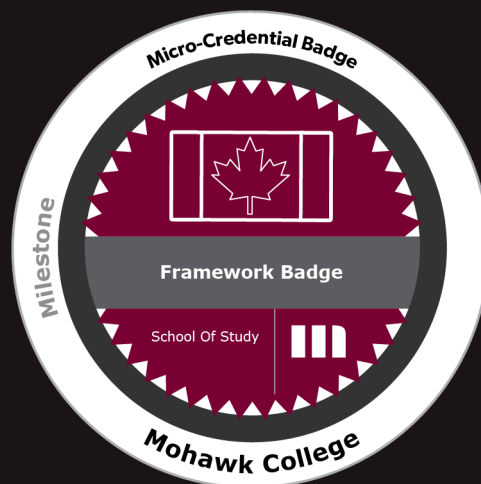




# MOHAWK MICRO-CREDENTIAL FRAMEWORK



# Mohawk College Micro-credential Framework

Mohawk College has developed this Micro-credential Framework as a resource to support the College’s larger strategy to develop, plan, and deliver micro-credentials in a purposeful and strategic way. This Framework was developed with input from a cross college representational Steering Committee.

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# Important Definitions

The following terms have been defined to support awareness and understanding of learning and curriculum development in the micro-credential space. Micro-credential:

A Micro-credential is a flexible and granular form of post-secondary education or training related to specific skills and competencies that are developed and offered in a partnership between one or more post-secondary institutions and one or more employers, may be tailored towards a specific need or may be stacked together, with the opportunity to track towards a larger recognized credential or certificate (Ministry of Colleges and Universities & The Ministry of Labour Training and Skills Development, 2021).

## Micro-credential

A micro-credential is a certification of assessed competencies that is additional, alternate, complementary to, or a component of a formal qualification (Colleges and Institutes Canada, n.d.).

## Stackability

Badges and micro-credentials can combine to create depth and breadth of knowledge. In doing so, learning is laddered and a pathway to increased recognition is created.

## Badge

The term badge is used to recognize the achievement competencies as defined through specific learning outcomes. There are two discrete types of badges, as described below.

## Digital Badge

The digital representation for micro-recognition. A digital badge is used to represent a badge, micro-certificate, or micro-credential. Digital Badges are available and shareable online.

## Open Badge

Open badges address issues of identity, verification, validation, and ongoing maintenance of badges. Digital Badges using the open framework include metadata that is hardcoded into the badge itself such as badge name, description, criteria, issuer, evidence, date issued, expiry date, standards, and tags.

## Competency

A *general* statement that describes the desired knowledge, skills, and behaviors of a student graduating from a program (or completing a course). Competencies commonly define the applied skills and knowledge that enable people to successfully perform in professional, educational, and other life contexts (Gosselin, D., n.d.).

## Learning Outcome

A Learning Outcome (LO) is a *measurable, observable, and specific* statement that clearly indicates what a student should know, feel/value, and be able to do as a result of learning (Mohawk College, n.d.).

## Principles

Principles serve as the foundation for which micro-credentials will be considered as an appropriate method of academic programming to meet the needs of the learners and communities that Mohawk College serves.

- Micro-credentials can be a complement to traditional credentials (certificate, diploma, degree or post-graduate certificate) or stand alone.
- Micro-credentials are subject to a robust and rigorous quality assurance process.
- Micro-credentials should represent competencies identified by employers/industry sectors to meet employer needs.
- Micro-credentials may provide clear and seamless pathways across different credentials (both non-credit and credit) and may be stackable.
- Micro-credentials are based on assessed proficiency of a competency, not on time spent learning.
- Micro-credentials are secure, trackable, portable facilitating documentation of competencies in students' academic records.
- Micro-credentials are to follow institutional approval processes.

## Micro-Credential Intent and Purpose

Micro-credentials are short competency-based learning opportunities that are complimentary to other credentials in the postsecondary sector (i.e. Certificates, Diplomas and Degrees) and benchmarked in one or more of the following ways:

- creating pathways into and between existing programs;
- recognizing specializations or streams within existing programs;
- creating or enhancing skills and competencies that lead to employment and are in demand by industry or community partners;
- upskilling existing employees across diverse sectors and employers.

Micro-Credential development will be done in consultation/partnership with industry and/or employers, as appropriate.

### Competency based

Micro-credentials will validate adaptable, transferrable, or in-demand skills.

### Extensibility

Micro-credentials will be designed to facilitate continuous pathway for lifelong learning, where possible.

