Confirmation of Notice and Quorum

Agenda Item Number	C-566-1.1
Purpose	Secretariat to confirm notice and quorum of the meeting.

Confirmation Note – Approval of Agenda

Agenda Item Number	C-566-1.2
Purpose	To approve the agenda for the meeting.
Motion	(simple majority) That: a) The agenda, as presented to the meeting at C-566-1.2, Appendix A, be approved; and b) The Chair be authorized to suspend the regular order of business.
Attachments	Appendix A – 566th Council meeting agenda

Prepared By: Secretariat

Professional Engineers Ontario

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Draft AGENDA

C-566-1.2 Appendix A

566th Meeting of the Council of Professional Engineers Ontario
Friday, November 29, 2024 / 8:30 am – 4:30 pm / Lunch 12:15 – 1:00 pm
In-Person Meeting: Chelsea Hotel, Rossetti Room, 33 Gerrard Street West,Toronto
Virtual Option: Zoom details are provided via Outlook calendar invitation and Diligent Boards

SUMMARY OF TIMINGS	
8:30 am	**CALL TO ORDER – Formal Public Meeting Begins – Rossetti Room**
10:20–10:30 am	Approximate time of break
12:15–1:00 pm	Lunch
3:00–3:10 pm	Approximate time of break
4:30 pm	**Meeting concludes**

	ITEM	Spokesperson	Type	Time
1.	**OPENING**	**Spokesperson**	**Type**	**Time**
1.1	WELCOME AND CALL TO ORDER ○ Confirmation of Notice and Quorum ○ Acknowledgement of Attendees (Council, Staff, and Guests) ○ Other Announcements	Chair	Confirmation	8:30
1.2	APPROVAL OF AGENDA	Chair	Confirmation	
1.3	DECLARATION OF CONFLICTS OF INTEREST: Disclosure of Councillor conflicts, if any	Chair	Exception	
2.	**CONSENT AGENDA**	**Spokesperson**	**Type**	**Time**
Council members may request that an item be removed from the consent agenda for discussion.				
2.1	OPEN SESSION MINUTES – 565 COUNCIL MEETING	Chair	Decision	8:40
2.2	2024 STATUTORY AND REGULATORY COMMITTEES' FULL MEMBERSHIP LIST	J. Schembri Director, Volunteer Engagement	Decision	
2.3	CONSULTING ENGINEER DESIGNATION APPLICATIONS	J. Vera (Director, Licensing)	Decision	
2.4	COUNCILLOR TRAINING PROTOCOL FOR 2025	Councillor MacFarlane GNC Chair	Decision	
2.5	REGIONAL COUNCILLORS COMMITTEE CHARTER	Councillor MacFarlane GNC Chair	Decision	

ITEM		Spokesperson	Type	Time
2.6	*SERVICES OF THE ENGINEER ACTING UNDER THE DRAINAGE ACT* GUIDELINE	Councillor Hilborn RPLC Chair	Decision	
2.7	30 BY 30 METRICS	D. Smith Director, External Relations	Information	
2.8	REGIONAL COUNCILLORS COMMITTEE (RCC) REPORT	Councillor Shankar RCC Chair	Information	
2.9	ENGINEERS CANADA DIRECTORS REPORT	N. Hill Past President, Engineers Canada	Information	
3.	**EXECUTIVE REPORTS**	**Spokesperson**	**Type**	**Time**
3.1	PRESIDENT'S REPORT	Chair	Information	8:50
3.2	CEO/REGISTRAR'S REPORT ○ Including Strategic Planning Update	CEO/Registrar Quaglietta	Information	9:10
4.	**AUDIT AND FINANCE COMMITTEE ITEMS**	**Spokesperson**	**Type**	**Time**
AFC Summary Report at Tab 4 in Diligent Boards				
4.1	2025 DRAFT OPERATING AND CAPITAL BUDGETS	Councillor Cutler AFC Chair	Decision	9:40
4.2	2025 BORROWING RESOLUTION	Councillor Cutler AFC Chair	Decision	
5.	**GOVERNANCE AND NOMINATING COMMITTEE ITEMS**	**Spokesperson**	**Type**	**Time**
GNC Summary Report at Tab 5 in Diligent Boards				
5.1	SAFE DISCLOSURE POLICY	Councillor MacFarlane GNC Chair	Decision	10:45
6	**HUMAN RESOURCES AND COMPENSATION COMMITTEE ITEMS**	**Spokesperson**	**Type**	**Time**
HRCC Summary Report at Tab 6 in Diligent Boards				
7	**REGULATORY POLICY AND LEGISLATION COMMITTEE ITEMS**	**Spokesperson**	**Type**	**Time**
RPLC Summary Report at Tab 7 in Diligent Boards				
7.1	FUTURE DIRECTION OF THE ENGINEERING INTERN PROGRAM	Councillor Hilborn RPLC Chair	Decision	

8	REGULATORY ITEMS	Spokesperson	Type	Time
8.1	TRIBUNAL ACTIVITY REPORT	N. Brown Legal Counsel & Manager, Tribunals	Information	11:40
8.2	VISIONING FOR RELEVANCE UPDATE	Past President Fraser	Decision	
LUNCH: 12:15-1:00				
9	**OTHER ITEMS**	**Spokesperson**	**Type**	**Time**
9.1	COUNCILLOR QUESTIONS ○ Minimum Academic Requirement	Past President Fraser	Decision	1:00
9.2	MOTION TO MOVE IN CAMERA	Chair	Decision	
PUBLIC OPEN SESSION MEETING CONCLUDES				
10	**IN CAMERA CONSENT AGENDA**	**Spokesperson**	**Type**	**Time**
10.1	IN CAMERA MINUTES – 565 COUNCIL MEETING	Chair	Decision	1:30
10.2	PERFORMANCE STANDARDS FOR CRANE INSPECTIONS– O.REG. 260/08 CHANGE (SEALED)	Councillor Hilborn RPLC Chair	Decision	
10.3	HRCC REPORT TO COUNCIL	Councillor Roberge HRCC Chair	Decision	
10.4	RISK MANAGEMENT PROGRAM: HIGH PRIORITY RISKS	Councillor Cutler AFC Chair	Decision	
10.5	LEGAL UPDATE	D. Abrahams VP, Policy & Governance and Chief Legal Officer	Information	
11	**IN CAMERA ITEMS**	**Spokesperson**	**Type**	**Time**
11.1	COUNCILLOR QUESTIONS	Chair	Discussion	
11.2	PEO'S ANTI-WORKPLACE VIOLENCE AND HARRASMENT POLICY: Council to receive violations, if any	Chair	Exception	
11.3	IN CAMERA DIALOGUE WITH CEO/REGISTRAR a) CEO/Registrar Year-end Performance Evaluation	Chair HRCC Chair Councillor Roberge	Discussion Decision	2:30
11.4	IN CAMERA DIALOGUE WITHOUT CEO/REGISTRAR	Chair	Discussion	3:30
COUNCIL MEETING ENDS: 4:30 PM				

NEXT MEETINGS/EVENTS			
Council Meetings ○ **February 21, 2025** ○ **April 4, 2025**			
Governance Committee Meetings			
AFC Mar 20, 2025	**GNC** Feb 4, 2025	**HRCC** Feb 4, 2025	**RPLC** Feb 6, 2025

ADDITIONAL MATERIAL PROVIDED SEPARATELY

Please note that in order to streamline the agenda, additional material for each Council meeting is provided in the Resource Centre area of Diligent Boards (navigate to the folder "Reports" and the sub-folders therein for the applicable year and Council meeting). The additional material includes governance committee minutes, the Council Decision Log, and the Council Open Issues Registry. These can be discussed at the meeting if a Councillor asks to address a specific item. Material submitted/anticipated as of November 15, 2024 are as follows:

AFC Approved Minutes (Sep 12, 2024); GNC Approved Minutes (Sep 10, 2024); RPLC Approved Minutes (Sep 11, 2024); and Council Decision Log.

Exception Note – Conflicts of Interest

Agenda Item Number	C-566-1.3
Purpose	Councillors are requested to identify any potential conflicts of interest related to the open session Council agenda.
Strategic/Regulatory Focus	
Motion	*None required*

Summary

Councillors are to declare and refrain from participating in any Council matters where they might have a real or perceived conflict of interest.

The Council Chair is responsible for ruling on whether a conflict exists if there is a dispute.

The Councillor with a conflict of interest will be required to leave the Council meeting for the duration of the agenda item, including for any respective votes.

Decision Note – Consent Agenda

Agenda Item Number	C-566-2.0
Purpose	To approve items in the Consent agenda.
Motion	(simple majority) That the Consent Agenda, as presented to the meeting at C-565-2.0 be approved.

Routine agenda items that may be approved without debate are included in a consent agenda and may be moved in a single motion. However, the minutes of the meeting will reflect each item as if it was dealt with separately. Including routine items on a consent agenda expedites the meeting.

Items included on the consent agenda may be removed and dealt with separately if they contain issues or matters that require review.

Please review the minutes ahead of time for errors or omissions and advise Secretariat at secretariat@peo.on.ca if there are any required revisions prior to the meeting so that the minutes, when presented, may be considered within the consent agenda.

The Consent Agenda consists of:

2.1 Open Session Minutes C-565, September 27, 2024

2.2 2024 Statutory and Regulatory Committees' Full Membership List

2.3 Consulting Engineer Designation Applications

2.4 Councillor Training Protocol for 2025

2.5 Regional Councillors Committee Charter

2.6 *Services of the Engineer Acting Under the Drainage Act* Guideline

2.7 30 by 30 Metrics

2.8 Regional Councillors Committee (RCC) Report

2.9 Engineers Canada Directors Report

Prepared By: Secretariat

Decision Note - Open Session Minutes – 565th Council Meeting

Agenda Item No.	C-566-2.1
Purpose	To record that the minutes of the open session of the 565th meeting of Council accurately reflects the business transacted at that meeting.
Strategic/Regulatory Focus	Governance
Motion	That the minutes of the 565th meeting of Council, held September 27, 2024, as presented to the meeting at C-566-2.1, Appendix A, accurately reflect the business transacted at this meeting.
Attachments	Appendix A – Minutes C-565

Chapter X Minutes, Section 211 Approval of minutes of previous meeting, of Nathan and Goldfarb's Company Meetings states under Comment that, "There does not appear to be any obligation to have minutes signed to be valid or approved, but it is considered good practice. The motion does not by itself ratify or adopt the business transacted; it merely approves the minutes."

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MINUTES

The 565th MEETING of the COUNCIL of PROFESSIONAL ENGINEERS ONTARIO (PEO) was a hybrid meeting held at 40 Sheppard Avenue West, Toronto on Friday, September 27, 2024 at 8:30 a.m.

Present (In-Person):
G. Wowchuk, P.Eng., President
R. Fraser, P.Eng., Past President
F. Saghezchi, P.Eng., President-elect (from minute 12760)
G. Boone, P.Eng., Vice President (elected)
N. Lwin, P.Eng., Vice President (appointed) and East Central Region Councillor
C. Chiddle, P. Eng., Eastern Region Councillor
L. Cutler, P.Eng., Lieutenant Governor-in-Council Appointee
A. Dryland, CET., Lieutenant Governor-in-Council Appointee
A. Elshaer, P.Eng., Northern Region Councillor
M. Liu, P. Eng., Eastern Region Councillor
S. MacFarlane, P.Eng., Western Region Councillor
P. Mandel, CPA, CBV, Lieutenant Governor-in-Council Appointee (to 1:15 p.m., minute 12760)
L. Notash, P.Eng., Councillor-at-Large
R. Panesar, P.Eng., West Central Region Councillor
R. Prudhomme, P.Eng., Lieutenant Governor-in-Council Appointee
L. Roberge, P.Eng., Northern Region Councillor
S. Schelske, P.Eng., Lieutenant Governor-in-Council Appointee
U. Senaratne, P.Eng., Lieutenant Governor-in-Council Appointee
S. Sung, Lieutenant Governor-in-Council Appointee
R. Walker, P.Eng., Councillor-at-Large

Present (Virtual):
F. Saghezchi, P.Eng., President-elect (to minute 12759)
S.H. Ehtemam, P.Eng., East Central Region Councillor
V. Hilborn, P.Eng., Western Region Councillor
P. Mandel, CPA, CBV, Lieutenant Governor-in-Council Appointee (from 1:20 p.m., minute 12760)
G. Schjerning, P.Eng., Councillor-at-Large
P. Shankar, P.Eng., West Central Region Councillor

Regrets:
G. Nikolov, P.Eng., Lieutenant Governor-in-Council Appointee

Staff (In-Person):
J. Quaglietta, P.Eng., CEO/Registrar
D. Abrahams, Vice-President (VP), Policy & Governance and Chief Legal Officer
A. Dixit, P.Eng., VP, Corporate Operations and Digital Transformation
A. Viola, P.Eng., VP, Regulatory Operations and Deputy Registrar
D. Sikkema, Chief People Officer
C. Mehta, Director Finance
K. Praljak, Director, Communications
M. Solakhyan, Director, Governance
J. Vera, Director, Licensing
M. Feres, Manager, Council Operations (Secretariat)
E. Chor, Research Analyst (Secretariat)
G. Pedregosa, Council and Committee Coordinator (Secretariat)
A. Vijayanathan, Council and Committee Coordinator (Secretariat)

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Staff (Virtual):
P. Habas, Director, Program Management Office
A. Kwiatkowski, Director, Digital Transformation & Information Technology
M. Rusek, Director, Investigations and Prosecutions
J. Schembri, Director, Volunteer Engagement
D. Smith, Director, External Relations
N. Axworthy, Manager, Communications
J. Max, Manager, Policy
M. Soepiter, Controller, Finance
S. Rawal, Policy Counsel

Guests (In-Person):
A. Arenja, P. Eng., Ontario Director, Engineers Canada
C. Bellini, P. Eng., Ontario Director, Engineers Canada
H. Brown, Brown & Cohen
L. Lukinuk, Parliamentary Services
T. Kirkby, P.Eng., Ontario Director, Engineers Canada
D. Roukema, CEO, MDR Strategies Group Inc.

Guest (Virtual):
C. Deschenes, Director of Communications Strategy, MDR Strategies Group Inc.
M. Peneycad, Director of Operations, MDR Strategies Group Inc.
M. Sterling, Ontario Director, Engineers Canada

Council convened at 8:32 a.m. on Friday, September 27, 2024.

CALL TO ORDER

Notice having been given and a quorum being present, the Chair called the meeting to order; welcomed Councillors, staff, and guests; and made emergency and procedural announcements related to the conduct of the meeting.

