have a strong level of data analytics for this course. BDA 104 Predictive Modelling and Data Mining is recommended prior to registering in this course. Pre-requisite: Intermediate or advanced statistics course, BDA 205 Statistical Analysis for Data Science, or BDA 101 Data Analytics & Modelling.

| (BDA 103) Data Management | Elective | 3.0        | Spring 2020     |

Course description: Data analytics problems require new tools/technologies to store and manage the data to realize the business benefit. This course explores the importance of managing data as an enterprise asset and the data management components required in term of the acquisition, storage, sharing, validation and accessibility of data for addressing business problems. An examination of Database Management Systems, database architectures, the differences between OLTP (Online transaction processing) OLAP (online analytical processing) and the administrative processes that guide the data lifecycle will be a focus of the course.

Pre-requisite: Introductory statistics course, or BDA 201 Statistics for Data Analytics, or BDA 205 Statistical Analysis for Data Science

| Data Programming I (formerly BDA 105 Big Data Programming) | Elective | 3.0        | Spring 2020     |

Course description: This course examines developing solutions for extracting and analyzing big data sets using various technologies. Students will learn Scala and Java, which are the fundamental part of Spark, Kafka and HBase. Focus will be on Apache Spark and its different aspects. Students will explore real-time analytics tools such as Kafka and HBase. NoSQL will be covered in this course. Pre-requisite: Intermediate level of statistics, data analytics, and computer programming.

| (new course) Data Programming II | Elective | 3.0        | Spring 2020     |
Course description: The course will begin with an exploration of MongoDB, which is a
document database with scalability and flexibility for queries and indexing. Students will
progress to the ELK stack - a technology stack used for logging with different
components, such as Elasticsearch, Logstash and Kibana. Elastic search is a NoSQL
database which stores data as JSON documents, and it can be used to search large data
sets. Kibana is an open-source analytics tool which can be used with Elasticsearch for
visualisations. Logstash will be covered as a log management tool. Students also learn
how to implement real-time scenarios. A review of different Cloud providers will also be
covered. Pre-requisite: Intermediate level of statistics, data analytics, and computer
programming.

<table>
<thead>
<tr>
<th>(new course) Capstone Project – Data Engineering</th>
<th>Elective</th>
<th>3.0</th>
<th>Spring 2020</th>
</tr>
</thead>
</table>

Course description: The course provides students with a real-world business
task in order to apply analytics models, methodologies and tools learned in
the program. Faculty mentors will work with students to ensure the capstone project
reflects, and encompasses, best practices for project management and data engineering.
Students should plan to complete this course in the final term of their studies.

<table>
<thead>
<tr>
<th>(new course) Essentials of Cloud Computing</th>
<th>Elective</th>
<th>3.0</th>
<th>Spring 2020</th>
</tr>
</thead>
</table>

Course description: Explore the principles and practices of cloud computing with this
introductory course. Students will discover the importance of cloud computing for
today’s business and IT sectors through an examination of the development of cloud
infrastructures over time. Common practices for delivery, deployment, architecture and
security will be presented. Students will explore various cloud computing platforms to
understand and assess current service options and to discuss future developments for
cloud computing.
DATE: March-2-20
TO: Certificate & Diploma Committee
FROM: Susan McCracken, Associate Dean (Academic), DeGroote School of Business
RE: Proposal for Data Analytics, Data Science and Data Engineering programs
---------------------------------------------------------------------------------------------------
Dear Certificate and Diploma Committee Chair:

I have reviewed the program submission documents for the following three programs to be offered through Continuing Education (CE):

- Data Analytics (Certificate of Completion, Certificate)
- Data Science (Certificate of Completion, Certificate)
- Data Engineering (Certificate of Completion, Certificate).

I have determined that the proposed programs meet all the criteria set out by the Undergraduate Council in its guidelines for diplomas and certificates and we, therefore, endorse this submission with the support of the DeGroote School of Business.

At my request, the program proposals were reviewed by Dr. Elkafi Hassini. Dr. Hassini concluded that the objectives of the proposed programs are viable. The courses included in each of the programs will fulfill the stated objectives, and the programs meet the Undergraduate Council’s criteria for the designation of “Certificate” and “Certificate of Completion”. I concur with Dr. Hassini’s assessment of the three programs.

The DeGroote School of Business is pleased to be aligned with high-quality programs for data analytics, data science and data engineering. We believe these programs serve to meet the needs of people seeking training and employment in these fields. We support Continuing Education’s program submission as their academic affiliates, providing both the initial academic assessment and overview of future program/course development.
Sincerely,

Susan McCracken  
Associate Dean (Academic)  
DeGroote School of Business

Cc: Lorraine Carter, Director, CE  
    Dan Piedra, Assistant Director, CE
### Department & Program Information

<table>
<thead>
<tr>
<th>Program Name:</th>
<th>An Introduction to Artificial Intelligence in Health Care</th>
</tr>
</thead>
<tbody>
<tr>
<td>Credential:</td>
<td>Certificate of Completion (co-branded with National Institutes of Health Informatics (NIHI) and Continuing Education)</td>
</tr>
<tr>
<td>Name of Representative:</td>
<td>Nancy McQuigge</td>
</tr>
<tr>
<td>Effective Date:</td>
<td>May 1, 2020</td>
</tr>
<tr>
<td>Date of Submission:</td>
<td>March 31, 2020</td>
</tr>
</tbody>
</table>

### Academic Merit

**Program Overview**

The program is offered in partnership with McMaster Continuing Education (CE) and the National Institutes of Health Informatics (NIHI). NIHI provides professional development training for health care professionals across Canada. This program adds to the existing partner programs with Continuing Education and NIHI.

NIHI and CE will offer a 30-hour program in Artificial Intelligence (AI) in Health Care. Participants will complete their training with NIHI, and, upon completion of a specified number of hours and coursework, McMaster CE will issue a Certificate of Completion.

**Learning Objectives**

Learning Objectives for the series are established by the NIHI.

Participants completing this course will gain a comprehensive understanding of the three main areas of Artificial Intelligence (AI): Artificial narrow intelligence ("ANI"), Artificial General Intelligence ("AGI"), and Artificial superintelligence ("ASI"), within the context of health care and the data management supply chain systems found in health care. We will also explore related fields in this course, including the use of robotic technologies, clinical decision support, electronic medical records, etc.

The course will also cover various ethical issues raised from the use of AI in the future, and other important considerations such as: regulations, data privacy, cybersecurity and data protection, and AI in contrast to public health policy aims.
We will also apply the application of new AI technologies to stakeholders’ views of value, including clinicians, patients, vendors, payors, and even the investment community and capital markets.

Throughout the course, we will be reviewing real-world examples, and other thought leaders’ views and articles. Most of the weekly sessions will also include a dedicated discussion of the “Applications” and potential “Implications” for the use of AI in health care covered in that session’s topics.

### Meeting Learning Objectives
The program will use a series of modules/sessions to achieve the stated program objectives. Individual modules/session objectives are 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 Completion Requirements
To receive a Certificate of Completion, participants must complete a minimum of 30 hours of program content offered by NIHI. Participants will submit a series of evaluative components upon the completion of the modules/sessions.

### Program Delivery Format
Sessions will be delivered online using a combination of synchronous and asynchronous activities.

### Student Evaluations (Grading Process)
Final grade for participants will be “pass/fail”.

### Course Evaluation
NIHI will distribute a post-course evaluation for participants to assess content, delivery, materials, and facilitation.

### Course Instruction
Facilitators are selected by NIHI from a pool of qualified professionals. Selection is based on academic background and/or experience within the program area.