# Framework

Elements of the Micro-credential Framework serve as a guide and checklist for the design and development phases of micro-credentials.

## □ Collaboration

Micro-credentials will be developed in partnership with industry, employers, community, other postsecondary institutions, or other Mohawk College program areas where relevant.

## □ Transparency

Outcomes will be visible and encoded with outcome and assessment data in the digital recognition. Assessments are described and reflective of the output necessary to obtain formal recognition and aligned clearly with specified learning outcomes and competencies.

## □ Process : Quality

A new process for establishing and vetting a micro-recognition initiative should be established through Academic Quality – similar to the development of a course with less formalization

*<https://www.mohawkcollege.ca/academic-quality-at-mohawk/academic-quality-processes/new-program-development-program-renewal>*

## □ Competency Framework

The identified competencies/skills will be taught and assessed explicitly. These will align with a standard competency framework that is relevant to the skill/competency/attitude being credentialed such as Essential Employability Skills (EES), Value Rubrics, Essential Skills, Vocational Learning Outcomes, etc.

## □ Outcomes

Micro-credential(s) will map to the chosen competency framework and clearly link demonstrated knowledge, skills, or attitudes required of the credentialed assessment performance.

## □ Assessments

Micro-credentials require evidence of achieved learning outcomes. Assessment will be clearly aligned with outcomes and will be reflective of knowledge, skills, or attitudes. Evidence will be embedded and visible to employers via the open badge.

## □ Partner Endorsed

Micro-credentials will be validated by industry, community, and/or academic partners, or PAC where relevant. This validation will confirm the competency/outcome is in demand and will lead to employment or educational opportunities.

## □ Duration

Micro-credentials will be delivered in 11 weeks or less, and a maximum of 300 instructional hours to align with provincial guidelines for OSAP eligibility. To align with our principles, outcomes will be measured by learner competence as opposed to completed learning hours.

## □ Ministry funding

Micro-credentials can now be submitted for an OSAP eligibility review by the Ministry of Colleges and Universities, providing they are less than 11 weeks in duration and a minimum of 5 and a maximum of 300 instructional hours.

# Learning Outcomes and Badge Levels

When written, classified, and categorized effectively, learning outcomes provide a road map for educators, instructional designers, and learners. For educators and instructional designers, outcomes set clear goals or benchmarks for what needs to be taught, and therefore they narrow the scope of potential and appropriate instructional and assessment strategies. From a learners' perspective, outcomes set clear expectations for what is expected of them and help them self-evaluate when, or if, they are successful at meeting those goals.

Cognitive learning, affective learning, and psychomotor learning are three domains defined within Bloom's Taxonomy of Educational Objectives (Bloom, 1956). People learn in different ways and at different levels so Bloom and colleagues (1956) categorized the differences in terms of knowing (cognitive), feelings and attitudes (affective), and skills (psychomotor) (Clark, 2010). Within each domain, there are sub-divided levels of learning that form a continuum from the most basic to the most complex. "Of course, some units of learning may occur in more than one domain at the same time" (BCIT's Learning Resource Unit, 2003, p. 4).

A badge will provide recognition for specific knowledge, skills, or attitudes learners hold. Each badge should contain learning outcomes defining the competencies that learners have achieved, as well as critical information about the assessment process connected to successfully achieving the outcome. Aligning learning outcomes with Bloom's Taxonomy will naturally categorize badges into levels, which allows for transparency to stakeholders regarding what the badge holder can do.

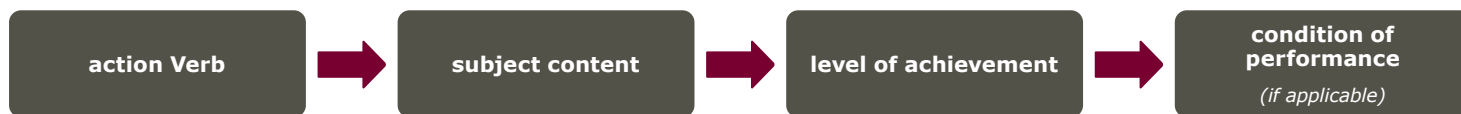
## Learning Outcomes

As defined earlier, a Learning Outcome (LO) is a **measurable, observable, and specific** statement that clearly indicates what a student should **know, feel/value, and be able to do** as a result of learning.

Well-written learning outcomes involve the following parts:

- Action verb
- Subject content
- Level of achievement
- Condition of performance (if applicable)

Well-written LOs involve the following parts:



For example:

LO 1) List areas of consensus and disagreement among publications on global warming

LO 2) Synthesize learning assignments with vocation-specific expectations using reflective enquiry.