The Chair welcomed Rachel Prudhomme, Lieutenant-Governor-in-Council appointee since June 2024. Councillor Prudhomme thanked the Chair and presented her credentials and experience.

The Chair noted the passing of Changiz Sadr, a former PEO volunteer who served on several committees and task forces since 2003, as well as Council from 2013 to 2017 and Engineers Canada Board of Directors from 2019-2022.

12751 – APPROVAL OF AGENDA

The following changes were discussed:

- Move item 2.4b from the Consent Agenda for separate discussion; and
- Move item 9.3 for discussion before item 4.0.

Moved by Councillor Schelske, seconded by Councillor Chiddle:

That:

a) The agenda, as presented to the meeting at C-565-1.2, Appendix A be approved as amended; and
b) the Chair be authorized to suspend the regular order of business.

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CARRIED
Unanimous consent

For: 22	**Against: 0**	**Abstain: 1**	**Absent: 2**
G. Boone		G. Wowchuk	G. Nikolov
C. Chiddle			P. Shankar
L. Cutler			
A. Dryland			
S. H. Ehtemam			
A. Elshaer			
R. Fraser			
V. Hilborn			
M. Liu			
N. Lwin			
S. MacFarlane			
P. Mandel			
L. Notash			
R. Panesar			
R. Prudhomme			
L. Roberge			
F. Saghezchi			
S. Schelske			
G. Schjerning			
U. Senaratne			
S. Sung			
R. Walker			

12752 – DECLARATION OF CONFLICTS OF INTEREST

Councillor Hilborn declared a perceived Conflict of Interest due to her employment with the Government of Ontario, and noted that participation in this meeting, including decisions made by Council is representative of herself and not the Councillor's employer.

12753 – CONSENT AGENDA

Moved by Councillor Roberge, seconded by Councillor Schelske.

That the Consent Agenda be approved, consisting of:

2.1 Open Session Minutes – C-565, June 21 2024
2.2 Changes to the 2024 Statutory and Regulatory Committees Membership List
- **a) Approval of Committee Membership Changes**
- **b) Committee Membership Changes**

2.3 Consulting Engineer Designation Application
2.4 – Regional Councillors Committee (RCC)
- **a) 2024-2025 Work Plan**

CARRIED
Unanimous consent

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For: 22	Against: 0	Abstain: 1	Absent: 2
G. Boone		G. Wowchuk	G. Nikolov
C. Chiddle			P. Shankar
L. Cutler			
A. Dryland			
S. H. Ehtemam			
A. Elshaer			
R. Fraser			
V. Hilborn			
M. Liu			
N. Lwin			
S. MacFarlane			
P. Mandel			
L. Notash			
R. Panesar			
R. Prudhomme			
L. Roberge			
F. Saghezchi			
S. Schelske			
G. Schjerning			
U. Senaratne			
S. Sung			
R. Walker			

12754 – REGIONAL COUNCILLORS COMMITTEE (RCC) REPORT

Council received the Regional Councillors Committee (RCC) Summary Report. There was a discussion with respect to exploring opportunities to increase RCC scholarships from $1,500 to $3,000. Councillors raised that if the amount of RCC scholarships are increased, members from small to large chapters should have an equitable opportunity to apply. Staff is currently assessing the low usage of the current scholarship amount across the 36 chapters.

12755 – PRESIDENT'S REPORT

President Wowchuk noted that there was an Executive Committee meeting held on August 28, 2024. Highlights of the meeting included:

- The role of the Executive Committee (EXE) in relation to PEO's governance model, including as a forum to discuss emerging issues in the engineering profession.

- A "white paper" was presented at the meeting by the Past President. It was noted that the paper was to create a generative discussion on the successor to the EIT Program, which will be further discussed at the November Plenary.

- It was noted that a "green paper" is being worked on by the President, President-elect, and Past President. The "green paper" will be presented at a future EXE meeting for generative discussion.

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President Wowchuk reported on his visit to the Northern Region Congress on September 14, 2024. Key highlights at the Northern Region Congress included:

- Participants were updated that PEO is currently nearing the end of a project to redesign and standardize Chapter websites.

- An explanation of how chapter budgets are handled at PEO, and how chapter funds can be accessed through PEO's chapter office.

President Wowchuk also updated Council that the process is underway to develop a Strategic Plan to take effect in 2026. PEO sought the services of a strategy consultant to lead engagement activities and to assist Council in drafting a strategic plan for approval in the Spring of 2025. Through PEO's RFP policies and procedures, MDR Strategy Group Ltd. was chosen as the successful vendor for this project.

12756 – CEO/REGISTRAR'S REPORT

CEO/Registrar Quaglietta provided highlights of the CEO/Registrar's Report. A summary is provided below.

- The completion of the review of the Anti-Racism & Equity (ARE) Code passed by Council in 2022 which includes a summary of an action plan for PEO's commitment and implementation of the ARE Code.

- A summary of the 21 initiatives that were budgeted for in 2024. It was noted that 80% of those projects are on track for completion.

- An update on licensing related to the *Fair Access to Regulated Professions and Compulsory Trades Act* (FARPACTA). It was noted that PEO is currently exceeding the targets in responding to completed applications to give or refuse licensure, and exceeding targets to respond to 30-day licence transfers.

- As of September 27, 2024 the number of outstanding legacy applicants prior to FARPACTA is now at 19,000 applicants which is down from 34,700 in July of 2023.

- A decrease in files outstanding with the Academic Requirement Committee (ARC) from 4,866 in January 2024 to 1,107 in September 2024. Furthermore, a decrease in wait time related to informing applicants that their requirements for licensure have been received has dropped from 20 weeks to 12 weeks, which highlights an operational improvement.

- 88% of members have completed or have begun the first two elements of the Mandatory CPD program (PEAK) and automated calls were conducted to assist in getting the last 12% of members to complete their CPD training, with a target goal of 90% by the end of the year.

- The completion of 57 projects related to PEO's Digital Transformation, cybersecurity, and improved policies, practices, and tools.

- The completion of a Communications Audit, one highlight of which is the recommendation to return to the option of a print edition of Engineering Dimensions for members.

[C. Deschenes and M. Peneycad joined the meeting at 9:08 a.m.]

Key data points and updates on areas of the business, including:
- Status of the operational plan and associated projects/initiatives;
- remissions and resignations;

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- customer service metrics and inquiry resolutions; and
- revenues and expenses for the seven months ending July 31, 2024.

The CEO/Registrar and staff provided additional information and answered questions related to CPD/PEAK, the application review process, the FARPACTA process, and the inventory management plan.

12757 – COMMUNICATIONS AUDIT FINDINGS PRESENTATION

PEO obtained the services of MDR Strategy Group Inc. (MDR) to conduct a communications audit in early 2024 to diagnose the health of PEO's communication practices. The purpose of the audit was to determine what PEO needed to do to improve information, foster positive stakeholder relations, and ensure PEO's communication is effective, consistent, and aligned with its public interest mandate.

The audit identified communication strengths and gaps within the organization, MDR conducted focus groups and surveyed PEO members. It was also noted that throughout the audit, a document review and environmental scan of PEO and other regulators were also conducted.

Highlights of the Communications Audit are provided below.

- MDR found that while PEO is often credited with its external communications, there have been instances of messaging released reactively to regulatory and internal changes to the organization. A recommendation is to proactively create a communication plan to announce the changes that are coming and keep audiences informed.

- MDR noted that PEO does not have a mandate to advocate for Professional Engineers, but rather PEO and its communications must focus on regulatory excellence in the engineering profession in fulfilling its mandate in statute to protect the public.

- A recommendation to bring back a print version of Engineering Dimensions as an option for members. It was noted in the audit that members responded positively in an overwhelming way to resume production of a paper version of the magazine. MDR highlighted that Engineering Dimensions is a leading magazine with good communication infrastructure amongst comparative regulators.

- MDR concluded that overall, PEO passed its communication audit; however, there is more room to improve its overall communications and role as a regulator. MDR outlined four key recommendations:

    1. Clearly define PEO and its role
    2. Implement standard communication structures, protocols, and practices
    3. Commit to greater openness and transparency
    4. Support PEO's commitment to modernize

MDR and staff provided additional information on defining the "public"; the effectiveness of the communication to members and the public; PEO's promotion of engineering excellence compared to engineering advocacy; the role of chapters in PEO's communication plan; the standardization of communications of chapter websites; and how PEO will implement MDR's recommendations in the strategic plan taking effect in 2026.

[D. Roukema, C. Deschenes, & M. Peneycad left the meeting at 10:31 a.m.]

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12758 – TECHNOLOGY USE AND SECURITY POLICY FOR COUNCIL AND VOLUNTEERS

AFC Chair, Councillor Cutler, presented the IT Policy for Council & Volunteers which proposes changes to the information technology (IT) policy for Council and volunteers. The policy relates to how volunteers, councillors, and staff conduct PEO business on PEO devices and digital assets such as e-mails, VPN, laptops, iPads, and phones.

Staff presented an executive summary of the Technology Use and Security Policy, highlighted below:

- The policy outlines a General Technology Asset Use in which Councillors and volunteers are asked to use PEO IT assets (i.e laptops, iPads, phones, etc) to conduct PEO's business activities, secure PEO devices, and keep PEO documentation confidential unless required for specific business functions.

- It was also noted that Councillors and volunteers should not allow any unauthorized external or internal users to access PEO's IT assets. Councillors and volunteers are discouraged from using PEO email for personal use and from exporting PEO emails and calendars.

- With respect to cybersecurity on IT assets, the policy prohibits alteration of any anti-malware or firewalls, and the creation and distribution of malicious programs.

Moved by Councillor Chiddle, seconded by Councillor Walker:

That Council approves the revised Information Technology (IT) Policy.

Staff answered Councillors' questions related to wi-fi use; the encouragement of using PEO devices for PEO business; the discontinuation of e-mail forwarding and potential cybersecurity risks; and sharing and storing confidential PEO documents.

[M. Sterling joined the meeting at 11:12 a.m.]

Councillors discussed that the proposed IT policy may need to be reconsidered with an aim to be less restrictive, and that it should reflect clauses that allow further transparency on how documents are handled on PEO devices.

A new motion was proposed and discussed.

Moved by Past President Fraser, seconded by Councillor Notash:

That the Technology Use and Security Technology Policy be committed to the CEO/Registrar to consider feedback; and

That the policy be brought back for consideration at the next regular meeting.

DEFEATED

For: 8	**Against: 14**	**Abstain: 1**	**Absent: 2**
G. Boone	C. Chiddle	G. Wowchuk	G. Nikolov
S. H. Ehtemam	L. Cutler		P. Shankar
A. Elshaer	A. Dryland		
R. Fraser	V. Hilborn		
N. Lwin	M. Liu		
L. Notash	S. MacFarlane		
R. Panesar	P. Mandel		
F. Saghezchi	R. Prudhomme		

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L. Roberge
S. Schelske
G. Schjerning
U. Senaratne
S. Sung
R. Walker

Council then voted on the original motion.

For: 14	**Against: 5**	**Abstain: 4**	**Absent: 2**
G. Boone	R. Fraser	S.H. Ehtemam	G. Nikolov
C. Chiddle	M. Liu	A. Elshaer	P. Shankar
L. Cutler	N. Lwin	R. Panesar	
A. Dryland	L. Notash	G. Wowchuk	
V. Hilborn	F. Saghezchi		
S. MacFarlane			
P. Mandel			
R. Prudhomme			
L. Roberge			
S. Schelske			
G. Schjerning			
U. Senaratne			
S. Sung			
R. Walker			

CARRIED

Point of Order: Past President Fraser requested that his objection to the decision be documented in the minutes, on the basis that it is contrary to transparency. Consent from Council was not unanimous and the matter was put to a vote.

For: 12	**Against: 6**	**Abstain: 5**	**Absent: 2**
G. Boone	C. Chiddle	A. Dryland	G. Nikolov
L. Cutler	V. Hilborn	M. Liu	P. Shankar
S.H. Ehtemam	P. Mandel	S. MacFarlane	
A. Elshaer	R. Prudhomme	S. Sung	
R. Fraser	L. Roberge	G. Wowchuk	
N. Lwin	U. Senaratne		
L. Notash			
R. Panesar			
F. Saghezchi			
S. Schelske			
G. Schjerning			
R. Walker			

CARRIED

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12759 – DRAFT 2025 OPERATING AND CAPITAL BUDGET REVIEWS

AFC Chair, Councillor Cutler, presented the initial drafts of PEO's 2025 operating, capital, and Council special project and strategic plan budgets for Council's feedback. These budgets include anticipated revenues and expenses required to fulfil PEO's regulatory objectives. Feedback provided by the Council will be incorporated into the revision of the 2025 budget, which will be presented to AFC in November for final review, and final approval at the November 2024 meeting.

An executive summary of the budget was presented and is summarized below:

- The 2025 draft budget forecasts that the budget is balanced, which will result in a small surplus.

- The estimated 2025 revenue is expected to be $36.7 million. This represents an increase of $891k or 2.5% over the 2024 forecasted revenue. The main factors contributing to this increase are a $550k rise in P.Eng revenue and a $133.k increase in funds collected from application, registration exams, and other fees.

- The forecasted 2025 expenses for operations, council, and strategic projects are expected to be $37.1 million vs $35.8 million in 2024. This represents an increase of $1.3 million, or 3.5% as compared to 2024 forecasted expenses.

Staff answered questions related to a potential review of costs related to external advisors; the use of online banking to collect member fees via credit card and to reduce transaction fees; financial matters related to tenants who are leasing from PEO; amortization cost; and expenses related to Council and special projects.

[S.H. Ehtemam and M. Liu left the meeting at 12:08 p.m.]

12760 – GNC CHAIR UPDATE ON COUNCIL INITIATIVES

GNC Chair, Councillor MacFarlane, provided an update on two Council initiatives in the 2024-2025 work plan.

1. Council Evaluation Framework: This initiative aligns with the 2023/2025 Strategic Plan's priority to implement a continuous governance improvement program. A key goal is to establish metrics for governance performance, incorporating principles of equity, diversity, and inclusion, along with conducting an annual review.

2. Council Remuneration Framework: This is a Council initiative. In February 2023, Council directed staff to undertake further broad exploration and study, including a variety of options, on the Council Remuneration Framework with a report back to the GNC and ultimately Council for further consideration.

RFPs for both projects have been completed. After a thorough review, two firms were selected to lead these initiatives. Both projects will involve close engagement and consultation with Councillors to ensure that the development of these frameworks reflects Councillor perspectives and produces actionable results. Councillors were encouraged to participate in upcoming consultation opportunities.

