



UNIVERSITY PLANNING COMMITTEE
Wednesday, April 15, 2020 at 10:30 AM
Zoom

AGENDA

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OPEN SESSION

- 1. MINUTES OF PREVIOUS MEETING – MARCH 18, 2020 (OPEN SESSION)**
- 2. CHAIR'S COMMENTS AND UPDATE**
- 3. BUSINESS ARISING**
- 4. REPORT FROM UNDERGRADUATE COUNCIL**
[Undergraduate Council Report \(APPROVAL\)](#)
- 5. OTHER BUSINESS**

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REPORT TO THE UNIVERSITY PLANNING COMMITTEE
from the
UNDERGRADUATE COUNCIL

a. Academy for Microcredentials and External Learning

At its April 14, 2020 meeting, the Undergraduate Council will review for approval, a proposal to establish the *Academy for Microcredentials and External Learning*. Details of the proposal are contained within Attachment I of the circulated report.

It is now recommended,

that the University Planning Committee approve, for recommendation to Senate, the establishment of the *Academy for Microcredentials and External Learning*, as recommended by the Faculty of Engineering and set out in the attached.

University Planning Committee: FOR APPROVAL
April 15, 2020

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 research¹.

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.

DEFINITIONS²

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](#).

⁴ This definition is consistent with the terminology of North American universities, e.g., see the McMaster University [Senate Policy on 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.

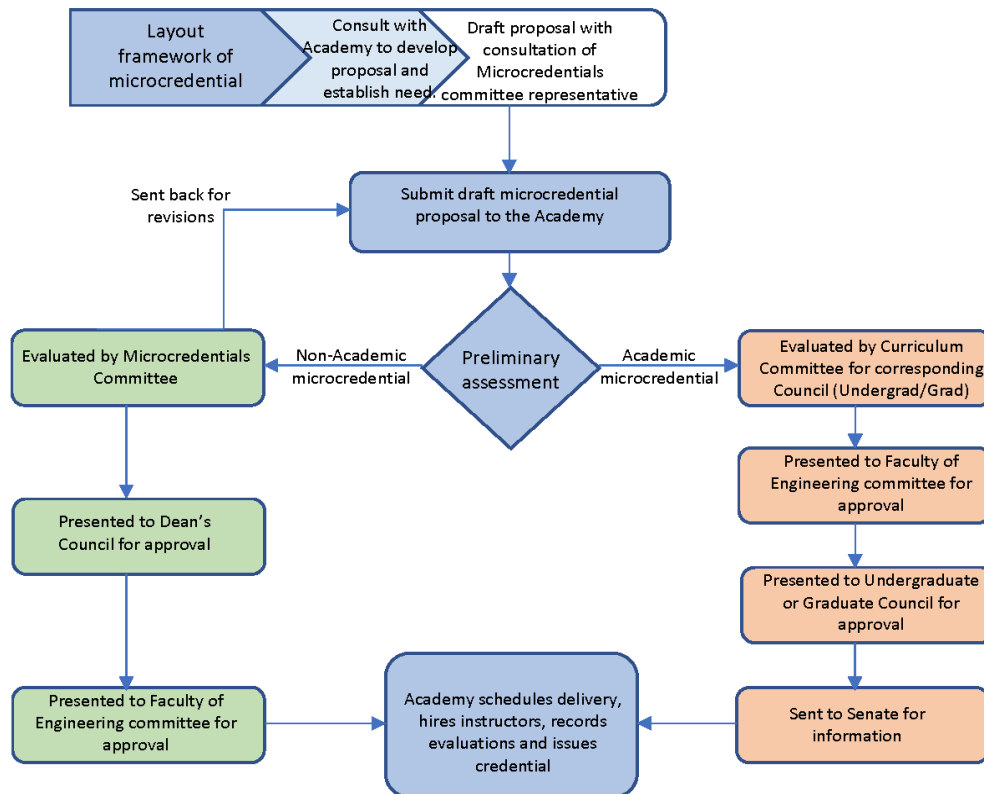
The *Academy for Microcredentials and External Learning* will be governed and function as follows.

- 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.

POTENTIAL MICROCREDENTIALS TO BE ISSUED BY THE FACULTY (GROUPED BY SPONSOR)

Sponsor	Type	Title	Description
Associate Dean (GS)	Academic	Graduate Communications	Three 1-unit modules to be developed with SEPT.
Churchill/Grand Challenge Scholars Program	Co-curricular	McMaster Grand Challenge Scholar	Five competencies, three levels, already developed. No tuition, but opportunity through ENGINEER 3CX03
Ansilio and Churchill/MacChangers	Co-curricular community engaged learning	MacChangers	Already developed. No tuition due to intrinsic value for community engagement.
Veldhuis	Non-academic	TBA	
Emadi	Non-academic	TBA	
Knights	Non-academic	TBA	
Novog	Non-academic	TBA	
Leistner/ECCS	Non-academic	Equity, Diversity & Inclusion in the Workplace	Seven 1-unit modules, 4 mandatory, 3 elective modules. To become requirement for each co-op work term.
Lefevre-Schlick/SEPT	Non-academic	Circular economy and carbon mitigation	3 microcredentials (circular economy, carbon mitigation, transitional leadership) which stack up to a single certificate of completion
		Advanced manufacturing and cyber-physical systems	4 micro credentials (two on advanced manufacturing, 2 on cyber-physical systems) which stack up to a single certificate of completion

		Operations leader & management	5 micro credentials (TBD) which stack up to a single certificate of completion
		Smart city	x micro credentials (infrastructure, mobility solutions, TBD) which stack up to a single certificate of completion
		Healthcare	x micro credentials (TBD) which stack up to a single certificate of completion

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
<i>Development fund</i>	\$100,000
Website development/licenses	\$30,000
Operating supplies	<u>\$5,000</u>
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
<i>Development fund</i>	\$100,000
Website development/licenses	\$13,000
Operating supplies	<u>\$5,000</u>
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
<i>Development fund</i>	\$100,000
Website development/licenses	\$16,000
Operating supplies	<u>\$5,000</u>
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 – ACTIVITIES PRIOR TO FIRST YEAR