### Listing of Courses /Modules

| Course Overview and Introduction | • Discussion of ‘What is AI?’
|                                  | • History
|                                  | • Definitions
| The Concepts of “Applications” and “Implications” | • Initial Discussion - How does AI Apply in a Healthcare Setting?
|                                                   | • Review of Current Thinking (Applications and Implications)
| Machine Learning | • What is it?
|                  | • History
|                  | • Case Study
| Neural Networks | • What are they?
|                 | • History
|                 | • Potential Outcomes and Risks
| **AI in the World of Innovation:** | • Definition of Innovation  
• Thoughts on Investment Required  
• Ways to Begin to Measure Success |
|-------------------------------|---------------------------------------------------------------|
| **Ethics** | • Data and Corporate Governance Models  
• Identification of Stakeholders  
• Considerations for Executive Leaders and Boards  
• Regulatory Landscape (i.e., Montreal Declaration for Responsible Development of AI) |
| **Data Privacy** | • Why is This a Consideration?  
• Jurisdictional Overview  
• Privacy Principles  
• Responsibilities of Healthcare Providers |
| **Data Privacy (cont’d)** | • Managing Privacy Risks  
• Identification, Assessment, and Actionable Tasks |
| **AI: Built for Scale and for Efficiency?** | • Tuning out Data Noise  
• What is the Potential?  
• How to Begin to Build Trust? |
| **Real World Scenarios in Health Care** | • Defining the Areas of Health Care (Acute care, Primary care, Home care, Pharma, etc.)  
• Most Common Applications  
• Potential Implications (Positive and Negative) |
| **Robotic Technologies** | • Use Case Examples  
• Does this Apply to Health Care?  
• Applications and Implications |
| **Industrial Internet of Things (IoT)** | • Various Sensor Technologies in Use  
• Data Types Gathered at Source  
• Applications and Implications |
| **Clinical Decision Support** | • Types  
• Use Case(s) Including Radiology  
• Review of Chapter from “Deep Medicine”, by Dr. Eric Topol  
• Applications and Implications |
| **Mental Health** | • Current Landscape and Use of Data  
• Assessment Tools  
• Applications and Implications |
<p>| <strong>EMR Systems</strong> | • What Data is Being Gathered |</p>
<table>
<thead>
<tr>
<th>Section</th>
<th>Topics</th>
</tr>
</thead>
<tbody>
<tr>
<td>The Plethora of Data and its Use</td>
<td>- Real-world Examples</td>
</tr>
<tr>
<td></td>
<td>- Other Applications and Implications</td>
</tr>
<tr>
<td>Supply Chain Considerations</td>
<td>- Definition(s) of “Supply Chain”</td>
</tr>
<tr>
<td></td>
<td>- How Can AI Contribute to Improvements in Supply Chain?</td>
</tr>
<tr>
<td></td>
<td>- Applications and Implications</td>
</tr>
<tr>
<td>Cybersecurity</td>
<td>- Definition(s), and Concept of Cyber Hygiene</td>
</tr>
<tr>
<td></td>
<td>- Examples of Cyber Risk Models and Planning Tools</td>
</tr>
<tr>
<td></td>
<td>- Why This is Important – Huge Amounts of Data in Health Care</td>
</tr>
<tr>
<td></td>
<td>- Applications and Implications</td>
</tr>
<tr>
<td>Cybersecurity (cont’d)</td>
<td>- The Cost of a Data Breach (How to Measure)</td>
</tr>
<tr>
<td></td>
<td>- What Boards Need to Consider</td>
</tr>
<tr>
<td></td>
<td>- A Model for Cybersecurity Governance</td>
</tr>
<tr>
<td>The Value of Health Data</td>
<td>- Different Viewpoints on Value</td>
</tr>
<tr>
<td></td>
<td>- How Do We Measure Value?</td>
</tr>
<tr>
<td></td>
<td>- How Do Investors and Capital Markets View AI?</td>
</tr>
<tr>
<td></td>
<td>- Applications and Implications</td>
</tr>
<tr>
<td></td>
<td>- Introduction to Risks: Cyber Security and Data Privacy</td>
</tr>
<tr>
<td>Course Summary</td>
<td>- Topics Covered</td>
</tr>
<tr>
<td></td>
<td>- Applications (Top Choices?)</td>
</tr>
<tr>
<td></td>
<td>- Implications (Best and Worst?)</td>
</tr>
<tr>
<td></td>
<td>- Conclusion</td>
</tr>
</tbody>
</table>
Continuing Education – Certificate of Completion Program Proposal for Information Purposes

<table>
<thead>
<tr>
<th>Department &amp; Program Information</th>
</tr>
</thead>
<tbody>
<tr>
<td>Program Name:</td>
</tr>
<tr>
<td>Credential:</td>
</tr>
<tr>
<td>Name of Representative:</td>
</tr>
<tr>
<td>Effective Date:</td>
</tr>
<tr>
<td>Date of Submission:</td>
</tr>
</tbody>
</table>

### Academic Merit

#### i) Program Overview

The program is based on the Amazon Web Services (AWS) Academy Cloud Architecting course available for AWS Academy member institutions. Continuing Education is an approved academy member. Participants will be eligible for a Certificate of Completion upon successful completion of the course.

The AWS Academy Cloud Architecting course builds upon the AWS Academy Cloud Foundations course. The course covers the fundamentals of building IT infrastructure on AWS. The course is designed to teach solutions architects how to optimize their use of the AWS Cloud by understanding AWS services and how they fit into cloud-based solutions. Although architectural solutions can differ depending on the industry, type of application, and size of the business, this course emphasizes best practices for the AWS Cloud that apply to all of them. It also recommends various design patterns to help participants think through the process of architecting optimal IT solutions on AWS. The course provides opportunities for participants to build a variety of infrastructures through a guided, hands-on approach.

#### ii) Learning Objectives

Upon completion of this course, participants will be able to:
- Describe principles to consider when migrating or designing new applications for the cloud
- Identify the design patterns and architectural options applied in a variety of use cases
- Define high availability, fault tolerance, and scalability
- Discuss how to avoid single points of failure
- List AWS services that have built-in fault tolerance or can be designed for fault tolerance
| iii) Meeting Learning Objectives | The AWS Academy Cloud Architecting course includes 15 content modules. Each module consists of lectures, online quizzes, videos, practice exercises, technical lab activities and a final project to ensure participants achieve the learning objectives of the course. |
| iv) Program Admission Requirements | The program will not require an application for admission. The course is open enrolment. |
v) Program Pre-requisites

- Participants should have the following prerequisites:
  - Completed *AWS Academy Cloud Foundations* (ACF) or have equivalent experience
  - A working knowledge of distributed systems
  - Familiarity with general networking concepts
  - A working knowledge of multi-tier architectures
  - Familiarity with cloud computing concepts

vi) Program Completion Requirements

To receive the Certificate of Completion, participants must complete all required course activities and assignments.

vii) Program Delivery Format

The course may be delivered in-class or online. An instructor will facilitate the course.

viii) Student Evaluations (Grading Process)

The course includes a series of knowledge checks (quizzes, short activities, discussions) for each module. Technical lab activities and the final project will be the required graded activities for the course.

ix) Course Evaluation

For each course, students will complete an evaluation to assess content, delivery, materials, method of evaluation and instruction.

x) Course Instruction

In accordance with AWS Academy institutional membership, instructors must hold a current AWS Certified Solutions Architect – Associate certification to teach the course.