12761 – PEO ANNUAL GENERAL MEETING – 3-YEAR PLAN

GNC Chair, Councillor MacFarlane, presented the Annual General Meeting (AGM) 3-year plan for 2025, 2026, and 2027. There was discussion related to the rationale, and cost and attendance comparisons between the hybrid (in-person and virtual options) and virtual-only AGM format; as well as and how future AGMs could be conducted with respect to invited guests and supplemental events and activities.

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Moved by Councillor MacFarlane, seconded by Past President Fraser:

That Council approves the 3-Year Plan for PEO AGMs as outlined in the "Recommendations" section of the briefing note presented to the meeting at C-565-5.1.

CARRIED
Unanimous consent

For: 18	**Against: 0**	**Abstain: 3**	**Absent: 4**
G. Boone		L. Cutler	S.H. Ehtemam
C. Chiddle		F. Saghezchi	G. Nikolov
A. Dryland		G. Wowchuk	M. Liu
A. Elshaer			P. Shankar
R. Fraser			
V. Hilborn			
N. Lwin			
S. MacFarlane			
P. Mandel			
L. Notash			
R. Panesar			
R. Prudhomme			
L. Roberge			
S. Schelske			
G. Schjerning			
U. Senaratne			
S. Sung			
R. Walker			

12762 – APPOINTMENT TO GOVERNANCE AND NOMINATING COMMITTEE

[M. Liu re-joined the meeting at 1:25 p.m.]

GNC Chair, Councillor MacFarlane, presented a recommendation to appoint Councillor Prudhomme to the Governance and Nominating Committee (GNC) for the remainder of the 2024-2025 Council term.

Councillors discussed the flexibility of welcoming appointments to governance committees during a Council term.

Moved by Councillor MacFarlane, seconded by Councillor Elshaer:

That Council approves the appointment of Rachel Prudhomme, P.Eng., to the Governance and Nominating Committee for the remainder of the 2024-2025 Council term, as outlined in the "Recommendation" section of the briefing note presented to the meeting at C-565-5.2.

CARRIED
Unanimous consent

For: 19	**Against: 0**	**Abstain: 3**	**Absent: 3**
G. Boone		R. Prudhomme	S.H Ehtemam
C. Chiddle		F. Saghezchi	G. Nikolov
L. Cutler		G. Wowchuk	P. Shankar
A. Dryland			

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12763 – HRCC CHAIR UPDATE

HRCC Chair, Councillor Roberge, provided an update about the CEO/Registrar Performance Review. HRCC will hold an ad-hoc meeting in mid-October to receive an external advisor's report on how the CEO/Registrar will be evaluated. The HRCC Chair also noted that the full review will be completed for consideration at the November Council meeting.

12764 – PRACTICE STANDARD REVISION: TOWER CRANE INSPECTIONS & REQUEST FOR REGULATION CHANGE TO 0.REG. 260/08 (PERFORMANCE STANDARDS)

RPLC Chair, Councillor Hilborn, presented a recommendation to approve an update to the 2015 Tower Crane practice standard and direct staff to work with the Ministry of the Attorney General to draft amendments to Ontario Regulation 260/08 (performance standards) to reference the updated standard. PEO undertook a gap analysis of the current "Tower Crane Review", involving crane manufacturers, standards authorities, and crane companies during this analysis.

During the discussion, it was suggested that it would be beneficial to contact municipalities' building departments on changes to regulations concerning tower crane inspections, and potentially use the chapter system to help communicate that message to municipal building departments and related stakeholders.

Moved by Past President Fraser, seconded by Councillor Chiddle:

1. That Council approves the "Engineering Inspection Practice Standard for Tower Cranes as required by Ontario Regulation 213/91 under the *Occupational Health and Safety Act*" as presented in Appendix A, to address the Ontario Regulation 213/91 changes which came into effect on January 1, 2024, and

2. That Council directs staff to work with the Ministry of the Attorney General to draft amendments Ontario Regulation 260/08 (Performance Standards) to reference this updated Practice Standard.

CARRIED

For: 18	**Against: 1**	**Abstain: 3**	**Absent: 3**
C. Chiddle	G. Boone	V. Hilborn	S.H. Ehtemam
L. Cutler		F. Saghezchi	G. Nikolov
A. Dryland		G. Wowchuk	P. Shankar

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R. Walker

12765 – PROFESSIONAL PRACTICE GUIDELINE REVIEW: HUMAN RIGHTS IN PROFESSIONAL PRACTICE

RPLC Chair, Councillor Hilborn, presented a recommendation to direct staff to review whether PEO's regulatory and non-regulatory measures adequately address human rights issues within its jurisdiction and to propose measures for improvement where appropriate. The Chair highlighted that PEO should continue to effectively address human rights concerns and that PEO is fulfilling its commitments in the Anti-Racism and Equity Code.

If the motion is approved staff will conduct a comprehensive review of other regulators and best practices on Human Rights in Professional Practice and consult with a wide range of groups in the engineering profession.

There was discussion regarding the inclusion of engaging with those living with disabilities as part of the Professional Practice Guideline Review to ensure that PEO is compliant with the Accessibility for Ontarians with Disabilities Act (AODA); as well as clarification of the term "non-regulatory measures" as those that do not require an obligation, such as training, advisory statements, or guidelines.

Moved by Councillor Hilborn, seconded by Councillor Liu:

That whereas Council has committed in the Anti-Racism & Equity Code to "reforming rules, licence-holder reporting, and regulatory oversight process and practices to reinforce the professional obligations of all licence holders to uphold human rights law" and the review of the Guideline on Human Rights in Professional Practice indicates further analysis of PEO's regulatory tools is warranted to address human rights issues affecting the profession,

Council directs staff to review whether PEO's regulatory and non-regulatory measures adequately address human rights issues within its jurisdiction and to propose measures for improvement where appropriate.

CARRIED
Unanimous consent

For: 20	**Against: 0**	**Abstain: 2**	**Absent: 3**
G. Boone		F. Saghezchi	S.H. Ehtemam
C. Chiddle		G. Wowchuk	G. Nikolov
L. Cutler			P. Shankar
A. Dryland			
A. Elshaer			

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12766 – FITNESS TO PRACTISE

RPLC Chair, Councillor Hilborn, presented a recommendation which, if approved, directs the CEO/Registrar to develop a formal fitness to practise policy to manage incapacity-related issues for RPLC and Council consideration. The Fitness to Practise approach allows PEO to address incapacity-related issues as an alternative to members going through the disciplinary process. Staff will conduct a comprehensive stakeholder engagement process to address a wide range of perspectives and issues to develop a robust and effective Fitness to Practise process that meets the needs of the profession and protects the public.

Councillors discussed matters relating to the privacy and confidentiality of members. Staff responded as part of the development of the process there would be additional safeguards in place to ensure that public medical information about a member's mental or physical health is not publicly disclosed.

It was also noted that the Fitness to Practise process should be supportive of members and not punitive in nature.

Moved by Councillor Hilborn, seconded by Past President Fraser:

That Council directs the CEO/Registrar to develop a formal fitness to practise process specifically designed to address issues of incapacity, for consideration by the Regulatory Policy and Legislation Committee (RPLC) and Council.

CARRIED
Unanimous consent

For: 21	**Against: 0**	**Abstain: 1**	**Absent: 3**
G. Boone		G. Wowchuk	S.H. Ehtemam
C. Chiddle			G. Nikolov
L. Cutler			P. Shankar
A. Dryland			
A. Elshaer			
R. Fraser			
V. Hilborn			
M. Liu			

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R. Walker

12767 – TRIBUNAL ACTIVITY REPORT

Council received an update about the activities of the Tribunals Office, and related Committees (Discipline – DIC and Registration – REC).

In response to a question, the Chief Legal Officer addressed a decrease from 90 days to 40 days in submitting written decisions at tribunals and noted that the independent legal counsel has worked diligently in keeping the tribunal committees focused on the scope.

12768 – 2025-2026 COUNCIL AND COMMITTEE CALENDAR

Staff presented the 2025-2026 Council and Committee Calendar of meetings and events for PEO Council, governance committees, and the Regional Councillors Committee. There was discussion related to scheduled times for meetings and staff answered that the format and date/time of meetings or events may be adjusted throughout the year based on the availability of participants. Also, additional meetings may be scheduled depending on the work plan and at the respective chair's discretion.

It was noted that plenaries will be scheduled at the call of the President and that this detail be footnoted on the calendar.

Moved by Councillor Sung, seconded by Councillor Chiddle:

That Council approves the proposed 2025-2026 Calendar of Council and Governance Committee Meetings and Events, included at C-565-9.1, Appendix A, subject to quorum requirements and availability of Councillors with respect to specific meetings.

CARRIED
Unanimous consent

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For: 21	Against: 0	Abstain: 1	Absent: 3
G. Boone		G. Wowchuk	S.H. Ehtemam
C. Chiddle			G. Nikolov
L. Cutler			P. Shankar
A. Dryland			
A. Elshaer			
R. Fraser			
V. Hilborn			
M. Liu			
N. Lwin			
S. MacFarlane			
P. Mandel			
L. Notash			
R. Panesar			
R. Prudhomme			
L. Roberge			
F. Saghezchi			
S. Schelske			
G. Schjerning			
U. Senaratne			
S. Sung			
R. Walker			

12769 – VISIONING FOR RELEVANCE UPDATE

Past President Fraser presented an update on the Visioning for Relevance project and noted that further stakeholder input was received from the Ontario Society of Professional Engineers (OSPE), universities, and engineering students. It was noted that the stakeholders will review 3 or 4 vision statements and an interpretive document which will be considered for Council approval. It was also noted that the President and CEO/Registrar approved funds for an extension of the visioning project to gather stakeholder feedback.

12770 – ENGINEERS CANADA DIRECTORS REPORT

C. Bellini reported that Engineers Canada (EC) has announced that Philip Rizcallah was hired as the new CEO to replace Gerard McDonald. The EC directors answered questions related to Future of Engineering Accreditation (FEA) initiative and the potential retirement of a minimum academic requirement. Councillors were invited to send their opinions on this topic in writing to the Ontario EC directors so that the feedback can be presented at the FEA workshop in October.

12771 – COUNCILLOR QUESTIONS

PEO Transparency – The Past President raised a question relating to section 38 of the Professional Engineers Act covering the area of "Confidentiality". He encouraged greater transparency and discussion at governance committee and Council meetings about the definition of a good, transparent regulator and what that means with respect to how PEO business is handled for public discussion.

EIT and Emerging Disciplines – The Vice President (elected) submitted a motion to advance work plan timelines to handle issues relating to the now-discontinued Engineering Intern Program (EIT) as well as Government bills related to cybersecurity and artificial intelligence.

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Moved by Vice President Boone, seconded by President-elect Saghezchi:

Whereas many Canadian Engineering Graduates and Foreign Educated Engineers would like to apply for a Professional Engineering Licence but find little help in the steps to qualify and little recognition of the advanced technologies, that Council:

(a) direct RCC & Staff to facilitate All Chapters Member & Stakeholder Engagement Workshop series, on the following topics:

(i) "EIT Issues",
(ii) "Emerging Disciplines"

(b) direct RPLC to advance the Work Plan timelines & to consider an additional October 2024 Committee meeting to exclusively deal with the following PEO key significant Issues:

(i) future Re/Instatement EIT program as a parallel path to the Staff proposed Regulatory "Professional Engineers Act (PEA)" Act Change

(ii) support for "Emerging Disciplines" in light of Ontario Bill 194 & Federal Bills C-26 (Cyber) & C-27 (AI) currently at Second Reading at Provincial & Federal Parliaments.

Councillors raised that stakeholder engagement on EIT will be discussed at a November plenary and is part of the RPLC work plan for February. Staff noted that the work plan proposed and approved earlier in the year organizes how staff work on specific items such as EIT and ensures appropriate resources are allocated. It was also noted that work plans can be amended at any point; however, it was also raised by Councillors that any changes to the work plan at this point of the term could affect the timelines of other items Council has committed to this term.

Point of Order: To call the question to a vote. On the judgment of the Chair, a majority threshold was not reached, and debate was permitted to continue.

Discussion continued in relation to governance committees' work plans and concerns were expressed concern that the motion has the potential to disrupt Council's progress in other areas. Further, it was noted that there was not enough information to prioritize the emerging disciplines item, and more would be needed in relation to the Provincial and Federal bills cited in the motion.

[P. Shankar joined the meeting at 3:17 p.m.]

Staff noted that at the April 2024 Council meeting, Council directed staff to pause their work on the EIT program and have a plenary on this topic in late 2024. The CEO/Registrar has already scheduled a meeting with the President and the RPLC Chair to talk about next steps and facilitation of the November plenary.

A motion was moved to withdraw the original motion.

Moved by Councillor Hilborn, seconded by Councillor Chiddle:

That the original motion be withdrawn.

CARRIED

For: 11	**Against: 10**	**Abstain: 1**	**Absent: 3**
C. Chiddle	G. Boone	G. Wowchuk	S.H Ehtemam
A. Dryland	L. Cutler		G. Nikolov

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R. Fraser	A. Elshaer	L. Notash
V. Hilborn	N. Lwin	
M. Liu	S. MacFarlane	
P. Mandel	F. Saghezchi	
R. Prudhomme	R. Panesar	
L. Roberge	S. Schelske	
G. Schjerning	P. Shankar	
U. Senaratne	S. Sung	
R. Walker		

[M. Liu left the meeting at 3:35 p.m.]

12772 – MOTION TO MOVE IN CAMERA

Moved by Councillor Cutler, seconded by Councillor Elshaer:

That Council move in camera at 3:50 p.m.

CARRIED
Unanimous Consent

For: 21	**Against: 0**	**Abstain: 1**	**Absent: 3**
G. Boone		G. Wowchuk	S. H. Ehtemam
C. Chiddle			M. Liu
L. Cutler			G. Nikolov
A. Dryland			
R. Fraser			
V. Hilborn			
N. Lwin			
S. MacFarlane			
P. Mandel			
L. Notash			
R. Panesar			
R. Prudhomme			
L. Roberge			
F. Saghezchi			
S. Schelske			
G. Schjerning			
U. Senaratne			
P. Shankar			
S. Sung			
R. Walker			

12773 – DIRECTOR ACCOUNTABILITY FRAMEWORK

The following item was discussed in camera. It was then moved from in camera to open session.

GNC Chair, Councillor MacFarlane, presented the proposed *Director Accountability Framework and Accompanying Policies* that were reviewed over the summer at meetings of the GNC. The GNC Chair thanked all Councillors who participated and contributed to the framework, citing that significant work has been done by Councillors to have a fair, clear, and concise Director Accountability Framework.