Let's dig deeper into the three domains of learning; psychomotor, affective, and cognitive.

## Cognitive Learning

The Cognitive domain of learning refers to intellectual skills and activities required for learning, thinking critically, and problem solving. The cognitive domain is the most referenced domain in higher education. From lowest to highest, the six levels of the Cognitive Learning Domain are recall, examine, apply, analyze, evaluate, and create in an educational environment (Anderson & Krathwohl, 2001).

Select an action verb using the Cognitive Domain of Bloom's Taxonomy when writing learning outcomes associated with cognitive performance.

*Lower Order* ----- *Higher Order*

### Level 1

### Level 2

### Level 3

Recall	Examine	Apply	Analyze	Evaluate	Create
describe	explain	complete	compare & contrast	justify	plan
name	compare	use	examine	assess	invent
find	discuss	examine	explain	prioritize	compose
list	predict	illustrate	identify	recommend	design
relate	outline	classify	categorize	rate	construct
write	restate	solve	investigate	inspect	synthesize



## Psychomotor Learning

The Psychomotor domain includes physical aspects of learning such as movement, reflex, coordination, and use of the motor-skill areas (Clark, 2010). Physical aspects of learning are generally measured in terms of speed, accuracy, stamina, procedure, and technique (Clark, 2010) and this domain is sub-divided into seven permeable sections. From lowest to highest, the levels of the psychomotor domain are perception, set, guided response, mechanism, complete overt response, adaption, and organization (Simpson, 1972).

Select an action verb using the Psychomotor Domain of Bloom's Taxonomy when writing learning outcomes associated with skills-based performance.

Lower Order ----- Higher Order

### Level 1

### Level 2

### Level 3

Set	Guided Response	Mechanism	Complex Overt Response	Adaption	Origination
arrange	beginner level trial & error	intermediate level: develops proficiency. acts become habitual	expert level: high proficiency and accuracy	adapts	build
begin	attempt	dismantle	constructs	alerts	combine
display	copy	fix	dismantle	changes	compose
proceed	imitate	measure	fixes	modifies	construct
react	trace	mix	mends	rearranges	design
show	try	organize	mixes	revises	re-design

Adapted from:

[https://uwaterloo.ca/centre-for-teaching-excellence/sites/ca.centre-for-teaching-excellence/files/uploads/files/psychomotor\\_domain\\_-\\_blooms\\_taxonomy.pdf](https://uwaterloo.ca/centre-for-teaching-excellence/sites/ca.centre-for-teaching-excellence/files/uploads/files/psychomotor_domain_-_blooms_taxonomy.pdf)

## Affective Learning

The Affective domain includes emotional aspects of learning, such as attitudes, motivations, values, and feelings (Krathwohl, Bloom, & Masia, 1973). Aspects of affective learning often, but not always, involve engagement with the actions, beliefs, behaviours, products, and cultures of other people and places. Growth in this area is a result of personal judgments regarding the acceptance, valuing, and integration, or disregard, de-valuing, and opposition to new and perhaps conflicting realities, experiences, and environments (Krathwohl, Bloom, & Masia, 1964). The affective domain of learning is divided into five permeable sub-sections including: receiving (lowest), responding, valuing, organization, and characterization (highest).

Select an action verb using the Affective Domain of Bloom's Taxonomy when writing learning outcomes associated with attitudes, motivations, values, and feels.

Lower Order ----- Higher Order

### Level 1

### Level 2

### Level 3

Level 1		Level 2		Level 3
Receive	Respond	Value	Organize	Characterize
acknowledge	agree to	accept	adapt	act
ask	answer	approve	classify	exemplify
attend	clarify	differentiate	formulate	incorporate
choose	cooperate	refute	integrate	influence
describe	inquire	initiate	modify	practice
listen	question	justify	prepare	defend

Adapted from:

[https://uwaterloo.ca/centre-for-teaching-excellence/sites/ca.centre-for-teaching-excellence/files/uploads/files/psychomotor\\_domain\\_-\\_blooms\\_taxonomy.pdf](https://uwaterloo.ca/centre-for-teaching-excellence/sites/ca.centre-for-teaching-excellence/files/uploads/files/psychomotor_domain_-_blooms_taxonomy.pdf)