### Listing of Courses

<table>
<thead>
<tr>
<th>Course Name</th>
<th>Required/Elective</th>
<th>Unit Value</th>
<th>Term</th>
</tr>
</thead>
<tbody>
<tr>
<td>AWS Academy Cloud Architecting</td>
<td>Required</td>
<td>Non-Credit</td>
<td>Spring 2020</td>
</tr>
</tbody>
</table>

**Course Description:**

*AWS Academy Cloud Architecting* covers the fundamentals of building IT infrastructure on AWS. The course is designed to teach solutions architects how to optimize their use of the AWS Cloud by understanding AWS services and how they fit into cloud-based solutions. Although architectural solutions can differ depending on the industry, type of application, and size of the business, this course emphasizes best practices for the AWS Cloud that apply to all of them. It also recommends various design patterns to help you think through the process of architecting optimal IT solutions on AWS. Throughout the course, students will explore case studies that showcase how some AWS customers have designed their infrastructures and the strategies and services that they have implemented. Finally, this course provides opportunities for students to build a variety of infrastructures through a guided, hands-on approach.
Continuing Education – Certificate of Completion Program Proposal for
Information Purposes

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<tr>
<td>i) Program Overview</td>
</tr>
<tr>
<td>The program is based on the Amazon Web Services (AWS) Academy Cloud Foundations course available for AWS Academy member institutions. Continuing Education is an approved academy member. Participants will be eligible for a Certificate of Completion upon successful completion of the course.</td>
</tr>
<tr>
<td></td>
</tr>
<tr>
<td>The AWS Academy Cloud Foundations course is intended for participants who seek an overall understanding of cloud computing concepts, independent of specific technical roles. It provides a detailed overview of cloud concepts, AWS core services, security, architecture, pricing, and support. This is an introductory course for individuals interested in cloud computing.</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>ii) Learning Objectives</th>
</tr>
</thead>
<tbody>
<tr>
<td>Upon completion of this course, students will be able to:</td>
</tr>
<tr>
<td>• Define the AWS Cloud</td>
</tr>
<tr>
<td>• Explain the AWS pricing philosophy</td>
</tr>
<tr>
<td>• Identify the global infrastructure components of AWS</td>
</tr>
<tr>
<td>• Describe the security and compliance measures of the AWS Cloud, including AWS Identity and Access Management (IAM)</td>
</tr>
<tr>
<td>• Create a virtual private cloud (VPC) by using Amazon Virtual Private Cloud (Amazon VPC)</td>
</tr>
<tr>
<td>• Demonstrate when to use Amazon Elastic Compute Cloud (Amazon EC2), AWS Lambda, and AWS Elastic Beanstalk</td>
</tr>
<tr>
<td>• Differentiate between Amazon Simple Storage Service (Amazon S3), Amazon Elastic Block Store (Amazon EBS), Amazon Elastic File System (Amazon EFS), and Amazon Simple Storage Service Glacier (Amazon S3 Glacier)</td>
</tr>
</tbody>
</table>
Demonstrate when to use AWS database services, including Amazon Relational Database Service (Amazon RDS), Amazon DynamoDB, Amazon Redshift, and Amazon Aurora

- Explain the architectural principles of the AWS Cloud
- Explore key concepts related to Elastic Load Balancing, Amazon CloudWatch, and Amazon EC2 Auto Scaling

### iii) Meeting Learning Objectives
The AWS Academy Cloud Foundations course includes 11 content modules. Each module consists of lectures, online quizzes, videos, practice exercises and technical lab activities to ensure participants achieve the learning objectives of the course.

### iv) Program Admission Requirements
The program will not require an application for admission. The course is open enrolment.

### v) Program Pre-requisites
Participants should have general IT technical knowledge and general IT business knowledge.

### vi) Program Completion Requirements
To receive the Certificate of Completion, participants must complete all required course activities and assignments.

### vii) Program Delivery Format
The course may be delivered in-class or online. An instructor will facilitate the course.

### viii) Student Evaluations (Grading Process)
The course includes a series of knowledge checks (quizzes, short activities) for each module. Technical lab activities will be the required graded activities for the course.

### ix) Course Evaluation
For each course, students will complete an evaluation to assess content, delivery, materials, method of evaluation and instruction.

### x) Course Instruction
In accordance with AWS Academy institutional membership, instructors must hold a current AWS Certified Cloud Practitioner certification to teach the course.

### Listing of Courses

<table>
<thead>
<tr>
<th>Course Name</th>
<th>Required/Elective</th>
<th>Unit Value</th>
<th>Term</th>
</tr>
</thead>
<tbody>
<tr>
<td>AWS Academy Cloud Foundations</td>
<td>Required</td>
<td>Non-Credit</td>
<td>Spring 2020</td>
</tr>
</tbody>
</table>

**Course Description:**

*AWS Academy Cloud Foundations* is intended for students who seek an overall understanding of cloud computing concepts, independent of specific technical roles. It provides a detailed overview of cloud concepts, AWS core services, security, architecture, pricing, and support.
### Department & Program Information

<table>
<thead>
<tr>
<th>Program Name:</th>
<th>Health Analytics</th>
</tr>
</thead>
<tbody>
<tr>
<td>Name of Representative:</td>
<td>Lorraine Carter</td>
</tr>
<tr>
<td>Effective Date:</td>
<td>May 1, 2020</td>
</tr>
<tr>
<td>Date of Submission:</td>
<td>March 31, 2020</td>
</tr>
</tbody>
</table>

### Academic Merit

#### Program Overview

The Health Analytics program applies the principles and practices of data analytics to healthcare data. Vast volumes of health data are collected by a variety of service providers and the analysis of this data informs decisions related to healthcare delivery, assessment, and quality management.

The program is geared for individuals seeking to further their professional roles in healthcare as well as individuals seeking data analytics positions in healthcare and related sectors.

Students may select courses based on their academic and professional backgrounds. Courses will include practical application activities using common statistical, programming and software tools for the collection, analysis and reporting of data.

#### Learning Objectives

Upon completion of this program, students will be able to:

- Identify and explain the primary components of the healthcare system
- Explore types of health information and analyze the information systems used to collect, store, assess, distribute, and protect health data
- Apply statistical analysis to sets of health care data
- Use standard statistical tool, software and programs for analysis and data visualization
- Assess how health data is used within the healthcare system, decision-makers, quality and risk managers
- Investigate the application of big data and machine learning practices for health data analysis

The following objectives will be threaded within each course:

- Demonstrate an awareness of ethical practices and professional standards applicable to the fields of health and social service
- Exemplify the skills, attitudes, and behaviours required to work and collaborate with people and develop personal management skills
- Employ effective communication practices

<table>
<thead>
<tr>
<th>Meeting Learning Objectives</th>
<th>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.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Program Admission Requirements</td>
<td>In compliance with the Certificates and Diploma, admission policy from Undergraduate Council, students who wish to enter the programs should meet the following requirements based on their education and work experience: 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 2. English Language Proficiency requirements: Completion of TOEFL exam with minimum acceptable score of IBT: 86 overall with a minimum score of 20 on each of the four components (Reading, Writing, Speaking, Listening), valid for 2 years</td>
</tr>
<tr>
<td>Program Pre-requisites</td>
<td>There are no specific program pre-requisites. Courses are open enrolment; however, it is recommended students have the following knowledge and skills: • Experience with using word processing programs and tools • Basic computer skills such as using a web browser (search and navigation), send and receive emails, locate and upload files</td>
</tr>
<tr>
<td>Program Completion Requirements</td>
<td>To qualify for a Certificate of Completion, students must complete a minimum of 3 courses of study.</td>
</tr>
<tr>
<td>Program Delivery Format</td>
<td>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 and assignments.</td>
</tr>
<tr>
<td>Student Evaluations (Grading Process)</td>
<td>Student evaluation will be based on short assignments, case studies, application activities, individual or group projects, class participation, or a combination thereof. Where appropriate, evaluations will be structured to evaluate participants’ level of competency in achieving overall learning objectives.</td>
</tr>
<tr>
<td>Course Evaluation</td>
<td>For each course, students will complete an evaluation to assess content, delivery, materials, method of evaluation and instruction.</td>
</tr>
</tbody>
</table>
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 Advanced Standing

Transfer credits are not accepted for this program.

### Listing of Courses

<table>
<thead>
<tr>
<th>Course Name</th>
<th>Required/Elective</th>
<th>Unit Value</th>
<th>Term</th>
</tr>
</thead>
<tbody>
<tr>
<td>HTH 100 Understanding the Canadian Healthcare System (existing course)</td>
<td>Elective</td>
<td>3.0</td>
<td>Spring 2020</td>
</tr>
</tbody>
</table>

**Course Description:**
This course involves the study of the Canadian healthcare system in terms of its history, health care governance and related provincial and federal regulations and legislation. Learners will examine how Canada’s healthcare system is organized, regulated, and managed. In addition, they will explore the different levels of care found in the health care system, and discuss how information is used and shared within the different levels. This course is suitable for individuals new to healthcare studies.