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External legal counsel, Council's Parliamentarian, and other staff answered questions from Councillors ranging from the quorum needed to review code of conduct complaints, the disqualification criteria, and ensuring that elements of the framework are reasonable and fair.

In concluding its discussion, Councillors noted that the proposed framework is functional and that the documents should be reviewed and revisited from time to time to ensure they are up-to-date and in alignment with other PEO policies, and to ensure fairness and transparency on director conduct.

Moved by Councillor MacFarlane, seconded by Councillor Walker:

That Council approves the Councillor Code of Conduct at C-565-10.2, Appendix A.

That Council approves the Conflict of Interest Policy and Procedure for PEO Council at C-565-10.2, Appendix B.

That Council approves the Anti-Workplace Violence, Harassment, and Discrimination Policy at C-565-10.2, Appendix C.

That Council approves the election eligibility criteria presented at C-565-10.2, Appendix D, and directs staff to work with the Ministry of the Attorney General to prepare regulations respecting and governing the qualifications of the members to be elected to the Council as anticipated by clause 2 of subsection 7(1) of the *Professional Engineers Act*.

That Council approves the disqualification conditions presented at C-565-10.2, Appendix E, and directs staff to work with the Ministry of the Attorney General to prepare regulations prescribing the conditions disqualifying members of the Council from sitting on the Council as anticipated by clause 3 of subsection 7(1) of the *Professional Engineers Act*.

CARRIED

For: 15	**Against: 4**	**Abstain: 2**	**Absent: 4**
C. Chiddle	G. Boone	G. Wowchuk	S.H Ehtemam
L. Cutler	R. Fraser	N. Lwin	M. Liu
A. Dryland	L. Notash		G. Nikolov
A. Elshaer	F. Saghezchi		P. Shankar
V. Hilborn			
S. MacFarlane			
P. Mandel			
R. Panesar			
R. Prudhomme			
L. Roberge			
S. Schelske			
G. Schjerning			
U. Senaratne			
S. Sung			
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The meeting concluded on at approximately 6:40 p.m.

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These open session minutes consist of 19 pages and minutes 12751 to 12773, inclusive.

_____
Gregory P. Wowchuk, P.Eng., Chair

Decision Note – 2024 Statutory and Regulatory Committees Full Membership List

Agenda Item No.	C-566-2.2
Purpose	To approve the committee membership for 2025.
Strategic/Regulatory Focus	Committee membership to support PEO's regulatory focus.
Motion	That Council approve the committee membership renewals for 2025.
Attachments	Appendix A – *Full Roster 2024*

Summary
Council is asked to approve the 2025 committee membership.

Public Interest Rationale
Statutory committees assist PEO in meeting the principal object of the association in accordance with the *Professional Engineers Act* (PEA).

Background
Council has the responsibility for ensuring that the committees required in the PEA (s. 10) are continued so they can do the work of governing the profession and protecting the public in accordance with PEO's principal object "to regulate the practice of professional engineering and to govern…in order that the public interest may be served and protected".

Next Steps
The Committee membership rosters will be updated following approval by Council.

Prepared By: Volunteer Engagement

C-566-2.2
Appendix A

2024 Committee Membership Roster

Governance Committees:

Audit and Finance Committee (AFC):			
First Name:	Last Name:	Membership Dates:	Role:
Lorne	Cutler	2024 - AGM 2025	Chair
Paul	Mandel	2024 - AGM 2025	Member
George	Nikolov	2024 - AGM 2025	Member
Sherlock	Sung	2024 - AGM 2025	Member
Randy	Walker	2024 - AGM 2025	Member
Fred	Saghezchi	2024 - AGM 2027	Member
Roydon	Fraser	2024 - AGM 2025	Member
Greg	Wowchuk	2024 - AGM 2026	Member

Executive Committee (EXE):			
First Name:	Last Name:	Membership Dates:	Role:
Greg	Wowchuk	2024 - AGM 2026	Chair
Roydon	Fraser	2024 - AGM 2025	Member
Fred	Saghezchi	2024 - AGM 2027	Member
Guy	Boone	2024 - AGM 2025	Member
Nanda	Lwin	2024 - AGM 2025	Member
Hannah	Ehtemam	2024 - AGM 2025	Member
Ahmed	Elshaer	2024 - AGM 2025	Member
Vicki	Hilborn	2024 - AGM 2025	Member
Glen	Schjerning	2024 - AGM 2025	Member
Uditha	Senaratne	2024 - AGM 2025	Member

Governance and Nominating Committee (GNC):			
First Name:	Last Name:	Membership Dates:	Role:
Susan	MacFarlane	2024 - AGM 2025	Chair
Nanda	Lwin	2024 - AGM 2025	Member
Glen	Schjerning	2024 - AGM 2025	Member
Ahmed	Elshaer	2024 - AGM 2025	Member
Ravinder	Panesar	2024 - AGM 2025	Member
Fred	Saghezchi	2024 - AGM 2027	Member
Roydon	Fraser	2024 - AGM 2025	Member

Greg	Wowchuk	2024 - AGM 2026	Member
Rachel	Prudhomme	2024 - AGM 2025	Member

Human Resources and Compensation Committee (HRCC):			
First Name:	Last Name:	Membership Dates:	Role:
Luc	Roberge	2024 - AGM 2025	Chair
Andrew	Dryland	2024 - AGM 2025	Member
Scott	Schelske	2024 - AGM 2025	Member
Pappur	Shankar	2024 - AGM 2025	Member
Uditha	Senaratne	2024 - AGM 2025	Member
Fred	Saghezchi	2024 - AGM 2027	Member
Roydon	Fraser	2024 - AGM 2025	Member
Greg	Wowchuk	2024 - AGM 2026	Member

Regulatory Policy and Legislation Committee (RPLC):			
First Name:	Last Name:	Membership Dates:	Role:
Vicki	Hilborn	2022 - AGM 2025	Chair
Michelle	Liu	2023 - AGM 2025	Member
Leila	Notash	2021 - AGM 2025	Member
Guy	Boone	2024 - AGM 2025	Member
Chantal	Chiddle	2024 - AGM 2025	Member
Hannah	Ehtemam	2024 - AGM 2025	Member
Fred	Saghezchi	2023 - AGM 2027	Member
Roydon	Fraser	2021 - AGM 2025	Member
Greg	Wowchuk	2022 - AGM 2026	Member

Statutory/Regulatory Committees:

Academic Requirements Committee (ARC)			
First Name:	Last Name:	Membership Dates:	Role:
Yehoudith	Dimitriu	1992 - Dec 2024	Chair
James	Lee	1999 - 2013, 2023 - Dec 2024	Vice-Chair
Waguih	ElMaraghy	1989 - 1994, 1998 – Dec 2024	Member
Sanjiwan	Bhole	2004 - Dec 2024	Member
Amir	Fam	2010 - Dec 2024	Member
Ross	Judd	Pre-1984 - Dec 2024	Member
Meilan	Liu	2010 - Dec 2024	Member
Joseph	Lostracco	2014 - Dec 2024	Member
Ian	Marsland	2016 - Dec 2024	Member
Girgis	Nakhla	2003 - Dec 2024	Member
Remon	Pop-lliev	2005 - Dec 2024	Member
Amin	Rizkalla	2010 - Dec 2024	Member
Medhat	Shehata	2014 - Dec 2024	Member
Shamim	Sheikh	2002 - Dec 2024	Member
Ramesh	Subramanian	2013 - Dec 2024	Member
Seimer	Tsang	1999 - 2020, 2022 - Dec 2024	Member
Jerald	Lalman	2023 - Dec 2024	Member
Magdi	Emile Mohareb	2010 - Dec 2024	Member
John	Yeow	2010 - Dec 2024	Member
Kamyar	Ghavam	2023 - Dec 2024	Member
Reza	Hessabi	2023 - Dec 2024	Member
Sayyed Ali	Hosseini	2023 - Dec 2024	Member
Nevin	Koshy	2023 - Dec 2024	Member
Jerald	Lalman	2023 - Dec 2024	Member
Sarbast	Rasheed	2023 - Dec 2024	Member
Mahmoud	Sayed Ahmed	2023 - Dec 2024	Member
Alireza	Siadatan	2023 - Dec 2024	Member

Central Election and Search Committee (CESC)			
First Name:	Last Name:	Membership Dates:	Role:
Nicholas	Colucci	2022 - June 2025	Chair
Roydon	Fraser	2023 - June 2026	Member
Greg	Wowchuk	2024 - June 2027	Member

Suresh	Khanal	June 23, 2023 - June 2026	Member
Mostafa	Khosravyelhossaini	June 23, 2023 - June 2026	Member
Marcia	Lim	2024 - June 2027	Member
Keivan	Torabi	2024 - June 2027	Member
Bhargav	Pandya	2024 - June 2025	Member
Mohammad	Semnani	2024 - June 2025	Member

Complaints Committee (COC):			
First Name:	Last Name:	Membership Dates:	Role:
Nicholas	Sylvestre-Williams	2017 - Dec 2024	Chair
David	Uren	2017 - Dec 2024	Vice-Chair
Lisa	MacCumber	2015 - Dec 2024	Member
Bryce	Chandler, LL.B.	2021 - Feb 2024 (term extended)	Member
Storer	Boone	2020 - Dec 2024	Member
Mark	Campbell	2023 - Dec 2024	Member
Anthony	Cecutti	2000 - Dec 2024	Member
Karen	Dennison	2020 - Dec 2024	Member
Stephen	Georgas	2021 - Dec 2024	Member
Marianne	Lee	2021 - Dec 2024	Member
Chris	Roney	1998 - Dec 2024	Member
Robert	Shirer	2021 - Dec 2024	Member
Keith	Stephen	2017 - Dec 2024	Member
Peter	Frise	1997 - Dec 2024	Member
Mark	Winterton	2021 - Dec 2024	Member
Fanny	Wong	2021 - Dec 2024	Member
Albert	Conforzi, LL.B.	2021 - May 2024 (term extended)	Member

Consulting Engineer Designation Committee (CEDC):			
First Name:	Last Name:	Membership Dates:	Role:
Adrian	Pierorazio	2019 - Dec 2024	Chair
Matt	Weaver	2021 - Dec 2024 (retiring)	Vice-Chair
Steven	Van Der Woerd	2015 - Dec 2024	Member
Michael	Rosenblitt	2021 - Dec 2024	Member
Gordon	Debbert	2019 - Dec 2024	Member
Dalila	Giusti	2022 - Dec 2024	Member

Santosh	Gupta	2020 - Dec 2024	Member
Andrew	Lawton	2019 - Dec 2024	Member
Donald	Plenderleith	2019 - Dec 2024	Member

First Name:	Last Name:	Membership Dates:	Role:
Consulting Engineer Designation Committee (CEDC) Eastern Subcommittee:			
Andrew	Lawton	2012 - Dec 2024	Chair
Donald	Plenderleith	2016 - Dec 2024	Member
Kelly	Lalonde	2023 - Dec 2024	Member
Brian	Hein	2022 - Dec 2024	Member
Consulting Engineer Designation Committee (CEDC) Northern Subcommittee:			
Matt	Weaver	2019 - Dec 2024	Chair
Donald	Christopher Redmond	2001 - Dec 2024	Member
Consulting Engineer Designation Committee (CEDC) Southern Subcommittee:			
Steven	Van Der Woerd	2015 - Dec 2024	Chair
Adrian	Pierorazio	2015 - Dec 2024	Member
Consulting Engineer Designation Committee (CEDC) Toronto Subcommittee:			
Michael	Rosenblitt	2019 - Dec 2024	Chair
Douglas	Barker	1994 - Dec 2024	Member
Dalila	Giusti	2022 - Dec 2024	Member
Santosh	Gupta	2016 - Dec 2024	Member
Eric	Nejat	1995 - Dec 2024	Member
Edward	Poon	2019 - Dec 2024	Member
Terry	Sedore	2019 - Dec 2024	Member
Joseph	Yeremian	2019 - Dec 2024	Member
Murad	Hossain	2024 - Dec 2024	Member
Gisele	Azimi	2024 - Dec 2024	Member
Consulting Engineer Designation Committee (CEDC) Western Subcommittee:			
Gordon	Debbert	2017 - Dec 2024	Chair
Miles	Buckrell	2023 - Dec 2024	Member
Dave	Thompson	2024 - Dec 2024	Member

Discipline Committee (DIC):			
First Name:	Last Name:	Membership Dates:	Role:
Warren	Turnbull	2015 - Dec 2024	Chair
Charles	McDermott	2018 - April 2027	Vice-Chair
Luc	Roberge	2024 - Dec 2024	Member

Paul	Ballantyne	2010 - April 2027	Member
Rishi	Kumar	2004 - Dec 2024	Member
Glenn	Richardson	1997 - April 2027	Member
Robert	Wilson	2011 - April 2027	Member
David	Germain, J.D.	2013 - Dec 2024	Member
Eric	Bruce, J.D.	2013 - May 2025	Member
Alisa	Chaplick, LL.B.	2013 - May 2025	Member
Reena	Goyal, J.D	2013 - May 2025	Member
James	Amson	2011 - Dec 2024	Member
Aubrey	Friedman	2004 - Dec 2024	Member
Jag	Mohan	1990 - Dec 2024	Member
Michael	Rosenblitt	2018 - Dec 2024	Member
Tommy	Sin	2018 - Dec 2024	Member
Albert	Sweetnam	2002 - Dec 2024	Member
Gary	Thompson	2018 - Dec 2024	Member
John	Tyrrell	2018 - Dec 2024	Member
Michael	Wesa	1992 - Dec 2024	Member
Corrine	Dimnik	2024 - Dec 2027	Member
Gordon	Ip	2024 - Dec 2027	Member
Peggy	Judge	2024 - Dec 2024	Member
Geoffrey	Pond	2024 - Dec 2027	Member
Serge	Robert	2024 - Dec 2024	Member
Evelyn	Spence, LL.B	2024 - Dec 2027	Member
Tony	Wing	2024 - Dec 2024	Member

Experience requirements Committee (ERC):			
First Name:	Last Name:	Membership Dates:	Role:
Lionel	Ryan	2018 - Dec 2024	Chair
Ravi	Ravindran	2024 - Dec 2024	Vice-Chair
Andrew	Cornel	2015 - Dec 2024	Member
Samuel	Abd El Malek	2007 - Dec 2024	Member
Shah	Alamgir	2012 - Dec 2024	Member
Obrad	Aleksic	2019 - Dec 2024	Member
Hisham	Alkabie	2018 - Dec 2024	Member
Ilir	Angjeli	2018 - Dec 2024	Member
Gheorghe	Apostol	2000 - Dec 2024	Member
Nanjappan	Ardhanarisamy	2014 - Dec 2024	Member