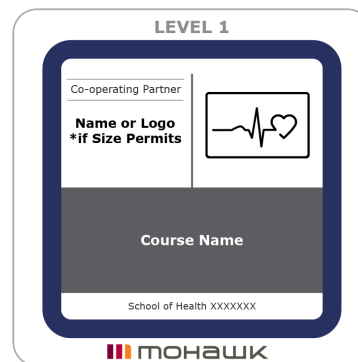
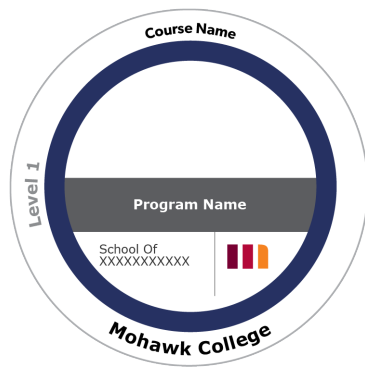
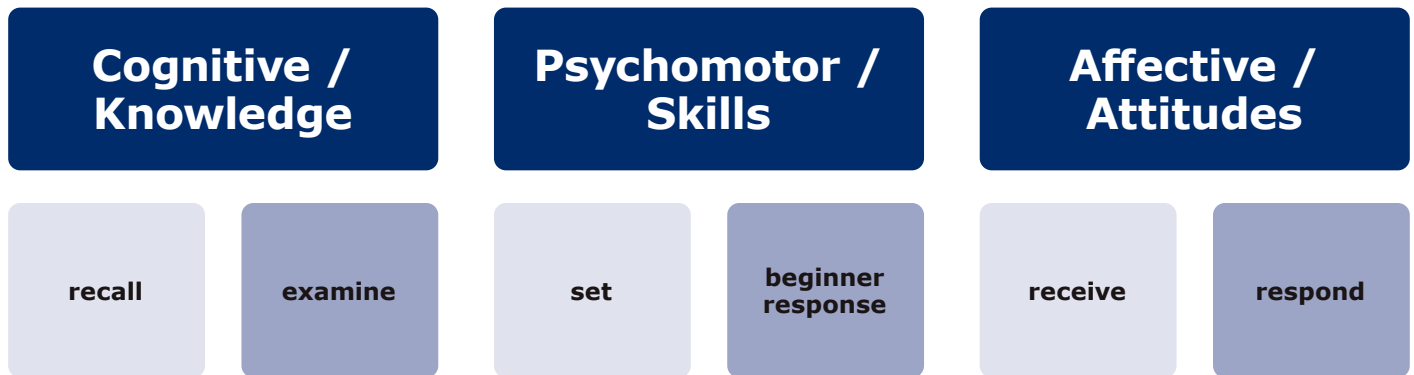
# Badge Levels

Badge levels are meaningful as they will ultimately assist in determining the depth or breadth of knowledge, skills, and/or attitudes. There are three badge levels and these levels will align to Bloom's Taxonomy in the following ways:

\*Note that the wording of the outcome and the assessment task together are what qualifies the level alignment and not just the wording of the learning outcome.

## Level 1: Foundational / Insight

Badges that teach and assess knowledge/skills/attitudes that align with the two lower order sections of Bloom's Taxonomy, will result in a level one / foundational badge.



## Level 2: Integrational / Implement

Badges that teach and assess knowledge/skills/attitudes that align with the middle order sections of Bloom's Taxonomy, will result in a level two / integrational badge.

**Cognitive /  
Knowledge**

**Psychomotor /  
Skills**

**Affective /  
Attitudes**

apply

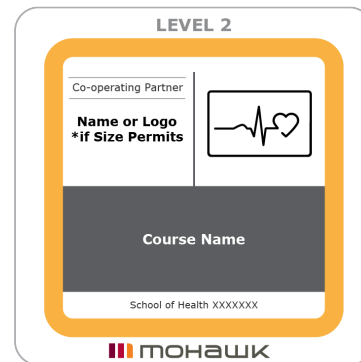
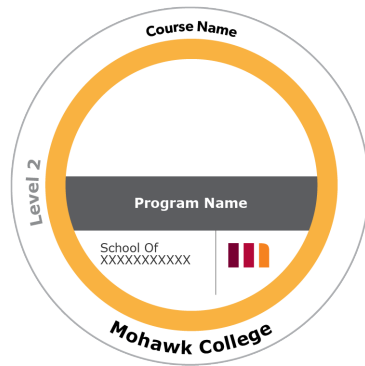
analyze

intermediate  
response

expert  
response

valuing

organizing



## Level 3: Specialized / Enlight

Badges that teach and assess knowledge/skills/attitudes that align with the higher order sections of Bloom's Taxonomy, will result in a level three / specialized badge.