<table>
<thead>
<tr>
<th>Course Name</th>
<th>Required/Elective</th>
<th>Unit Value</th>
<th>Term</th>
</tr>
</thead>
<tbody>
<tr>
<td>Foundations of Health Data</td>
<td>Elective</td>
<td>N/A</td>
<td>Spring 2020</td>
</tr>
</tbody>
</table>

**Course Description:**
This course focuses on understanding the different types of health data available within healthcare systems. Understanding where to source the data is fundamental to the application of analytics strategies. Students will examine how data is collected, stored, mined, analyzed and interpreted for purposes of reporting, quality, performance management, decision making and research. A review of particular data sources and repositories within national and provincial health systems will be addressed.

<table>
<thead>
<tr>
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<th>Required/Elective</th>
<th>Unit Value</th>
<th>Term</th>
</tr>
</thead>
<tbody>
<tr>
<td>Statistics Analysis for Health Data</td>
<td>Elective</td>
<td>N/A</td>
<td>Spring 2020</td>
</tr>
</tbody>
</table>

**Course Description:**
This course provides a foundation to explore health data through computing and statistical analysis. Focus is placed on the structure and applications of probability, statistics, computer simulation and data analysis as applied to various types of health data. In particular, students will investigate descriptive statistics, inferential statistics, linear regression and probability concepts, hypothesis testing and foundational statistical tools are applicable to data analysis. Common statistical and programming tools will be used. Students should have an introductory/basic understanding of statistics for this course.
<table>
<thead>
<tr>
<th>Course Name</th>
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<th>Unit Value</th>
<th>Term</th>
</tr>
</thead>
<tbody>
<tr>
<td>Communicating with Data</td>
<td>Elective</td>
<td>N/A</td>
<td>Spring 2020</td>
</tr>
</tbody>
</table>

Course Description:
This course introduces the fundamental principles, strategies and tools to synthesize and summarize information to stakeholders. Common visualization tools/software will be used in order to create meaningful and insightful presentations and visualization reports. Application activities using health data sets allow students to create visualizations, dashboards, and data models to present their analysis to varying audiences.

<table>
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<tr>
<th>Course Name</th>
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<th>Unit Value</th>
<th>Term</th>
</tr>
</thead>
<tbody>
<tr>
<td>Predictive Analytics for</td>
<td>Elective</td>
<td>N/A</td>
<td>Spring 2020</td>
</tr>
<tr>
<td>Health Data</td>
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</tbody>
</table>

Course Description:
Building on the Statistical Analysis for Health Data course, this course presents an overview of the basic concepts and techniques in predictive analytics as applied to health data. Techniques covered in this course include: decision trees, classification rules, association rules, clustering, support vector machines, instance-based learning. Examples and cases are discussed to gain hands-on experience.
# Continuing Education – Certificate of Completion Program Proposal for Information Purposes

<table>
<thead>
<tr>
<th>Department &amp; Program Information (complete all fields)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Program Name:</td>
</tr>
<tr>
<td>Privacy Management</td>
</tr>
<tr>
<td>Name of Representative:</td>
</tr>
<tr>
<td>Lorraine Carter</td>
</tr>
<tr>
<td>Effective Date:</td>
</tr>
<tr>
<td>May 1, 2020</td>
</tr>
<tr>
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</tr>
<tr>
<td>May 31, 2020</td>
</tr>
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</table>

<table>
<thead>
<tr>
<th>Academic Merit (complete all fields; remove rows of items not required)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Program Overview</td>
</tr>
<tr>
<td>This program explores the fundamentals of information access and privacy within the context of Canadian laws and regulations. Program content will align with the International Association of Privacy Professionals’ (IAPP) core competencies for the Certified Information Privacy Professional/Canada (CIPP/C) designation.</td>
</tr>
<tr>
<td>This professional development program is geared for individuals seeking to learn about privacy standards in Canada as well as professionals responsible for the collection, storage, access and use of personal information. Participants may select courses based on their academic and professional backgrounds.</td>
</tr>
<tr>
<td>Learning Objectives</td>
</tr>
<tr>
<td>Upon completion of the program, participants will be able to:</td>
</tr>
<tr>
<td>• Describe the principles that govern privacy laws in Canada</td>
</tr>
<tr>
<td>• Identify the definitions and types of personal information within various legislative bodies and jurisdictions</td>
</tr>
<tr>
<td>• Create an operational plan for information access, use and security</td>
</tr>
<tr>
<td>• Comprehend the risks associated with the security of information</td>
</tr>
<tr>
<td>• Apply the tools and best practices for minimizing risk and privacy program management, such as Privacy by Design and Privacy Impact Assessments</td>
</tr>
<tr>
<td>• Assess the impact of emerging digital technologies for privacy and security management operations</td>
</tr>
<tr>
<td>The following objectives will be threaded within each course:</td>
</tr>
<tr>
<td>• Demonstrate an awareness of ethical practices and professional standards applicable to the fields of health and social service</td>
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</table>
- Exemplify the skills, attitudes, and behaviours required to work and collaborate with people and develop personal management skills
- Employ effective communication practices

### 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
There are no admission requirements as the program is open enrolment.

### Program Pre-requisites
In compliance with the Certificates and Diploma, admission policy from Undergraduate Council, students who wish to enter the programs should meet the following requirements based on their education and work experience:
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
2. English Language Proficiency requirements: Completion of TOEFL exam with minimum acceptable score of IBT: 86 overall with a minimum score of 20 on each of the four components (Reading, Writing, Speaking, Listening), valid for 2 years

### Program Completion Requirements
To qualify for a Certificate of Completion, students must complete a minimum of 30 hours of course content and evaluative components.

### 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.

### Student Evaluations (Grading Process)
Student evaluation will be based on application activities, individual or group projects, 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 Advanced Standing
Transfer credits are not accepted for this program.

**Listing of Courses**

<table>
<thead>
<tr>
<th>Course Name</th>
<th>Required/Elective</th>
<th>Unit Value</th>
<th>Term</th>
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</thead>
<tbody>
<tr>
<td>Foundations of Privacy</td>
<td>Elective</td>
<td>Non-credit</td>
<td>Fall 2020</td>
</tr>
</tbody>
</table>

Course Description:
Learn the foundations of confidentiality, privacy and security through an examination of standard privacy, information management, and governance principles within Canada. Explore different types of personal information and the regulatory laws and policies in place to protect and secure this information. An introduction to established practices and tools for privacy management will be presented.

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<tr>
<td>Privacy Program Development</td>
<td>Elective</td>
<td>Non-credit</td>
<td>Fall 2020</td>
</tr>
</tbody>
</table>

Course Description:
Discover how to research, develop and implement a privacy management program for your organization. Through an examination of recognized privacy governance practices, participants will begin to develop a plan appropriate for their organization. Focus is placed on a privacy program’s life cycle encompassing strategies for analysis, communication, technology and management of the plan to protect and secure personal information.

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<tr>
<td>Privacy and Security Risk Assessment</td>
<td>Elective</td>
<td>Non-credit</td>
<td>Fall 2020</td>
</tr>
</tbody>
</table>

Course Description:
Examine risk assessment strategies and techniques used to safeguard and protect information. This course builds upon the development of a privacy program to focus on specific tools (privacy impact assessment) and controls to maintain privacy and security measures. Responding and managing privacy and security incidents will be explored.