Behrouz	Atrie	2004 - Dec 2024	Member
Magdy	Milad Attia	2009 - Dec 2024	Member
Arshad	Azhar	2005 - Dec 2024	Member
Naeim	Azizi Tavakkoli	2013 - Dec 2024	Member
Devinder	Bahra	2004 - Dec 2024	Member
Steven	Bailey	2013 - Dec 2024	Member
Mark	Bendix	2003 - Dec 2024	Member
Mohamed	Boutazakhti	2008 - Dec 2024	Member
Albena	Bukurova	2016 - Dec 2024	Member
Ruben	Burga	2012 - Dec 2024	Member
Betty Anne	Butcher	1996 - Dec 2024	Member
Jeremy	Carkner	2012 - Dec 2024	Member
Raju	Chander	2006 - Dec 2024	Member
Dan	Cosmin	2006 - Dec 2024	Member
Michael	Dang	2000 - Dec 2024	Member
Charles	De La Riviere	2002 - Dec 2024	Member
Savio	DeSouza	2015 - Dec 2024	Member
Milorad	Dimitrijevic	2006 - Dec 2024	Member
Afshin	Ebtekar	2004 - Dec 2024	Member
Seyed Jalal	Emami	2005 - Dec 2024	Member
Hassan	Erfanirad	2005 - Dec 2024	Member
Reda	Fayek	2006 - Dec 2024	Member
Rabiz	Foda	2000 - Dec 2024	Member
Shaun	Gao	2018 - Dec 2024	Member
Dalila	Giusti	2001 - Dec 2024	Member
Branislav	Gojkovic	2004 - Dec 2024	Member
Mohinder	Grover	1999 - Dec 2024	Member
Liang	Guo	2014 - Dec 2024	Member
Ravi	Gupta	1992 - Dec 2024	Member
Santosh	Gupta	2000 - Dec 2024	Member
Mohamed	Hamed	2016 - Dec 2024	Member
Faiz	Hammadi	2005 - Dec 2024	Member
Md Akhtar	Hossain	2013 - Dec 2024	Member
Magued	Ibrahim	2004 - Dec 2024	Member
Shawky	Ibrahim	2004 - Dec 2024	Member
Gordon	Ip	2016 - Dec 2024	Member
William	Jackson	1996 - Dec 2024	Member
Ayvun	Jeganthan	2005 - Dec 2024	Member

Torben	Jensen	2016 - Dec 2024	Member
Vyjayanthi	Keshavamurthy	2014 - Dec 2024	Member
Mohammad	Khalid	2013 - Dec 2024	Member
Nazli	Khan	2014 - Dec 2024	Member
Saleemullah	Khan	2006 - Dec 2024	Member
Vitali	Kovaltchouk	2015 - Dec 2024	Member
Berta	Krichker	1998 - Dec 2024	Member
Rishi	Kumar	2004 - Dec 2024	Member
C. LeRoy	Lees	1999 - Dec 2024	Member
Kam	Leong	2019 - Dec 2024	Member
Dexter	Lestage	2005 - Dec 2024	Member
Andrew	Luk	2019 - Dec 2024	Member
Wayne	Mac Culloch	2018 - Dec 2024	Member
Bosko	Madic	2005 - Dec 2024	Member
Ranee	Mahalingam	2006 - Dec 2024	Member
Nazmy	Markos	2007 - Dec 2024	Member
Alexei	Martchenko	2005 - Dec 2024	Member
Daniel	Martis	2016 - Dec 2024	Member
James	McConnach	2001 - Dec 2024	Member
Florin	Merauta	2014 - Dec 2024	Member
Huirong	Min	2013 - Dec 2024	Member
Jiteshkumar	Modi	2004 - Dec 2024	Member
Gerald	Monforton	2018 - Dec 2024	Member
Zoran	Mrdja	2005 - Dec 2024	Member
Muhammad	Mudassar	2008 - Dec 2024	Member
Anis	Muhammad	2005 - Dec 2024	Member
Mirsad	Mulaosmanovic	2019 - Dec 2024	Member
Tom	Murad	2004 - Dec 2024	Member
Mohamed	Mushantat	2019 - Dec 2024	Member
Eric	Nejat	2016 - Dec 2024	Member
Franz	Newland	2015 - Dec 2024	Member
Catalin	Gabriel Onea	2005 - Dec 2024	Member
Mario	Orbegozo	2004 - Dec 2024	Member
Daniel	Ospina	2013 - Dec 2024	Member
Tibor	Palinko	2002 - Dec 2024	Member
Michael	Pan	2013 - Dec 2024	Member
Anthony	Paz	1998 - Dec 2024	Member
Edward	Poon	2019 - Dec 2024	Member

Saverio	Pota	2015 - Dec 2024	Member
Eugene	Puritch	2007 - Dec 2024	Member
Majid	Rahimi-Chatri	2008 - Dec 2024	Member
Touraj	Rahnamoun	2015 - Dec 2024	Member
Venkatasubramanian	Raman	2006 - Dec 2024	Member
Mario	Ramirez-Roldan	2010 - Dec 2024	Member
Farzad	Rayegani	2002 - Dec 2024	Member
Shiraz	Yusuf Rehmani	2013 - Dec 2024	Member
Amin	Rizkalla	2005 - Dec 2024	Member
Ghaus	Rizvi	2013 - Dec 2024	Member
Titus	Rusu	2013 - Dec 2024	Member
Saeid	Safadel	2004 - Dec 2024	Member
Magdy	Samaan	2008 - Dec 2024	Member
William	Sanabria Nunez	2010 - Dec 2024	Member
George	Semaan	2005 - Dec 2024	Member
Tahir	Shafiq	1995 - Dec 2024	Member
Urmish	Shah	2008 - Dec 2024	Member
Abdul	Waheed Shaikh	2012 - Dec 2024	Member
Duncan	Sidey	2006 - Dec 2024	Member
Frank	Sigouin-Allan	2001 - Dec 2024	Member
Ferdo	Simov	2004 - Dec 2024	Member
John	M. Smith	2005 - Dec 2024	Member
Zeljko	Sucevic	2018 - Dec 2024	Member
Saleh	Tadros	2000 - Dec 2024	Member
Sasha	Tasic	2005 - Dec 2024	Member
Mihir	Thakkar	2009 - Dec 2024	Member
Uthayakaren	Thurairajah	2015 - Dec 2024	Member
Cathy	Wang	2018 - Dec 2024	Member
Jianguo	Wang	2010 - Dec 2024	Member
David	Wang	2008 - Dec 2024	Member
Michael	Wong	2018 - Dec 2024	Member
Matthew	Xie	2000 - Dec 2024	Member
George	Yin	2004 - Dec 2024	Member
Sarah	Zhang	2005 - Dec 2024	Member
David	Kiguel	2004 - 2022, 2024 - Dec 2024	Member
Jega	Jeganathan	2014 - Dec 2024	Member

Fees Mediation Committee (FMC):			
First Name:	Last Name:	Membership Dates:	Role:
Kathryn	Sutherland	2006 - Dec 2024	Chair
Gordon	Danson	2006 - Dec 2024	Member
Billy	Haklander	2018 - Dec 2024	Member
Peter	Scott	1989 - Dec 2024	Member
Jude	Trembley	2018 - Dec 2024	Member
Paul	Walters	2018 - Dec 2024	Member

Registration Committee (REC):			
First Name:	Last Name:	Membership Dates:	Role:
Simon	Sukstorf	2014 - Dec 2024	Chair
Paul	Ballantyne	2016 - Dec 2024	Vice-Chair
Alisa	Chaplick, LL.B.	2020 - Dec 2025	Member
Bogdan	Damjanovic	2006 - Dec 2024	Member
Joseph	Khatamay	2004 - Dec 2024	Member
Charles	McDermott	2016 - Dec 2024	Member
Virendra	Sahni	2004 - Dec 2024	Member
Geoffrey	Pond	2020 - Dec 2024	Member
Benjamin	Coulson	2024 - Dec 2024	Member
Maria	Elena Flores	2024 - Dec 2024	Member
Daniel	Gartenburg	2024 - Dec 2024	Member
Gerald	Genge	2024 - Dec 2024	Member
James	Amson	2024 - Dec 2024	Member
Michael	Rosenblitt	2024 - Dec 2024	Member
Albert	Sweetnam	2024 - Dec 2024	Member
Gary	Thompson	2024 - Dec 2024	Member
Warren	Turnbull	2024 - Dec 2024	Member
John	Tyrrell	2024 - Dec 2024	Member
Michael	Wesa	2024 - Dec 2024	Member
Tony	Wing	2024 - Dec 2024	Member
Robert	Wilson	2024 - Dec 2024	Member
Evelyn	Spence, LL.B.	2024 - Dec 2027	Member
Eric	Bruce	2023 - Dec 2024	Member
Michael	Chan	2017 - Dec 2024	Member

Other Committees/Groups Reporting to Council:

Anti-Racism and Anti-Discrimination Exploratory Working Group (AREWG):			
First Name:	Last Name:	Membership Dates:	Role:
Lisa	MacCumber	2022 - Dec 2024	Chair
Qudira	Jackson Kouakou	2020 - Dec 2024	Member
Wayne	Kershaw	2020 - Dec 2024	Member
Christian	Bellini	2023 - Dec 2024	Member

Complaints Review Councillor (CRC):			
First Name:	Last Name:	Membership Dates:	Role:
Fiona	Wang, LL.M.	2019 - 2027	Member

Government Liaison Committee (GLC):			
First Name:	Last Name:	Membership Dates:	Role:
Jeffrey	Lee	2021 - AGM 2025	Chair
Asif	Khan	2020 - AGM 2025	Vice-Chair

Order of Honour Selection Committee (OSC):			
First Name:	Last Name:	Membership Dates:	Role:
Rakesh	Shreewastav	2014 - 2017, 2019 - Dec 2024	Chair
Matthew	Xie	2018 - Dec 2024	Vice-Chair
Ken	McMartin	1993 - 2002, 2018 - Dec 2024	Member
Paul	Henshaw	2019 - Dec 2024	Member
Kiran	Hirpara	2017 - Dec 2024	Member
Wanda	Juricic	2012 - Dec 2024	Member
Bhavin	Shukla	2021 - Dec 2024	Member
Fanny	Wong	2021 - Dec 2024	Member
Michael	Wesa	2018 - Dec 2024	Member
George	Zhu	2020 - Dec 2024	Member

Regional Councillors Committee (RCC):			
First Name:	Last Name:	Membership Dates:	Role:
Pappur	Shankar	2024 - AGM 2026	Chair
Luc	Roberge	2020 - AGM 2025	Vice-Chair
Susan	MacFarlane	2021 - AGM 2025	Member
Nanda	Lwin	2023 - AGM 2025	Member
Vicki	Hilborn	2024 - AGM 2026	Member
Michelle	Liu	2023 - AGM 2025	Member
Ravinder	Panesar	2023 - AGM 2025	Member
Hannah	Ehtemam	2024 - AGM 2026	Member
Chantal	Chiddle	2024 - AGM 2026	Member
Ahmed	Elshaer	2024 - AGM 2026	Member

Decision Note – Consulting Engineer Designation Applications

Agenda Item Number	C-566-2.3
Purpose	Pursuant to subsection 61(2) of Regulation 941 under the *Professional Engineers Act*, the Consulting Engineer Designation Committee (CEDC) may make recommendations to Council in respect of all matters relating to application for designation as a consulting engineer. The CEDC makes the following recommendations.
Strategic/Regulatory Focus	Consulting Engineer designation
Motion	(requires a simple majority of votes cast to carry) 1. That Council approve the exemption from examinations and the applications for designation as Consulting Engineer as set out in Appendix A, Section 1. 2. That Council approve the applications for redesignation as Consulting Engineer as set out in Appendix A, Section 2.
Attachments	Appendix A – Report of the Consulting Engineer Designation Committee Appendix B – Legal Implications

Summary
The Consulting Engineer Designation Committee submits the following recommendations to Council. All applications were reviewed by PEO staff, the Regional Subcommittees of CEDC and later approved by CEDC on October 31, 2024.

Public Interest Rationale
One of PEO's key roles is to confer the 'Consulting Engineer' designation upon professional engineers who meet specific criteria. This designation acknowledges engineers who have demonstrated a high level of expertise and experience in delivering engineering consulting services, often surpassing the requirements for obtaining a Professional Engineer (P.Eng.) license. The consulting designation directly relates to PEO's principal mandate of regulating the practice of professional engineering and governing its members to serve and protect the public interest. By designating or re-designating only qualified professionals with the 'Consulting Engineer' designation, PEO ensures that those individuals possess the necessary qualifications, competence, and ethical standards to provide engineering consulting services to the public.

Background
Pursuant to subsection 61(2) of Regulation 941, the Consulting Engineer Designation Committee may make recommendations to Council on all matters related to the designation, as described in the Regulation. Decisions are made by Council itself.

Considerations

Examinations

With respect to initial applications for designation, clause 56(1)(d) of the Regulation refers to a requirement for applicants to pass examinations prescribed by Council or to have been exempted from such exams. There are currently no examinations set for this purpose. The request to exempt from examinations is hence a formality required by the wording of the Regulation.

The Regulation does not reference any examination requirement for redesignation as a consulting engineer.

Designation Requirements

Subsection 56(1) of the Regulation sets out the criteria for an applicant's initial designation as a consulting engineer. Failure to meet one or more of these criteria are grounds for denying the application.

The designation or redesignation expires five years from the date it is issued and the criteria for redesignation are set out in subsection 57(2) of the Regulation. Failure to meet one or more of the criteria are grounds for denying the application for redesignation.

Permission to Use the Title

Section 68 of the Regulation sets out the conditions for granting permission for a holder of a certificate of authorization to use the title "consulting engineer" or an approved variation in its business style. Failure to meet the conditions is a basis for denying a request for permission to use the title in connection with the applicant's Certificate of Authorization.

Stakeholder Engagement

Not applicable.

Recommendation(s)

Council is asked to accept the recommendations of the Consulting Engineer Designation Committee (CEDC) as set out above.

Next Steps

The applicants will be informed of the Council's decision by the CEO/Registrar, in accordance with section 58 of the Regulation.

Prepared By: Licensing

C-566-2.3
Appendix A

To the 567th Meeting of the Council of
Professional Engineers Ontario

REPORT OF THE CONSULTING ENGINEER DESIGNATION COMMITTEE
Chair: Adrian Pierorazio, P.Eng.