**Cognitive /  
Knowledge**

**Psychomotor /  
Skills**

**Affective /  
Attitudes**

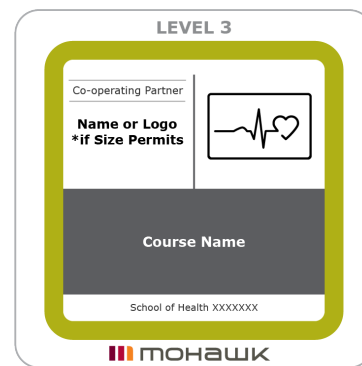
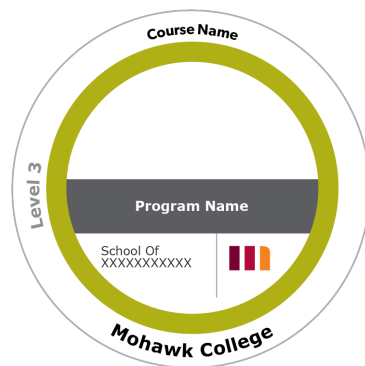
evaluate

create

adaption

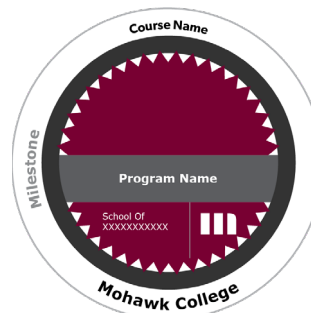
origination

characterization



## Milestone

A milestone badge (or meta badge) is a "super badge" associated with a collection of "level" badges and may represent a Micro-credential. A milestone badge is automatically awarded in our badge issuing platform (CanCred) to an earner when all required badges in the pathway have been issued.

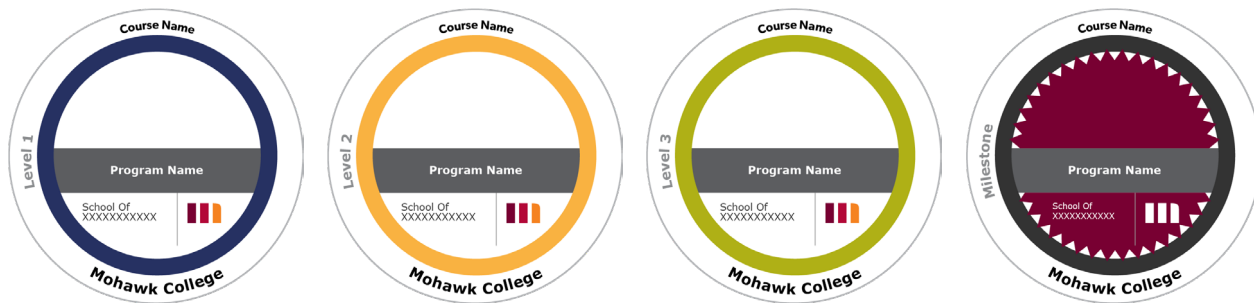


# Badge Style and Iconography (in development)

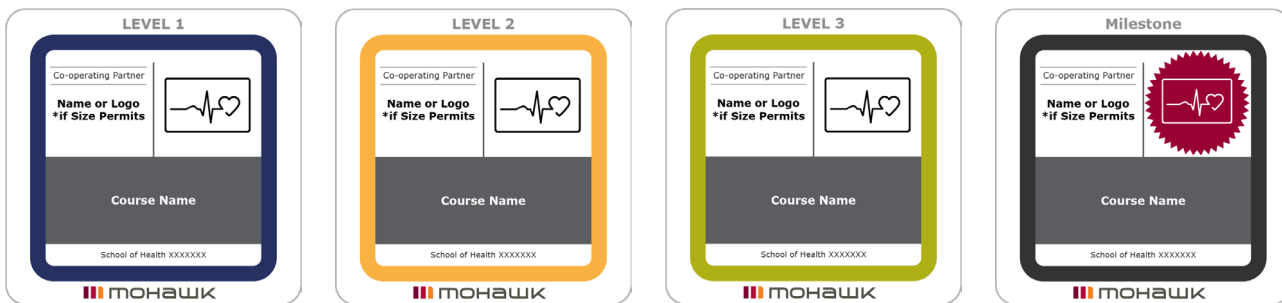
A common look and feel is required to identify badge types and levels. It is proposed that a combination of style, color, name, and iconography be included in a commonly adopted badge framework that also provides opportunity for issuer/school customization by industry partner co-branding.