<table>
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</thead>
<tbody>
<tr>
<td>Technology and Privacy Management</td>
<td>Elective</td>
<td>Non-credit</td>
<td>Fall 2020</td>
</tr>
</tbody>
</table>

Course Description:
Review privacy and information in the context of evolving digital technologies. This course will explore the challenges facing privacy management programs as increasing amounts of information is collected, stored and used within digital tools and technology. Case study analysis will form the basis of the course as participants assess and strategize how to manage information as the technologies used for business operations grow and change.
Continuing Education – Certificate of Completion Program Proposal for Information Purposes

<table>
<thead>
<tr>
<th>Department &amp; Program Information (complete all fields)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Program Name:</td>
</tr>
<tr>
<td>Name of Representative:</td>
</tr>
<tr>
<td>Effective Date:</td>
</tr>
<tr>
<td>Date of Submission:</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Academic Merit (complete all fields; remove rows of items not required)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Program Overview</td>
</tr>
<tr>
<td>This program examines how individuals, governments and businesses plan, design and implement sustainable practices. Sustainability involves an encompassing approach as it impacts our environmental, economic and societal systems. Participants in this program will study best practices, strategies and developments for living and working sustainably. This professional development program is geared for individuals seeking to learn about sustainable practices, policies and leadership. Participants may select courses based on their academic and professional backgrounds.</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Learning Objectives</th>
</tr>
</thead>
<tbody>
<tr>
<td>Upon completion of the program, participants will be able to:</td>
</tr>
<tr>
<td>• Recognize the role of the individual, community and business within sustainable and environmental practices</td>
</tr>
<tr>
<td>• Identify key issues within the sustainable movement for locally and nationally</td>
</tr>
<tr>
<td>• Connect local and national issues within the global environmental actions</td>
</tr>
<tr>
<td>• Review primary policies and laws affecting sustainable practices</td>
</tr>
<tr>
<td>• Understand the relationship between business and consumers for sustainable action</td>
</tr>
<tr>
<td>• Examine practical tools, resources, strategies and techniques to develop sustainable living and working environments</td>
</tr>
<tr>
<td>• Explore and apply various design views/approaches responsible sustainable living and business development</td>
</tr>
<tr>
<td>The following objectives will be threaded within each course:</td>
</tr>
<tr>
<td>• Demonstrate an awareness of ethical practices and professional standards applicable to the fields of health and social service</td>
</tr>
</tbody>
</table>
- Exemplify the skills, attitudes, and behaviours required to work and collaborate with people and develop personal management skills
- Employ effective communication practices

### 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

There are no admission requirements as the program is open enrolment.

### Program Pre-requisites

In compliance with the Certificates and Diploma, admission policy from Undergraduate Council, students who wish to enter the programs should meet the following requirements based on their education and work experience:

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
2. English Language Proficiency requirements: Completion of TOEFL exam with minimum acceptable score of IBT: 86 overall with a minimum score of 20 on each of the four components (Reading, Writing, Speaking, Listening), valid for 2 years

### Program Completion Requirements

To qualify for a Certificate of Completion, students must complete a minimum of 30 hours of course content and evaluative components.

### 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.

### Student Evaluations (Grading Process)

Student evaluation will be based on application activities, individual or group projects, 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 Advanced Standing
Transfer credits are not accepted for this program.

<table>
<thead>
<tr>
<th>Listing of Courses</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Course Name</strong></td>
</tr>
<tr>
<td>Principles of Sustainability</td>
</tr>
</tbody>
</table>

Course Description:
This course provides the foundation for understanding sustainability on a global scale. Focus is placed on defining sustainability and sustainable living along with comprehending environmental system. Students will begin a whole-systems examination of how individuals, communities and business interact with the environment and the primary consequences of these interactions.

<table>
<thead>
<tr>
<th>Course Name</th>
<th>Required/Elective</th>
<th>Unit Value</th>
<th>Term</th>
</tr>
</thead>
<tbody>
<tr>
<td>Practices for Sustainable Living</td>
<td>Elective</td>
<td>Non-credit</td>
<td>Fall 2020</td>
</tr>
</tbody>
</table>

Course Description:
Building on the principles of sustainability, this course presents the primary environmental, economic and societal issues facing individuals and local community groups seeking sustainable development and practice. The process of developing strategies and action plans for sustainable living will be examined in terms of best practices and policies.

<table>
<thead>
<tr>
<th>Course Name</th>
<th>Required/Elective</th>
<th>Unit Value</th>
<th>Term</th>
</tr>
</thead>
<tbody>
<tr>
<td>Practices for Sustainable Business</td>
<td>Elective</td>
<td>Non-credit</td>
<td>Fall 2020</td>
</tr>
</tbody>
</table>

Course Description:
Businesses have a role in the development of sustainability within their communities. This course focuses on how business can collaborate, plan, develop and execute sustainable actions. Best practices in sustainable business leadership will be examined.

<table>
<thead>
<tr>
<th>Course Name</th>
<th>Required/Elective</th>
<th>Unit Value</th>
<th>Term</th>
</tr>
</thead>
<tbody>
<tr>
<td>Responsible Production and Consumption</td>
<td>Elective</td>
<td>Non-credit</td>
<td>Fall 2020</td>
</tr>
</tbody>
</table>

Course Description:
Consumers and product producers have a shared responsibility within sustainability. This course will explore various collaborative theories and approaches to bring together these two groups for effective design and strategic action.
DATE: March-31-20  
TO: Certificate & Diploma Committee  
FROM: Lorraine Carter, Director, Continuing Education  
RE: Closure of Health Information Systems Certificate of Completion (For Information Purposes)  

Effective May 1, 2020, Continuing Education plans to close the Health Information Systems (HIS) Certificate of Completion program. The program was developed in 2013 as a professional development program for the purpose of offering health informatics courses for health information management professionals in Canada.

The decision to close the program is based on enrolment data as the number of participants has declined over the past two years. Furthermore, upcoming changes to the health information management education requirements and professional development requirements, the HIS program content is included in other certificate and diploma programs.

Students currently enrolled in the HIS program will be able to complete their existing program up to December 31, 2020.

Sincerely,

Lorraine Carter  
Director, Continuing Education
DATE: March-31-20
TO: Certificate & Diploma Committee
FROM: Lorraine Carter, Director, McMaster Continuing Education
RE: Closure of Health and Social Services Certificates of Completion

-----------------------------------------------------------

Effective May 1, 2020, Continuing Education plans to close six Certificate of Completion programs housed within its Health and Social Service program. The programs are as follows:

- Evaluation and Data Analytics for the Health Sector
- Foundations in Canadian Health
- Pathophysiology & Epidemiology
- Principles of Health Information
- Workplace Health & Wellness
- Fundamentals of Addiction for Allied Health Professionals

The closures are based on recent enrolment data.

By contrast, the Health and Social Service Certificate of Completion and Health and Social Service Certificates will remain open. Students currently enrolled in any of the listed Certificates of Completion will be able to complete their programs up to December 31, 2020. Students will also have the option to change their programs to either the Health and Social Service Certificate of Completion or Health and Social Services Certificate program.

Sincerely,

Lorraine Carter
Director, Continuing Education
**Department & Program Information**

<table>
<thead>
<tr>
<th>Program Name:</th>
<th>Connected Health and the Internet of Things</th>
</tr>
</thead>
<tbody>
<tr>
<td>Credential:</td>
<td>Certificate of Attendance (co-branded with National Institutes of Health Informatics (NIHI) and Continuing Education)</td>
</tr>
<tr>
<td>Name of Representative:</td>
<td>Nancy McQuigge</td>
</tr>
<tr>
<td>Effective Date:</td>
<td>May 1, 2020</td>
</tr>
<tr>
<td>Date of Submission:</td>
<td>March 31, 2020</td>
</tr>
</tbody>
</table>

**Academic Merit**

<table>
<thead>
<tr>
<th>Program Overview</th>
<th>The program is offered in partnership with McMaster Continuing Education (CE) and the National Institutes of Health Informatics (NIHI). NIHI provides professional development training for health care professionals across Canada. This program adds to the existing partner programs with Continuing Education and NIHI. NIHI and CE will offer a 10-hour program in Connected Health and the Internet of Things. Participants will complete their training with NIHI, and, upon completion of a specified number of hours and coursework, McMaster CE will issue a Certificate of Attendance.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Learning Objectives</td>
<td>Learning objectives for the program are established by NIHI. With ever-increasing pressure to deliver high-quality care to growing patient populations, healthcare organizations (both public and private) are tasked with finding innovative ways to improve the accessibility, efficiency, and cost of healthcare delivery while balancing the evolving lifestyle preferences and needs of both ageing and digital generations. The purpose of this program is to introduce participants to the role of connected health applications such as the Internet of Things (IoT), Telehealth, remote care, and disease and lifestyle management in facilitating more efficient and effective care and supporting the shift from hospital to community-based care. Program sessions will focus on exploring the variety of connected health technologies and solutions currently in use or emerging in the healthcare industry and will provide tools and</td>
</tr>
</tbody>
</table>
best practices for their successful adoption, integration, deployment, and monitoring in clinical practice. Special attention will be paid to the unique operational and privacy and security implications of these technologies, and strategies for risk mitigation and avoidance of legal and ethical issues will be discussed.