1. **The Committee has reviewed the following applications for DESIGNATION** and recommends to Council that these **3** applicants be exempted from examinations pursuant to Section 56(2) of O.Reg.941 and that they be considered for **DESIGNATION AS CONSULTING ENGINEER**, having met the requirements pursuant to Section 56(1) of O.Reg.941:

#	P.Eng.	Company Name	Licence #
1.1	Donaldson, David	Triton Engineering Services Limited	90532136
1.2	Lyle, Deren	Cyril J. Demeyere Limited	100174772
1.3	Rizkalla, Elia	Kenwave Solutions Inc.	100076903

2. **The Committee has reviewed the following applications for REDESIGNATION** and recommends to Council that these **19** applicants be granted **REDESIGNATION AS CONSULTING ENGINEER**, having met the requirements pursuant to Section 57(2) of O.Reg.941:

#	P.Eng.	Company Name	Licence #
2.1	Barbosa, Romeo	Green PI Inc.	100073946
2.2	Bhatti, Muhammad	Maqneecon Inc.	100080571
2.3	Casale, Cosimo	Cosmopolitan Associates Inc.	90361544
2.4	Chan, Yue On (Bernard)	Fisher Engineering Limited	90552589
2.5	Correia, Jose	Correia & Associates Ltd.	9430109
2.6	Debbert, Gordon	PPA Engineering Technologies	90258534
2.7	Dionne, Kenneth (Dale)	CIMA+	90360249
2.8	Foster, Jordan	Callidus Engineering Ltd.	100148736
2.9	Goel, Alok	Omtec Inc.	90221714
2.10	Harkness, Stephen	Cemcorp Ltd.	90281726
2.11	Kohnen, Gerhard	Kontzamanis Graumann Smith MacMillan Inc.	100007687
2.12	Lau, Tak Man	SustainGlobe Ltd.	90381203
2.13	Mikkelsen, Heide	N.J. Peralta Engineering Ltd.	100009778

2.14	Orr, Alison	Orr Brown Consulting Engineers Ltd.	90446410
2.15	Popescu, Laurentiu	LP Engineering Inc	37115508
2.16	Ruhland, Kurt	MTE Consultants, Inc.	100078854
2.17	Saffarini, Hassan	NORR Architects & Engineers Ltd.	100128946
2.18	Soligo, Michael	Rowan Williams Davies & Irwin Inc.	43575505
2.19	Tessler, Barry	Thermaco Engineering Services (1986) Ltd.	46005013

C-566-2.3
Appendix B

CONSULTING ENGINEER DESIGNATION APPLICATIONS

Legal Implications/Authority

1. Pursuant to Section 56(2), Council has the authority to exempt an applicant from any of the examinations required by section 56(1) to be taken by an applicant for a Consulting Engineer Designation if Council is satisfied that the applicant has appropriate qualifications.

   Pursuant to Section 56(1) Council **shall** designate as a Consulting Engineer every applicant for the Designation who meets the requirements set out in Section 56(1)(a-d). As a result, there does not appear to be any discretion for Council to refuse applicants who meet the requirements.

2. Pursuant to Section 57(2) Council **shall** redesignate as a Consulting Engineer every applicant who meets the requirements of section 57(2) (a-c). As a result, there does not appear to be any discretion for Council to refuse applicants who meet the requirements.

Decision Note – 2025 Councillor Training Protocol

Item	C-566-2.4
Purpose	To review and approve the *2025 Councillor Training Protocol*.
Strategic/Regulatory Focus	Governance
Motion	**That Council approves the *2025 Councillor Training Protocol* as presented at Appendix A to the Decision Briefing Note titled "2025 Councillor Training Protocol", subject to the 2025 budget scheduled to be approved by Council on November 29, 2024 at C-566-2.4.**
Attachments	Appendix A: *2025 Councillor Training Protocol* – Draft Appendix B: 2024 Training Log

Summary

Council is asked to approve the *2025 Councillor Training Protocol*, including the areas of eligibility, criteria, and process requirements.

Public Interest Rationale

N/A

Background

The purpose of the *Councillor Training Protocol* is to outline the processes, criteria, and rules to support a clear and consistent administrative process to coordinate Councillors' requests.

At its September 27, 2024 meeting, Council reviewed a draft 2024 Operating Budget which proposes $70,000 specifically for "Councillor Training". Council is scheduled to consider approval of the final budget proposal on November 29, 2024.

As a new budget year approaches, a revised Protocol for 2025 is required to document the annual amount budgeted and to revise the rules, criteria, and processes, as needed.

Considerations

Draft 2025 Protocol

The draft *2025 Councillor Training Protocol* **(Appendix A)** includes eligibility, course, and distribution of funds criteria; and process requirements related to requests, approvals, payments, and documentation.

The changes since the 2024 version include:

- Increase in amount for each Councillor from $2,800 to $3,000. Data over the past two years show that the cost for popular courses provided by Universities or the Institute of Corporate Directors is at least $2,500. An additional $200 in the 2025 allowance is intended to provide sufficient funds for travel expenses without exceeding the maximum amount.

- Addition of reference that training dollars do not include Harmonized Sales Tax (HST).

- Addition of an option for Councillors to pay for courses directly.

Training Log

The current 2024 Protocol notes that a *Training Log* will be maintained and provided to the GNC and reported to Council at regular intervals. The log includes Councillor name, training course, description, and date; enrollment and completion status; and course fee and expenses. Eight (8) courses across five (5) Councillors were taken, with course fees totalling $12,900. The log is provided at **Appendix B**.

Stakeholder Engagement

N/A

Recommendation

That Council approves the *2025 Councillor Training Protocol*.

Next Steps

Subject to Council's approval, staff will finalize the *202*5 *Councillor Training Protocol*. Information related to the revised Protocol will be communicated to Councillors, subject to Council's approval of the training funds in the 2025 budget.

Prepared By: Secretariat Team

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Toronto, ON M2N 6K9
T: 416 224-1100 800 339-3716
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2025 Councillor Training Protocol

Preamble

For the past two years, a *Councillor Training Protocol* ("the Protocol") has been in effect[1], providing the framework within which, on a voluntary basis, Councillors can indicate interest in and apply for governance training courses which are focused on key accountabilities and responsibilities for Board Directors. This protocol covers the period January 1 – December 31, 2025 and replaces the 2024 version.

Council has approved funds up to a maximum of $70,000 in 2025 for course fees and associated expenses for Councillor training.

Section 1: Purpose

One of the GNC's Charter responsibilities to *"oversee the development and implementation …of ongoing training/education plan for Council and Committee members"*. The purpose of *Councillor Training Protocol* is to outline the processes, criteria, and rules to support a clear and consistent administrative process to coordinate Councillors' requests.

Section 2: Eligibility

Councillors currently serving in the 2024-2025 term and those who will be serving in the 2025-2026 term are eligible to undertake relevant training in 2025, provided they are still current members of Council during the date(s) of training.

Section 3: Criteria

i. Training addresses topics, issues, or subject matter such as Finance, Governance and Regulatory practices that are relevant to the role as a Councillor, governance committee member, or Chair.

ii. Each Councillor is eligible to use up to $3,000 to cover course fees and associated expenses. This amount does not include Harmonized Sales Tax (HST).

iii. The majority of the funds should be used for course fees; and the remainder may be used to cover reasonable out-of-pocket expenses in accordance with PEO's Expense Reimbursement Policy.

Section 4: Process Requirements for Individual Training

Request

To make a training request:

i. Identify a training opportunity

[1]The 2023 Protocol was approved by the Governance & Nominating Committee (GNC). The 2024 Protocol was approved by Council on the GNC's recommendation.

ii. Access the *Councillor Training Request Form* (from the Resource Centre on Diligent Boards) *https://director.diligentboards.com/s/peo/d/0L2Y/p/1?rc=null*
iii. Complete and return the form to Secretariat@peo.on.ca

The request form includes details such as: Course title and description; learning objectives/reason for requesting the course; course location; and breakdown of costs between course fee and expenses.

Approval

Secretariat staff will determine that there are funds available for the Councillor's request and forward this information along with the completed *Councillor Training Request Form* to the Chair of the GNC for approval.

Subject to the availability of funds and relevancy of the training, it is anticipated that training requests will be approved. Any training request not approved will include the rationale for the decision.

Secretariat staff will advise the Councillor of the decision and request information needed to make course fee payment.

Payment

Course Fees (Option1): Payment by PEO on behalf of Councillors.
Course Fees (Option 2): Councillor pays and upon successful completion of the course, submits an expense claim and is reimbursed.

Expenses: Upon successful completion, expenses related to training courses will be reimbursed via the Certify platform, as are other Councillor expenses.

Documentation

Before expenses are claimed, Councillors are requested to send documentation/verification, enrolment, and certificates of completion to the Secretariat via email. This documentation must also be included in Councillors' Certify expense claims.

A *Training Log* will be maintained and provided to the GNC and reported to Council at regular intervals. The log will include Councillor name, training course, description, and date; enrollment and completion status; and course fee and expenses.

Section 5: Group Training

A portion of the funds may be used to provide training in a group setting.

C-566-2.4
Appendix B

Councillor Training Log - 2024

Councillor Name	Course Provider	Course Title/Name	Completion Status	Course Fee Amount (incl HST)	$2,800 Limit Reached? (Yes/No)	Balance Remaining
Sherlock Sung	Queen's University	Negotiating and Consensus Building	Completed	$2,825	Yes	$0 (estimated after taxes and estimated expense)
Vicki Hilborn	Institute of Corporate Directors	Boardroom Financial Essentials (BFE001)	Completed	$1,600	No	$1,100 (estimated after taxes and estimated expense)
Vicki Hilborn	Institute of Corporate Directors	Enterprise Risk Oversight for Directors	Completed	$1,050	No	$50 (estimated after taxes and estimated expense)
Fred Saghezchi	Institute of Corporate Directors	Governance Essentials Program	Pending Completion on Jan 30, 2025	$2,500	No	$300 (estimated after taxes and estimated expense)
Lorne Cutler	Institute of Corporate Directors	Cybersecurity in an Era of Digital Acceleration	Pending Completion on Nov 6, 2024	$1,050	No	$1,750 (estimated after taxes and estimated expense)
Lorne Cutler	Institute of Corporate Directors	Enterprise Risk Oversight for Directors	Pending completion on January 30, 2025 (class date moved due to overcrowding)	$1,050	No	$700 (estimated after taxes and estimated expense)
Lorne Cutler	Carters Professional Corporation	Charity and Non-Profit Law	Peding Completion on Nov 14, 2024	$75	No	$625 (estimated after taxes)
Susan MacFarlane	Western University	Professional Certificate in Leadership	Pending Completion on Jan 31, 2025	$2,750	No	$50 (estimated after taxes and estimated expenses
Total: Course Fees				**$12,900**		

Decision Note – Charter for the Regional Councillors Committee (RCC)

Item	C-566-2.5
Purpose	To review and approve an updated Charter (formerly Terms of Reference) for the Regional Councillors Committee (RCC).
Strategic/Regulatory Focus	Governance
Motion	That Council approves the reviewed and updated Charter (formerly Terms of Reference) for the Regional Councillors Committee (RCC), as recommended by RCC, and as presented at C-566-2.5, Appendix A.
Attachments	Appendix A – RCC Charter, recommended Appendix B – RCC Terms of Reference, 2018

Summary
That Council is asked to approve the reviewed and updated Terms of Reference for the Regional Councillors Committee (RCC) (now called Charter), as recommended by the Regional Councillors Committee (RCC).

Public Interest Rationale
No public interest rationale.

Background
The activities performed by RCC were reviewed during Regional Councillor Committee meetings in 2023 and 2024. The Terms of Reference document has been updated to a committee Charter. It reflects the current responsibilities of Regional Councillors in supporting chapter operations.

Considerations
Formatted similarly to Charter documents of PEO's four governance committees. The document has been streamlined and updated to reflect hybrid and virtual meetings, and changes in PEO's organizational structure.

Stakeholder Engagement
N/A

Options
N/A

Recommendation(s)
That Council approve the reviewed and updated Terms of Reference ("Charter") for the Regional Councillors Committee (RCC), as recommended by RCC, and as presented in Appendix A.

Next Steps
N/A

Prepared by: Chapters Office

C-566-2.5
Appendix A

Professional Engineers Ontario

Regional Councillors Committee

Mandate

The mandate of the Regional Councillors Committee (the "Committee") is to act as the responsible authority for the PEO chapters in the five PEO regions; to respond to Council, chapters and regions on matters of concern to chapters and regions; and to respond to Council on behalf of chapter matters that pertain to the regulator's Mission, Strategic Plan and Mandate.

Composition

- The Committee is a standing committee of Council
- The Committee consists of 10 elected members of PEO Council: two Regional Councillors represent each of the five regions of Ontario; Regional Councillors are elected by licence holders in each region on an annual basis for a two-year term.
- The Chair and Vice Chair are elected annually by members of the Committee for one-year terms.
- The Chair and Vice Chair may be re-elected to their positions to serve a maximum of two consecutive years.
- Chair and Vice Chair must not be from the same region.
- To ensure continuity it is desirable that the Vice Chair moves to the Chair's position once the Chair's term of service is expired.
- Council shall appoint the Chair selected by the Committee. A super majority vote by members of the Committee of 75% is required to remove the Chair.
- Once the Chair and/or Vice Chair have served for the maximum term for their respective positions, they are not eligible for reappointment to those positions. The Chair, once having served as Chair, may only serve as a general committee member.
- The President, President-elect, and Past President are ex-officio members of the committee.

Duties and Responsibilities Summarized

1. The regional Councillors Committee work to provide the means, resources and policies within PEO for the chapters to achieve their essential purposes and objectives. The budget for the operation of the Regional Councillors Committee, including annual business plan funding for all PEO chapters is compiled by the committee staff annually and submitted to the Audit & Finance Committee for inclusion in PEO budget making process.
2. Regional Councillors shall convene a congress of two delegates from each chapter in their respective regions three times per year. The objective of the congresses is to:
    - consult with the chapters on matters of concern for PEO Council

- communicate matters of PEO policy and procedure to the chapters
- administer the business planning and operation of the chapters

3. The Committee shall provide support for chapter operations through ongoing training, mentoring and engagement of chapter volunteers. The objective of this support is to:
    - provide guidance for chapter operations by attending chapter events
    - support training for chapter delegates in operation and administration of chapter activities by updating and maintaining the chapters manual
    - support forums (such as an annual conference) for sharing of ideas and best practices between all volunteers in Ontario
    - encourage chapter leaders to participate in PEO governance and regulatory roles
    - provide access to Council

Meetings

- Committee meeting quorum is reached with 6 members (50% of total membership + 1) and with representations from 4 out of 5 regions.
- The Committee expects to meet after each round of Regional Congresses (3) and up to five additional times during the year.
- Meetings are held as hybrid or virtual.
- Committee Advisor is the Director, Volunteer Engagement, with support services from Chapter Coordinators.