The following are initial concepts are in development, consultation with Marketing.

## Mohawk Badge



## Co Branded Badge (Mohawk & Partner)



## Badge Submission, Approval, & Review Processes

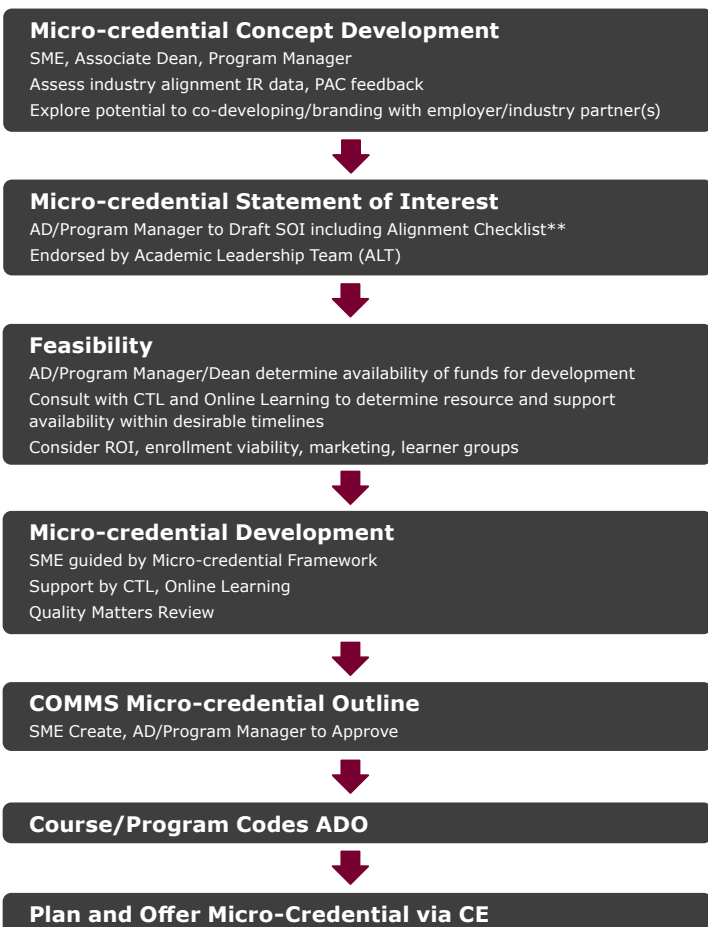
The processes for badge submission, approval, and review will be addressed in the next phase of the project.

# Micro-credential Development & Quality Assurance Processes

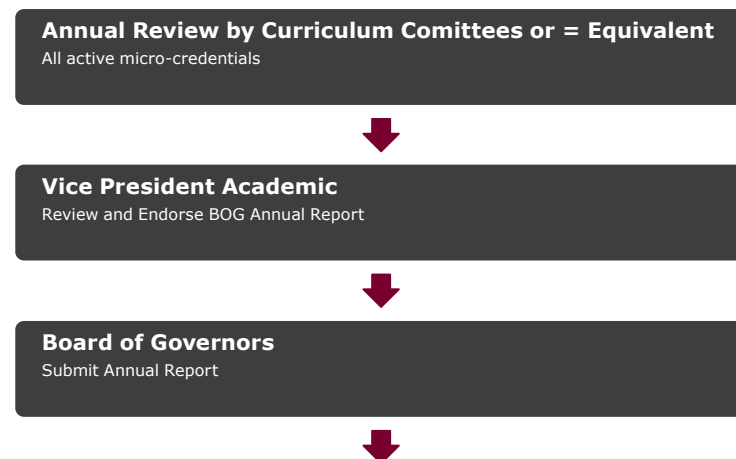


## → Program Advisory Committee Industry / Partner / Sector

### Micro-credentials Development Process



### Annual Quality Assurance Process & Cycle



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## Resources

- [eCampusOntario Micro-Credential Principles and Framework](#)
- [CiCAN National Micro credential Framework](#)
- [CiCan Environmental Scan](#)
- Micro-Credential Statement of Interest document (to be linked later)
- Micro-Credential Costing formula spreadsheet (to be linked later)
- Micro-Credential Outline template (to be linked later)

## Acknowledgements

This document is based upon [Micro-credential Principles and Framework](#) by eCampusOntario, licensed under [CC BY-SA](#).