This program is for both clinical, operational, and technical senior staff and for executives who are considering or planning to integrate connected health solutions into their healthcare organizations.

Learning Objectives

- Understand the variety of applications and benefits connected technologies can bring to patients and healthcare providers.
- Equip participants with the knowledge and tools required to develop and execute strategies for adoption and integration of connected technologies in their own healthcare organizations.
- Enable participants to develop, measure, and monitor Key Performance Indicators related to the safe and effective use of connected health technologies.
- Apply best practices to ensure the security, privacy, and ethical use of connected health devices and data within regulated healthcare environments.

Meeting Learning Objectives

The program will use a series of modules/sessions to achieve the stated program objectives. Individual modules/session objectives are 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 Completion Requirements

To receive a Certificate of Attendance, participants must complete a minimum of 10 hours of program content offered by NIHI. Participants will submit a series of evaluative components upon the completion of the modules/sessions.

Program Delivery Format

Sessions will be delivered online using a combination of synchronous and asynchronous activities.

Student Evaluations (Grading Process)

Final grade for participants will be “pass/fail”.

Course Evaluation

NIHI will distribute a post-course evaluation for participants to assess content, delivery, materials, and facilitation.
Course Instruction Facilitators are selected by NIHI from a pool of qualified professionals. Selection is based on academic background and/or experience within the program area.

<table>
<thead>
<tr>
<th>Listing of Courses /Modules</th>
</tr>
</thead>
<tbody>
<tr>
<td>Session 1</td>
</tr>
<tr>
<td>Session 2</td>
</tr>
<tr>
<td>Session 3</td>
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<tr>
<td>Session 4</td>
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<td>Session 5</td>
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<td>Session 6</td>
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<td>Session 7</td>
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<tr>
<td>Session 8</td>
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<tr>
<td>Session 9</td>
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<tr>
<td>Session 10</td>
</tr>
</tbody>
</table>
## McMaster University: Sessional Dates 2021-2022

### Fall and Winter Terms 2021-2022

<table>
<thead>
<tr>
<th></th>
<th>Fall Term (62 days)</th>
<th>Winter Term (62 days)</th>
<th>Courses Spanning both Terms (124 days)</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Enrolment begins</strong></td>
<td></td>
<td></td>
<td>To be announced</td>
</tr>
<tr>
<td><strong>Classes begin</strong></td>
<td>Tuesday, September 7</td>
<td>Thursday, January 6</td>
<td>Tuesday, September 7</td>
</tr>
<tr>
<td><strong>Last day for enrolment and adding or dropping courses</strong></td>
<td>Wednesday, September 15</td>
<td>Friday, January 14</td>
<td>Wednesday, September 15</td>
</tr>
<tr>
<td><strong>Mid-Term Recess(es)</strong></td>
<td>Monday, October 11 to Sunday, October 17</td>
<td>Monday, February 21 to Sunday, February 27</td>
<td>Monday, October 11 to Sunday, October 17 and, Monday, February 21 to Sunday, February 27</td>
</tr>
<tr>
<td><strong>Last day for withdrawing from courses without failure by default</strong></td>
<td>Friday, November 19</td>
<td>Friday, March 18</td>
<td>Friday, March 18</td>
</tr>
<tr>
<td><strong>Test and Examination Restriction</strong></td>
<td>Thursday, December 2 to Wednesday, December 8</td>
<td>Monday, April 4 to Monday, April 11</td>
<td>Monday, April 4 to Monday, April 11</td>
</tr>
<tr>
<td><strong>Classes end</strong></td>
<td>Wednesday, December 8</td>
<td>Friday, April 8</td>
<td>Friday, April 8</td>
</tr>
<tr>
<td><strong>Mid-Term Tests Level (I)</strong></td>
<td>--</td>
<td>--</td>
<td>Thursday, December 9 to Wednesday, December 22</td>
</tr>
<tr>
<td><strong>Good Friday: No classes or examinations</strong></td>
<td>--</td>
<td>Friday, April 15</td>
<td>Friday, April 15</td>
</tr>
<tr>
<td><strong>Final Examinations</strong></td>
<td>Thursday, December 9 to Wednesday, December 22</td>
<td>Tuesday, April 12 to Thursday, April 28</td>
<td>Tuesday, April 12 to Thursday, April 28</td>
</tr>
<tr>
<td><strong>Deferred examinations</strong></td>
<td>Tuesday, February 21 to Friday, February 25</td>
<td>Monday, June 20 to Friday, June 24</td>
<td>Monday, June 20 to Friday, June 24</td>
</tr>
</tbody>
</table>
### 2022 Spring/Summer Term

<table>
<thead>
<tr>
<th></th>
<th>Spring Session (34 days)</th>
<th>Summer Session (33 days)</th>
<th>Full-Term Courses (67 days)</th>
<th>Intersession</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Classes begin</strong></td>
<td>Monday, May 2</td>
<td>Monday, June 20</td>
<td>Monday, May 2</td>
<td>Monday, May 2</td>
</tr>
<tr>
<td><strong>Last day for enrolment and adding or dropping courses (drop/add)</strong></td>
<td>Monday, May 9</td>
<td>Monday, June 27</td>
<td>Monday, May 9</td>
<td>Monday, May 9</td>
</tr>
<tr>
<td><strong>Victoria Day: No classes</strong></td>
<td>Monday, May 23</td>
<td>--</td>
<td>Monday, May 23</td>
<td>Monday, May 23</td>
</tr>
<tr>
<td><strong>Canada Day: No classes</strong></td>
<td>--</td>
<td>Friday, July 1</td>
<td>Friday, July 1</td>
<td>-</td>
</tr>
<tr>
<td><strong>Last day to withdraw from courses without failure by default</strong></td>
<td>Wednesday, June 1</td>
<td>Wednesday, July 20</td>
<td>Wednesday, July 20</td>
<td>Wednesday, May 13</td>
</tr>
<tr>
<td><strong>Civic Holiday: No classes</strong></td>
<td>--</td>
<td>Monday, August 1</td>
<td>Monday, August 1</td>
<td>-</td>
</tr>
<tr>
<td><strong>Classes end</strong></td>
<td>Friday, June 17</td>
<td>Friday, August 5</td>
<td>Friday, August 5</td>
<td>Friday, May 27</td>
</tr>
<tr>
<td><strong>Final Examinations</strong></td>
<td></td>
<td></td>
<td><em>As arranged by instructor in class time</em></td>
<td></td>
</tr>
<tr>
<td><strong>Deferred Examinations</strong></td>
<td></td>
<td></td>
<td>Tuesday, October 11 to Friday, October 14, 2022</td>
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</tr>
</tbody>
</table>
Microcredentials: Innovation in Teaching and Learning in the Faculty of Engineering

Version of February 13, 2020

BACKGROUND

The Faculty of Engineering at McMaster University has rapidly assumed leadership in developing earned microcredentials and built a framework for digital credential delivery through its collaboration with the international Digital Credentials Consortium.

Since a clear definition of the microcredential is still evolving at the University level, it is timely for the Faculty to define, develop and lead early implementations that can be global exemplars and adopted worldwide. Although McMaster Engineering faculty and staff members have proposed microcredentials, these do not yet adhere to a clear structure, nor have the fiscal resources to support their propositions been identified.