The Committee will review the sufficiency of this mandate annually, or sooner if deemed necessary, and recommend changes to Council for approval.

C-566-2.5
Appendix B

Regional Councillors Committee (RCC)
Terms of Reference

Issue Date: October 5, 2008
Approved by: Council

Review Date: March 23, 2018
Review by: RCC

Legislated and other Mandate approved by Council	To act as the responsible authority for the PEO Chapters in the five PEO regions. To respond to Council, chapters and regions on matters of concern to chapters and regions. To respond to Council on matters pertaining to the approved Mission, Focus and Strategic Plan of the association. The Professional Engineers Act includes no reference to Chapters of the Association of Professional Engineers Ontario, hereinafter called PEO Chapters, The Professional Engineers Act defines additional objects for the association as 1. To establish, maintain and develop standards of knowledge and skill among its licence holders. 2. To establish, maintain and develop standards of qualification and standards of practice for the practice of professional engineering. 3. To establish, maintain and develop standards of professional ethics among its licence holders. 4. To promote public awareness of the role of the Association. 5. To perform such other duties and exercise such other powers as are imposed or conferred on the Association by or under any Act. R.S.O. 1990, c. P.28, s. 2 (4). PEO Chapters are defined in Regulation 941, as amended, as ""Chapter" means a chapter established pursuant to the by-laws", By-Law No. 1 of the Association of Professional Engineers of Ontario states specifically that "There shall be chapters of the association constituted in accordance with the by-laws.", By-Law No. 1 of the Association of Professional Engineers of Ontario states the purpose of Chapters is "to maintain a local presence for the engineering profession through activities of benefit to engineers and the communities they live in", By-Law No. 1 of the Association of Professional Engineers Ontario enables Council to establish from time to time standard rules and procedures governing the operating of chapters and the conduct of their affairs.

Key Duties and Responsibilities	Regional Councillors shall convene a congress of two delegates from each Chapter in their respective regions three times per year. The objective of the congresses is to: 1. consult with the Chapters on matters of concern for PEO Council 2. communicate matters of PEO policy and procedure to the Chapters 3. Administer the business planning and operation of the Chapters The Regional Councillors Committee shall convene a conference of delegates from all Chapters in Ontario at least once per year. The objective of the conference is to: 1. provide training for Chapter delegates in operation and administration of Chapter activities 2. provide a forum for sharing of ideas and best practices between all Chapters in Ontario The regional Councillors Committee work to provide the means, resources and policies within PEO for the Chapters to achieve their Mandate, Essential Purposes and Objectives as set out in the Terms of Reference for Chapters. The budget for the operation of the Regional Councillors Committee, including funding for all PEO Chapters based on their annual business plans, regional offices and PEO staff support is prepared by the committee annually and submitted to the Finance Committee for inclusion in PEO budget making process.
Success Measurements of Key Duties and Responsibilities	Success is measured in the extent to which each PEO Chapter has the volunteers, executives, officers, funding and support necessary to fulfill their essential purposes as set out in the Terms of Reference for Chapters. Reporting by the Chapters is at each of the three congresses per year in each region. The committee submits a written report to Council for distribution to PEO members at each Annual General Meeting. RCC is in compliance with Committee and Task Force Policy and the spirit of the PEO Committee Guidelines.
Constituency & Qualifications of Committee Members	Council has designated the Regional Councillors Committee as a board committee. The committee is composed of 10 elected members of PEO council. Two councillors represent each of the five regions of Ontario. Regional councillors are elected by members at large on an annual basis for a two year term. The definition of regional boundaries of PEO is as set out in the Regulation 941. The Chair is elected by and from members of the Regional Councillors Committee for one-year term. Council shall appoint the Chair selected by the committee for a one-year term. A super majority vote by members of the committee of 75% is required to remove the Chair.

Term Limits for Committee Chair and Vice Chair	The Chair and Vice Chair are elected annually for a one-year term, from Annual General Meeting to Annual General Meeting. The Chair and Vice Chair may be re-elected to their positions to serve a maximum of two (2) consecutive years. Chair and Vice Chair must not be from the same region. To ensure continuity, it is desirable that the Vice Chair moves to the Chair's position, once the Chair's term of service is expired. Once the Chair and/or Vice Chair have served for the maximum term for their respective positions, they are not eligible for reappointment to those positions. The Chair, once having served as Chair, may only serve as a general committee member.
Recruitment of New Committee Members	The committee is composed of 10 councillors. One councillor in each of the five regions is elected annually by PEO members in their respective regions and serves a two year term. Each region shall have an Election and Search committee to ensure that there are candidates in each region. The chair of the Election and Search committee in each region is the councillor serving in the first year of their elected term representing that region.
Quorum	6 members (50% of total members plus 1) and with a minimum representation from 4 out of 5 Regions
Reporting Requirements	The Chair shall submit an annual report, not later than January 15th of each year to the Council of the activities of the Committee.
Meeting Frequency & Time Commitment	The Committee expects to meet up to six times during the year. Members are expected to attend at least four meetings per year. Meetings can be held face-to-face and/or via teleconference.
Committee Advisor	Manager, Chapters
Staff Support	Chapter Coordinator

Decision Note – Discontinuing the "Services of The Engineer Acting Under the *Drainage Act*" Practice Guideline

Agenda Item No.	C-566-2.6
Purpose	For PEO's Council to approve the discontinuation of the 1998 "Services of the Engineer Acting Under the *Drainage Act*" practice guideline.
Strategic/ Regulatory Focus	Strategic/regulatory
Motion	That RPLC recommends to Council that PEO's practice guideline titled 'Services of the Engineer Acting Under the Drainage Act' be discontinued.
Attachments	Appendix A – Policy Impact Analysis – *Drainage Act* Practice Guideline Appendix B – Stakeholder Engagement Report

Summary
Following a review of PEO's guideline "The Services of the Engineer Acting Under the Drainage Act," (the Guideline) last revised in 1998, along with a policy impact analysis (Appendix A), staff have determined that potential risks associated with professional engineers providing services under the *Drainage Act* are adequately mitigated by the Ministry of Agriculture, Food, and Agribusiness and Ministry of Rural Affairs ("the Ministry"), the ministry responsible for the administration of the *Drainage Act*. The Ministry's Publication 852 in 2018, along with two Fact Sheets that were created to address the new processes in O.Reg.500/21 offer the necessary updated guidance to professional engineers working under the *Drainage Act* and its associated regulations.

Public Interest Rationale
PEO regulates the profession in the public interest by one of PEO's Secondary Objectives under the *Professional Engineers Act*, "establishing, maintaining and developing standards practice for the practice of professional engineering."

Background

- Council has tasked RPLC with reviewing PEO's practice guidelines. Guideline review engages PEO's policy development process, and a policy impact analysis tool is used to examine the issues the guideline seeks to address. Risks of harm to the public interest are identified and PEO's regulatory and non-regulatory approaches are analyzed as to whether they effectively address risk, whether the guideline has a useful function, and what improvements can be made to the guideline. In this case, no unmitigated risks were identified.

- The Guideline was last revised in 1998. In 2018, the Ministry developed and published "A Guide for Engineers Working under the *Drainage Act* In Ontario, Publication 852" to provide specific guidance to engineers operating under the *Drainage Act* in Ontario. Subsequently, the Ministry issued two fact sheets that provide updates pertaining to O. Reg. 500/21 under the *Drainage Act*:
    - https://www.ontario.ca/page/updating-engineers-report-due-unforeseen-circumstances-during-drainage-construction
    - https://www.ontario.ca/page/minor-improvement-projects-under-drainage-act-1990

Considerations

- The risks associated with professional engineers providing services under the *Drainage Act* are adequately mitigated by the Ministry, the ministry responsible for the administration of the Drainage Act. No risks have been identified.

- Ministries are responsible for defining the scope of engineering work in their legislation and requirements, while PEO is responsible for interpreting the engineer's professional responsibilities of that legislation as it applies to the *Professional Engineers Act*.

- The number of readers for the 1998 guideline is relatively low. From July 2023 till March 2024 only 73 different readers viewed this PEO guideline, likely due its outdated content.

- Stakeholders are supportive of the proposal to discontinue this practice guideline.

Please see the policy impact analysis at Appendix A for more detail.

Stakeholder Engagement
Please see the Stakeholder Engagement Report at Appendix B for more detail.

Recommendation(s)
Proceed to discontinue the practice guideline and direct practitioners to the Ministry's resources instead.

Prepared By: Policy Staff

POLICY IMPACT ANALYSIS (PIA) TOOL

Title of the Proposal: Discontinuation of PEO's "Services of the Engineer Acting Under the *Drainage Act*" Practice Guideline

PART 1: POLICY INITIATION

CONTEXT AND PROBLEM DEFINITION

1. **Clearly identify and define the problem being addressed. Where did it originate? Whom does it potentially affect?**

   The current "Services of the Engineer Acting Under the *Drainage Act*" Practice Guideline was last revised in 1998. It was reviewed by the Professional Standards Committee on November 8, 2022, where the committee recommended discussing the guideline in 2023 to decide on how to proceed.

   On December 07, 2022, PEO staff received a request from the executive member of the OSPE Land Drainage Committee to distinguish PEO's 1998 practice guideline from Publication 852, which was developed and published by the Ministry of Agriculture, Food, and Agribusiness and Ministry of Rural Affairs ("the Ministry") in 2018. Since 2018, the Ministry also published two fact sheets that provide Drainage Act updates related to O.Reg 500/21 under the Drainage Act:
   - https://www.ontario.ca/page/updating-engineers-report-due-unforeseen-circumstances-during-drainage-construction
   - https://www.ontario.ca/page/minor-improvement-projects-under-drainage-act-1990

   On December 15, 2022, staff received further correspondence from the executive member of the OSPE Drainage Committee, currently serving as the Chair of the Committee, indicating that, in light of the Ministry's publication and other guidance, PEO's practice guideline may no longer be necessary.

2. **Does PEO have jurisdiction to address this problem (cite section of Act and/or Regulations)? What other organizations (e.g., companies, governments) have shared responsibility for or an interest in this problem?**

   PEO has the authority under its Additional Object of the Association in section 2(4) of the Professional Engineers Act: "To establish, maintain and develop standards of qualification and standards of practice for the practice of professional engineering. " Furthermore, Council has the authority under paragraph 17 of section 7(1) of the Act to make regulations "respecting and governing standards of practice and performance standards for the profession".

RISK IDENTIFICATION

3. **Does this problem create a risk of harm? If yes, explain the risks. How do they arise?**

   In February 2024, PEO staff reviewed PEO's drainage guideline and the Ministry's Publication 852 with the Ministry staff to determine whether there was a public safety need to keep PEO's guideline. It was determined that any potential risks associated with professional engineers providing services

under the *Drainage Act* are adequately mitigated by the Ministry. No risk of harm found from discontinuation.

4. **What are the possible outcomes or consequences of these risks? Explain the potential level of harm (quantify frequency and impact).**

   No risk of harm identified

5. **What information or data about the risk of harm are currently available? From what sources? Does any further information need to be gathered, and from whom?**

   N/A, as risk will be under the ministry, instead of PEO.

6. **Are the identified risks currently managed or mitigated? How and by whom? To what extent (full/partial)? Will the risks of harm diminish if left unchecked?**

   Yes, all potential risks are adequately managed by the Ministry.

7. **Are there any alternatives to regulation that will mitigate identified risks? If alternatives exist, explain why they have not been pursued.**

   N/A, alternative could be to update the guideline, but it will be meaningless, as publication 852 already covers the risks for PEO.

IDENTIFICATION OF NEXT STEPS FOR REGULATORY POLICY DEVELOPMENT

8. **Which stakeholder group(s) need to be engaged on this problem? How will they be engaged?**

   The Ministry, OSPE's Land Drainage Committee, the Land Improvement Contractors of Ontario (LICO), Ministry of Transportation and the Drainage Superintendents Association of Ontario (DSAO) were consulted on the discontinuance proposal. The Ministry and OSPE's LDC both provided endorsement letters. The other organizations did not reply or replied that there is no risk from discontinuation of the PEO guideline, and they fully support PEO's proposal to discontinue the old guideline.

   As a result of a subsequent month-long open consultation on the proposal to discontinue the guideline on the PEO website (prompted by an email to 1,299 licence holders, eight indigenous engineering companies for indigenous communities, three drainage organizations and 20 subscribers to the PEO guideline updates) conducted from September 23 to October 23, only two comments were received, both pertaining to the Ministry's publication 825 rather than the PEO guideline itself.

9. **What further research is required? How will it be done?**

   No further research is required. PEO will monitor any feedback through Practice Advisory inquiries.

8. **What further data analysis needs to be done?**

No further data analysis is required at this time.

9. What further legal analysis needs to be done?

No further legal analysis is required at this time.

10. What is the expected timeframe to complete this policy work?

November 2024, subject to approval by Council.

RPLC recommendation to Council: That RPLC recommends to Council that PEO's practice guideline titled 'Services of the Engineer Acting Under the Drainage Act' be discontinued.

Appendix B

Stakeholder Engagement and Consultation Report

Ministries consultation:

- On February 9, 2024, PEO consulted with the Ontario Ministry of Agriculture, Food & Agribusiness and Ministry of Rural Affairs (OMAFA, formerly known as OMAFRA), Environmental Management Branch, which supported discontinuing the PEO guideline. An employee of this branch, who is a professional engineer, is also a contributor to Publication 852. The OMAFA Manager from Approvals, Certification and Licensing Unit from the OMAFA Environment Management Branch provided PEO with an endorsement letter on October 8, 2024, supporting the initiative to discontinue the guideline.

- The Ministry of Transportation, [Highway Drainage] supported the discontinuation on April 5, 2024, via email.

Organizations and groups consultation:

- The members of the **OSPE Land Drainage Committee** were invited to raise any concerns or provide feedback regarding the proposed discontinuation of the PEO guideline between February 16, 2024, and March 18, 2024. The Drainage Committee provided joined feedback that it had no concerns regarding the discontinuation.