This white paper describes how McMaster Engineering will enable microcredential innovation for teachers, learners, employers and policymakers. We believe that microcredentials provide a means to improve and verify the learning and skills that we provide to learners, they are of value to employers who can recognize the framework through which they are earned, they enhance engagement with our communities, and add value to the training provided through collaborative research.

Microcredentials also address the Faculty’s strategic priorities. They offer the opportunity to reorganize curricular design to enhance learning and learner outcomes. They verify partnerships and the value of engagement with our community by authenticating activities that promote societal wellbeing, social innovation and entrepreneurship. They improve research outcomes, training and innovation through learning. They enhance the professional development of learners by providing them with verifiable co-curricular content that can be learned at a flexible pace.

DEFINITIONS

A microcredential is an issuable micro-certificate that verifies a competency acquired through a single learning experience or a collection of learning experiences and it has an intrinsic value that is readily recognized in the public domain. Whether the learning experience leads to a technical competency or a professional skill, the duration of instruction must be sufficient to allow the learner to acquire the competency or skill and include a robust assessment of that learning.

A microcredential may be issued alone or it can be stacked with other microcredentials in a thematic series. It can also be part of a more complex arrangement that a learner can use for academic credit, where the microcredential is awarded and stacked towards a more substantive

---

1 In the Canadian and Ontario contexts, microcredentials can be embedded to verify learning offered through training grants such as NSERC CREATE, NSERC Alliance, and Ontario Research Fund.
2 Provided by the Faculty of Engineering for the purpose of focusing the discussion on the need for microcredentials and shall be updated at such time that a Senate-approved definition is available.
credential like an academic certificate, certificate of completion, diploma or degree. There is however an archaic vein of thought, which must be strenuously countered, that an institution may only issue degrees, diplomas or certificates as credentials.

A course taken for academic credit represents a unit of learning that may not be issued as a credential alone. Hence, the first important element of a microcredential is that it should be created only for a body of learning that has essential value on its own merit and is publicly recognizable.

As a micro-certificate, a microcredential represents the smallest unit of learning through which a learner acquires a competency or meets an intended learning objective. This is the second important element of a micro-credential, i.e., it is narrow in scope.

In contrast, an academic certificate or non-academic certificate of completion is an issued credential representing a more coherent program of study that provides the learner with multiple competencies and addresses many learning objectives. Such a certificate can be issued alone, or it can be complementary to a degree program.

Similarly, a degree or diploma is a credential issued for a program of study based on a collection of program learning outcomes that can be readily audited and are intended to develop several competencies so that the learner can master a broad subject area. Mastery in this case is identified by the successful accumulation of enough unit credits in the program of study.\(^3\)

Therefore, we contend that a microcredential should not exceed one unit (or its equivalent in content) since it would otherwise cover learning experiences that are too substantive.

A microcredential is further defined as being either academic or non-academic, depending upon whether or not the learning will be denoted on an academic transcript.\(^4\) An academic microcredential may be issued as a credential and also appear on a transcript, whereas a non-academic microcredential may only be issued separate from the transcript.

**An academic microcredential** verifies learning that includes a suitable evaluation of the acquisition of a competency that merits disclosure on a student’s transcript. As noted above, a microcredential is equivalent to a one-unit credit earned in recognition of 9-12 hours of learning.\(^5\) While other credit values may be assigned for a microcredential, these should not exceed 1.5-unit credits. Passing or failing the assessment has the same impact on student progression as for

---

3 In North America, the unit credits for academic credit courses in degree or diploma programs are typically provided in blocks of three or six units, though these credits can assume a single unit or any other unit collection. At McMaster University, unit credits can be provided through one, two, three or any other unit level according to the [Senate Policy on Diplomas and Certificates](https://www.mcmaster.ca/senate/policies/diplomas-and-certificates).  
4 This definition is consistent with the terminology of North American universities, e.g., see the McMaster University [Senate Policy on Diplomas and Certificates](https://www.mcmaster.ca/senate/policies/diplomas-and-certificates).  
5 An example of a single unit of learning is three hours of lectures over 3-4 weeks.
existing courses or milestones. An earned microcredential can be stacked in the same manner as a course taken towards a degree.\(^6\)

**A non-academic microcredential** verifies learning that develops a relevant competency or skill, which merits recognition but is typically not disclosed on a student’s transcript.\(^7\) The learning should be consistent with 9-12 hours of classroom learning or equivalent and include an assessment for meeting a learning outcome.\(^8\)

**STACKABILITY**

While a microcredential has standalone value for the learner, employers, policymakers and the public, there is value in combining multiple microcredentials to represent a program of study not recognized by a degree or diploma. This combination of microcredentials is referred to as ‘stacking’.

Example: The *McMaster Graduate Certificate* is offered for learning that is eligible for inclusion on the learner’s transcript. This credential, which combines courses and academic microcredentials, is intended for a program of study that is complementary to a degree. The certificate must include three graduate level courses that are eligible for academic credit, where all of these courses may overlap with those taken towards a graduate degree.

Example: The *McMaster Certificate of Completion* is a credential earned for a non-academic program of study. It verifies that the learner has completed a course or a program at McMaster that does not have the status of an academic program. A Certificate of Completion can be issued when a course or program includes the equivalent of a minimum of 30 instructor contact hours and the learning is suitably assessed.

\(^6\) Typically, these activities must be approved by the appropriate curriculum and policy committee of the Faculty and its corresponding Council or equivalent and are overseen by the Registrar.

\(^7\) At McMaster University, this recognition is provided separately by the Faculty rather than the Office of the Registrar on a students’ academic transcript.

\(^8\) At McMaster University, approval for providing credit for such a learning activity is granted by the Dean of the Faculty. Depending on the scope of the learning.
GOVERNANCE AND DELIVERY FRAMEWORK

Administrative oversight for microcredentials, both for their creation and delivery, offered through the McMaster University Faculty of Engineering will be through the Academy for Microcredentials and External Learning. This unit will report to the Dean of Engineering who may delegate joint responsibility for oversight, for instance, to the Associate Dean (Academic) and Associate Dean (Graduate Studies).

The Academy will be guided by a Faculty committee that will review and approve new microcredentials, where it has the authority to do so. It will have access to funds, released at the discretion of the Director for Finance and Administration upon approval by the Dean, for assigning sessional instructors, teaching assistants, and faculty members on overload (with proper approvals) to offer and assess learning activities, provide administration, marketing and recruitment services, and issue the microcredentials under its purview.

The Academy is intended to become financially self-sufficient within three years by collecting fees from learners towards non-academic microcredentials and for academic microcredentials that are not yet offered by the University Registrar.

The Academy for Microcredentials and External Learning will be governed and function as follows.

- Governance, microcredit development and approval will be governed through the Microcredentials Committee that will function as a Faculty committee and provide an annual report to the Dean. It will consist of five faculty members representing the School of Engineering and Applied Science (SEAS) and Walter G. Booth School of Engineering Practice and Technology (SEPT). One of these five members will serve as an equity champion, as is the norm for all Faculty of Engineering committees. The committee will also include the Director of Finance and Administration, Assistant Dean (studies) and Director of Outreach and Engagement, or their individual delegates, as advisors and observers. The committee will be co-chaired by the Associate Dean (Academic) and the Associate Dean (Graduate Studies) as delegates of the Dean.

The Microcredentials Committee will consider proposals for microcredentials that might be suitable for development and make recommendations to the Dean whether these efforts should be supported. Once the framework for it has been developed, all microcredentials are submitted to the Academy Office. Those identified as academic microcredentials will be forwarded to the Secretariat (for undergraduate level) or the School of Graduate Studies (for graduate level) and seek approval at the appropriate Council. All proposals for non-academic microcredentials will be considered for approval by the Microcredentials Committee which will be reviewing its intended learning outcomes, content, method of assessment, market feasibility and competitor analysis. Forms and procedures for non-academic microcredentials will be developed in a manner similar to those used by Faculty committees to encapsulate necessary information. All non-academic microcredentials approved by the Microcredentials
Committee will be forwarded for approval at Dean’s Council and finally at a meeting of the Faculty of Engineering.

Flow chart showing the intended progression of a proposal up to the point of approval.

- **Learning delivery, learner enrollment and tuition** will be based on full cost recovery for non-academic microcredentials. Academic microcredentials will be charged consistent with the appropriate credit unit. The tuition will be approved by the Fees committee, updated by the Director of Finance and Administration who will serve as the Dean’s delegate.

- **Program delivery** will be encouraged online, but with instructor-learner and learner-learner contact conducted as appropriate. Secure online evaluations will be explored. The Faculty will consider establishing a Moodle to offer the asynchronous online content, while also using campus resources such as the Echo360 studios for lecture capture and classrooms for engagement with learners. In-class delivery may be appropriate for premium fee events or when there is perceived value outside of a revenue stream.
• **Assessment of learning** is mandatory and will correspond to the intended learning outcomes.

• **Credentials** for academic learning will be submitted by the Office for review and processing by the Assistant Dean (Studies). Non-academic microcredentials and stackable certificates will be issued by the Office, preferably in digital form.

• **Learning** designed for companies will be approved by the Associate Dean (Research and External Affairs) and learning for delivery to traditional students will be approved by the Associate Dean (Academic) or Associate Dean (Graduate Studies) as appropriate.
<table>
<thead>
<tr>
<th>Sponsor</th>
<th>Type</th>
<th>Title</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Associate Dean (GS)</td>
<td>Academic</td>
<td>Graduate Communications</td>
<td>Three 1-unit modules to be developed with SEPT.</td>
</tr>
<tr>
<td>Churchill/Grand Challenge</td>
<td>Co-curricular</td>
<td>McMaster Grand Challenge Scholar</td>
<td>Five competencies, three levels, already developed. No tuition, but opportunity through ENGINEER 3CX03</td>
</tr>
<tr>
<td>Challenge Scholars Program</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Ansilio and Churchill/MacChangers</td>
<td>Co-curricular</td>
<td>MacChangers</td>
<td>Already developed. No tuition due to intrinsic value for community engagement.</td>
</tr>
<tr>
<td>Veldhuis</td>
<td>Non-academic</td>
<td>TBA</td>
<td></td>
</tr>
<tr>
<td>Emadi</td>
<td>Non-academic</td>
<td>TBA</td>
<td></td>
</tr>
<tr>
<td>Knights</td>
<td>Non-academic</td>
<td>TBA</td>
<td></td>
</tr>
<tr>
<td>Novog</td>
<td>Non-academic</td>
<td>TBA</td>
<td></td>
</tr>
<tr>
<td>Leistner/ECCS</td>
<td>Non-academic</td>
<td>Equity, Diversity &amp; Inclusion in the Workplace</td>
<td>Seven 1-unit modules, 4 mandatory, 3 elective modules. To become requirement for each co-op work term.</td>
</tr>
<tr>
<td>Lefevre-Schlick/SEPT</td>
<td>Non-academic</td>
<td>Circular economy and carbon mitigation</td>
<td>3 microcredentials (circular economy, carbon mitigation, transitional leadership) which stack up to a single certificate of completion</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Advanced manufacturing and cyber-physical systems</td>
<td>4 micro credentials (two on advanced manufacturing, 2 on cyber-physical systems) which stack up to a single certificate of completion</td>
</tr>
<tr>
<td>Operations leader &amp; management</td>
<td>5 micro credentials (TBD) which stack up to a single certificate of completion</td>
<td></td>
<td></td>
</tr>
<tr>
<td>--------------------------------</td>
<td>--------------------------------------------------------------------------------</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Smart city</td>
<td>x micro credentials (infrastructure, mobility solutions, TBD) which stack up to a single certificate of completion</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Healthcare</td>
<td>x micro credentials (TBD) which stack up to a single certificate of completion</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Project total of early-start tuition-based microcredentials: 10+
IMPLEMENTATION PLAN AND REVENUE

A three-year pilot is planned with a projected cohort of 150 learners who will earn one or more of 5 microcredentials during the first year, growing by Year 3 to 450 learners earning one or more of 15 microcredentials. The revenue provided by these learners will differ depending on whether a microcredential is academic or non-academic.

Academic Microcredentials
The activity leader is the person or group proposing the microcredential to the Academy.

Following approval from the Academy to proceed, the activity leader will discuss the activity with academic leader, e.g., chair or director, of the appropriate academic unit that will deliver it. If financial resources are required for development before the proposal is submitted to the university’s curriculum committee(s), these may be sought from the academic unit and in some cases from the Faculty.

Microcredentials intended for inclusion on a student’s transcript will be organized and delivered by the appropriate academic unit, such as a department, school, or program reporting to the Associate Dean (Academic). Once verified by the unit, the Academy will issue the digital credential but collect no fee from the learner for doing so. An academic unit may however be charged a service fee by the Academy for services required beyond microcredential issuance.

Microcredentials requiring the full services of the Academy shall charge the appropriate Academic Unit at the rate of a non-academic microcredential.

Non-Academic Microcredentials
The activity leader is the person or group proposing the microcredential.

While a microcredential is being considered, the activity leader may request the Microcredential Committee to approve a development loan subject to further approval by the Dean or a delegate. Therefore, the Academy is expected to initiate and grow a development fund. We anticipate a fund value of $100,000 for the first two years and it is anticipated that should increase in later years with revenue growth to the Academy. Activity leaders will be encouraged to seek external grants or sponsorship by making use of external funding opportunities to develop their microcredentials.

The activity leader is responsible for business development for microcredentials. The Academy may also assist in business development for an additional fee. Business development refers to client discovery, marketing, and possible content revision according to market and learner needs.

A preliminary estimate of reasonable tuition for a non-academic microcredential provides a value between $1,000-$2,000 based on the scope of the activity. This tuition is equivalent to the fees for many professional development workshops and training events.
The Academy will handle the scheduling, admissions, learner-related inquiries and those from potential partner organizations and institutions, record-keeping, hosting of website content, and issuing of microcredentials. The activity leader will be charged a flat delivery fee of $20,000 per microcredential each time the learning activity is delivered. Costs for delivering a microcredential off-campus and remuneration for instructors or guest lecturers will be the responsibility of the activity leader and not the Academy.

### 3-YEAR OPERATING BUDGET

#### Year 1 Expense
- Program Administrator, Grade 8: $85,000
- Office space, 120 sq ft: $5,000
- Centre costs (Est. at 10% of revenue): $10,000
- Office furniture, phone, computer: $10,000
- Development fund: $100,000
- Website development/licenses: $30,000
- Operating supplies: $5,000
- **Total**: $245,000

#### Year 1 Revenue
- **$100,000**

#### Year 2 Expense
- Program Administrator, Grade 8: $85,000
- Office space, 120 sq ft: $5,000
- Centre costs (Est. at 10% of revenue): $20,000
- Office furniture, phone, computer: $1,000
- Development fund: $100,000
- Website development/licenses: $13,000
- Operating supplies: $5,000
- **Total**: $229,000

#### Year 2 Revenue
- **$200,000**

#### Year 3 Expense
- Program Administrator, Grade 8: $85,000
- Office space, 120 sq ft: $5,000
- Centre costs (Est. at 10% of revenue): $30,000
- Office furniture, phone, computer: $1,000
- Development fund: $100,000
- Website development/licenses: $16,000
- Operating supplies: $5,000
- **Total**: $243,000

#### Year 3 Revenue
- **$300,000**
(If the applications are successful, $100K from the Skills Catalyst grant and $50K from the RapidSkills grant will be applied as start-up revenue.)

IMPLEMENTATION PLAN – ACTIVITES PRIOR TO FIRST YEAR

University
- PVP
- Undergraduate Council/Graduate Council
- Fees/Planning and Resources Committee/Board
- Senate

Faculty
- Faculty approval
- Bylaw for microcredential committee
- Seek external grant opportunities
- Build up resources through liaison with MacPherson
- establish industrial/government advisory board

Academy
- Hire administrator, 1 year contract
- prepare office
- establish mission statement and vision
- website/servers for digital credentials
- Merge content with Fireball academy