- Both the **Land Improvement Contractors of Ontario (LICO)**, and the **Drainage Superintendents Association of Ontario (DSAO)** did not raise any concerns for discontinuation during consultation period.

Individual consultations:

- On September 23, 2024, PEO contacted over 1,300 licence holders identified by "drainage" area of practice, along with additional 8 rights holders and indigenous communities in Ontario, in early October, giving one month for comment. A total of three comments were received with the majority expressing support for discontinuation; one comment expressed dissatisfaction with the OMAFRA's fee to access Publication 852.

Conclusion:

The Ministry is supportive of discontinuing the guideline, and as above mentioned, also sent PEO endorsement letter for this.

All feedback received during or following the consultations were provided to the RPLC unfiltered, and no address by staff is required as feedback was positive, except for the $25 cost for OMAFRA Publication 852, which is not under PEO's jurisdiction.

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Information Note – 30 by 30 Metrics

Agenda Item No.	C-566-2.7
Purpose	For staff to provide an annual report to Council on the status and metrics for the 30 by 30 initiative to have 30 per cent of newly licensed engineers who are women by the year 2030.
Strategic/Regulatory Focus	Licensing Initiative
Motion	**No motion required.**
Attachments	Appendix A – 30 by 30 Metrics – 2024 Report

Summary

The sixth annual report of 30 by 30 metrics, including the 2023 metrics, is shown in Appendix A.

Public Interest Rationale

The 30 by 30 initiative is a commitment to raising the percentage of newly licensed engineers in Ontario who are women to 30 per cent by 2030.

Background

The 30 by 30 Task Force was formed by PEO in 2018 to show visible leadership in addressing the underrepresentation of women licensed in the profession by formally endorsing the 30 by 30 initiative with Engineers Canada and committing to undertaking an action plan to resolve this inequity.

The 30 by 30 initiative is a commitment to raising the percentage of newly licensed engineers in Canada who are women to 30 per cent by 2030. In 2018, only 17.8 per cent of newly licensed engineers in Ontario were women.

At its March 2020 meeting, Council approved establishing an annual check-in meeting with key stakeholders to track metrics until 2030. This annual check-in takes place each Fall, with the most recent meeting taking place on October 2, 2024. The metrics gathered from these meetings feed into the annual reporting to PEO Council each year at its November meeting. This yearly check point was proposed to inform Council of the annual progress towards achieving the 30 by 30 goal. The first annual report was tabled at the November 15, 2019 Council meeting using 2018 as the baseline year for metrics. Current metrics include the baseline 2018 metrics as well as the 2019 to 2023 metrics collated to date.

In December 2021, the Task Force was stood down, as per the Terms of Reference. Ownership of the 30 by 30 work was transferred to PEO's 30 by 30 Task Force Staff Advisor and will be sustained until 2030. Staff continues to collect metrics yearly and has continued to facilitate PEO's inaugural 30 by 30 Annual Check-in with key stakeholders each September or October. Staff has also continued to reach out to employers and work with them in becoming a 30 by 30 Champion.

Considerations

N/A

Stakeholder Engagement

Staff continues to reach out to employers and work with them in becoming a 30 by 30 Champion through the External Relations department. This includes presentations on licensing requirements, and employer awareness sessions or meetings to review the 30 by 30 goals.

Options

N/A

Recommendation(s)

N/A

Next Steps

N/A

Prepared By: External Relations

Professional Engineers
Ontario

C-566-2.7
Appendix A

30 by 30 Metrics
2024 PEO Report

Prepared by: Tracey Caruana, P.Eng.

A message from PEO's Past 30 by 30 Task Force:

"We are not just a regulator of the practice of professional engineering, we are a self-governing regulator. We have been granted that privilege by the people of the province because of the trust they have placed in us to regulate the profession on their behalf. Self-regulation is a privilege, and obligation, which we must take the utmost care to respect. There are many recent examples of where, when that trust breaks down, society, through its elected officials, alters the governance framework and imposes more direct control over the affairs of the regulator.

The 30 by 30 initiative speaks directly to this trust between society and regulator. If we, as a self-governing profession, are not reflective of the society on whose behalf we serve, society has every right to question our ability to equitably regulate. Society recognizes that gender equity is a goal that a just society should strive towards. The evidence is irrefutable that a more equitable society is a healthier society. Most other major professions have either achieved gender parity or made great strides towards it. With a current gender ratio of less than one woman in five, engineering is an anomaly.

The 30 by 30 initiative is, admittedly, a stop-gap measure towards gender parity. But it allows us the opportunity for critical self-reflection, to examine the underlying reasons why our profession is not attracting "the best of the best" women in the same number as men. Society would expect no less."

30 by 30 Metrics

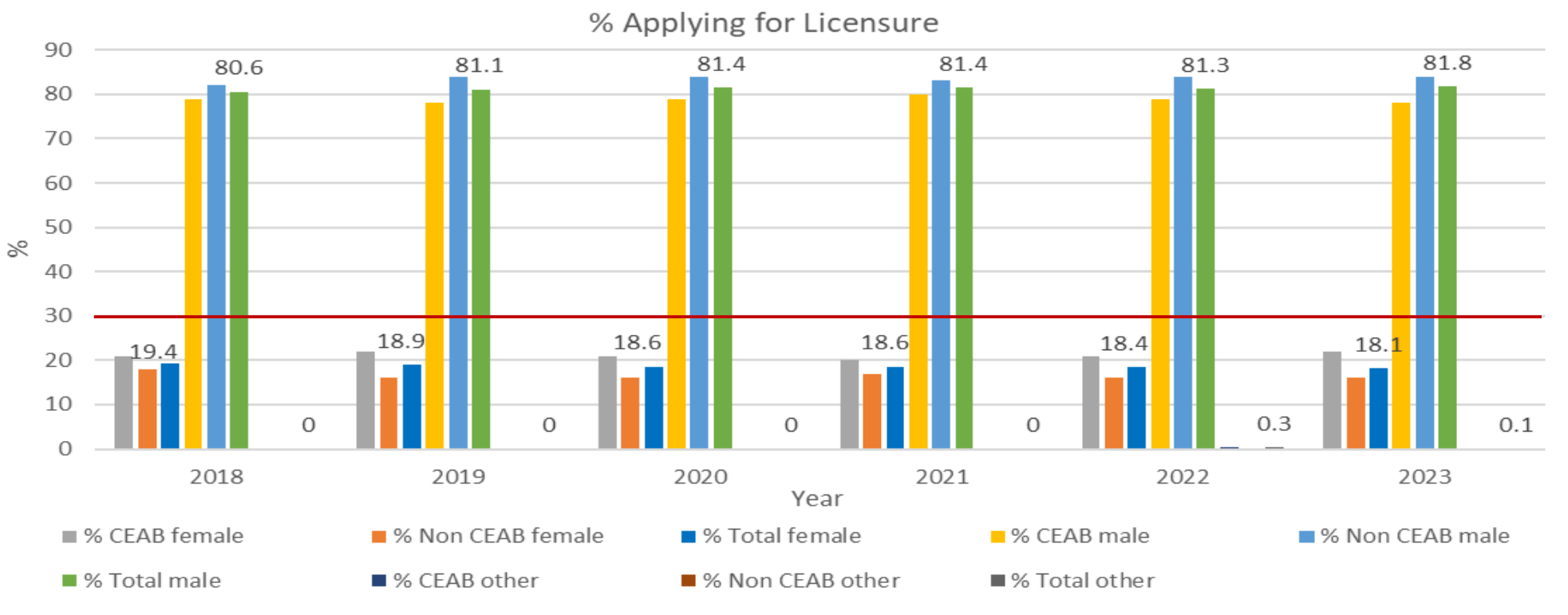
- Data is based on year-end results for 2018 to 2023
- It is anticipated that this will be a yearly reporting to Council on the previous year's results
- 2024 data will be available in November 2025

Licensing Metrics

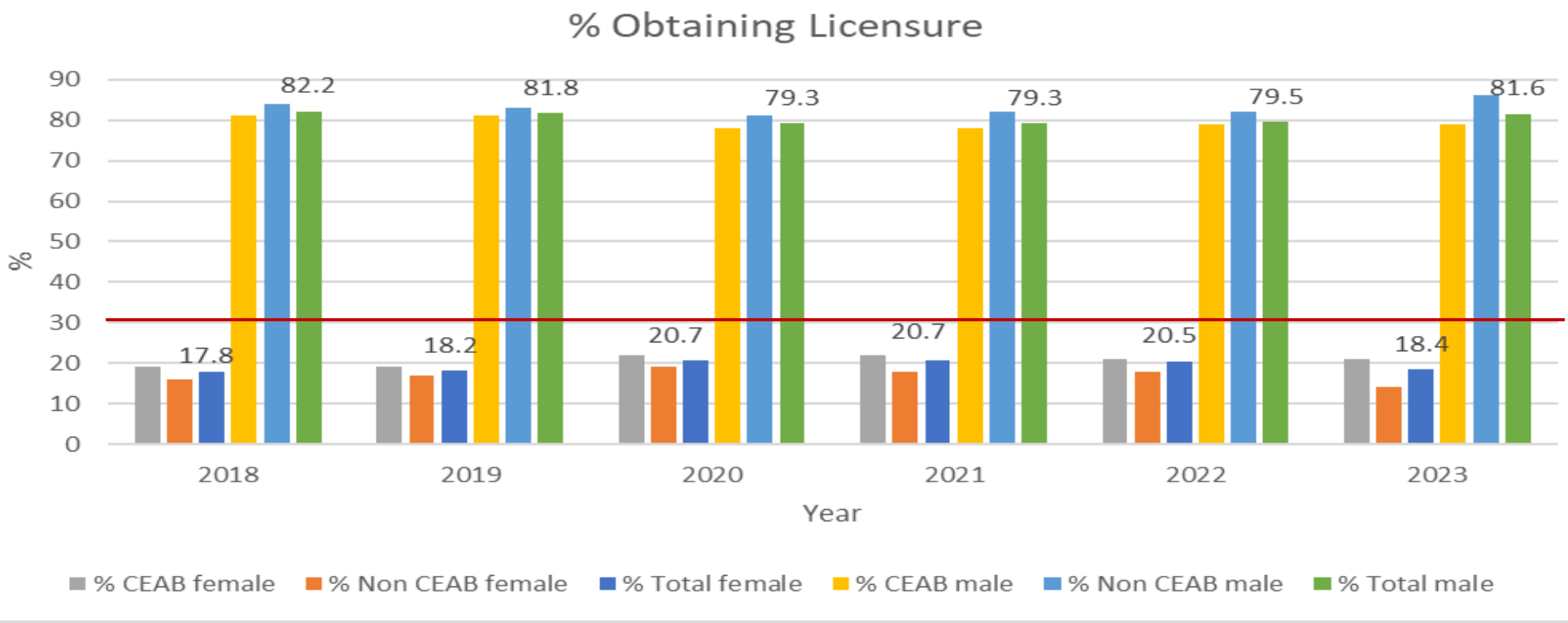
Established

* Disclaimer: In reviewing our data, we acknowledge that the terms “female”, “male” and “other” were used instead of the more accurate and inclusive terms “woman,” “man,” “non-binary/genderqueer,” and “two-spirit.” This terminology, while reflective of the language used at the time of data collection, does not align with our current commitment to equity, diversity and inclusion. Moving forward, we will ensure that our language evolves to reflect best practices, respecting how individuals identify. We remain dedicated to continuously improving our approach to diversity and representation in all aspects of our work.

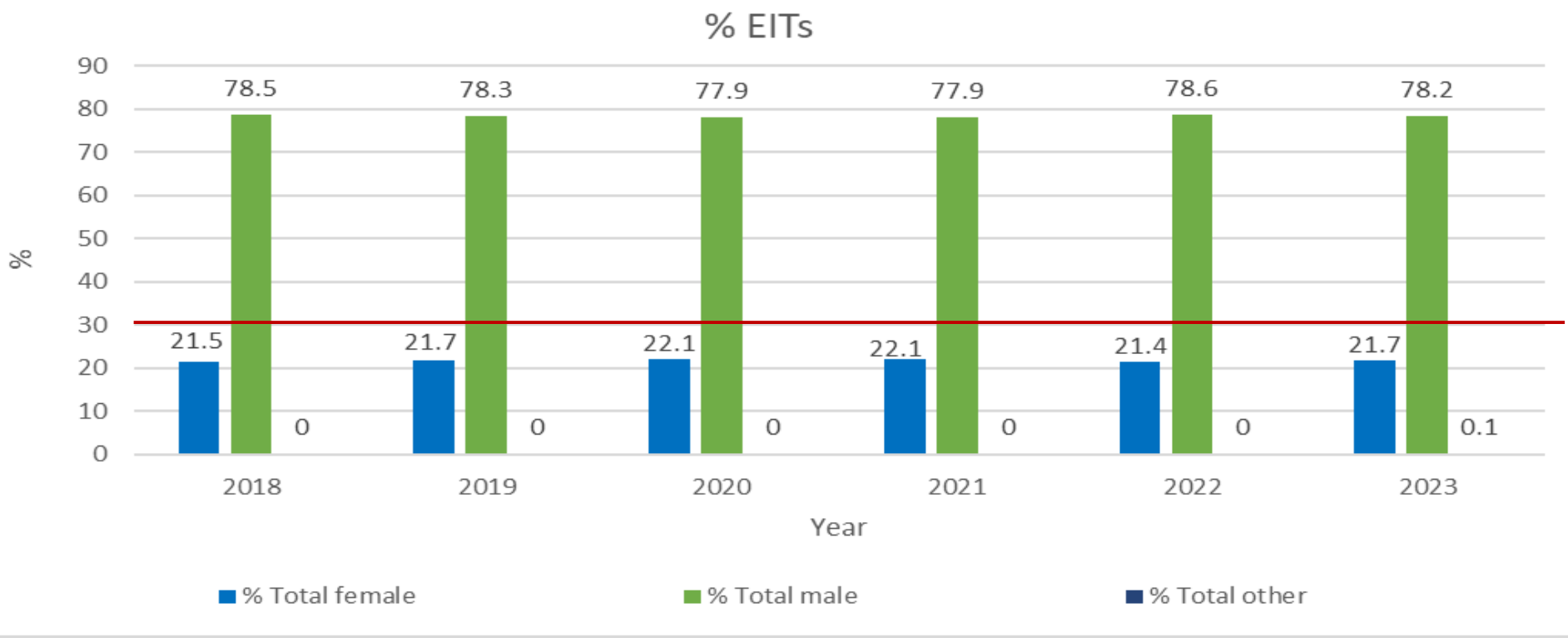
Percentage Applying for Licensure who are Female*



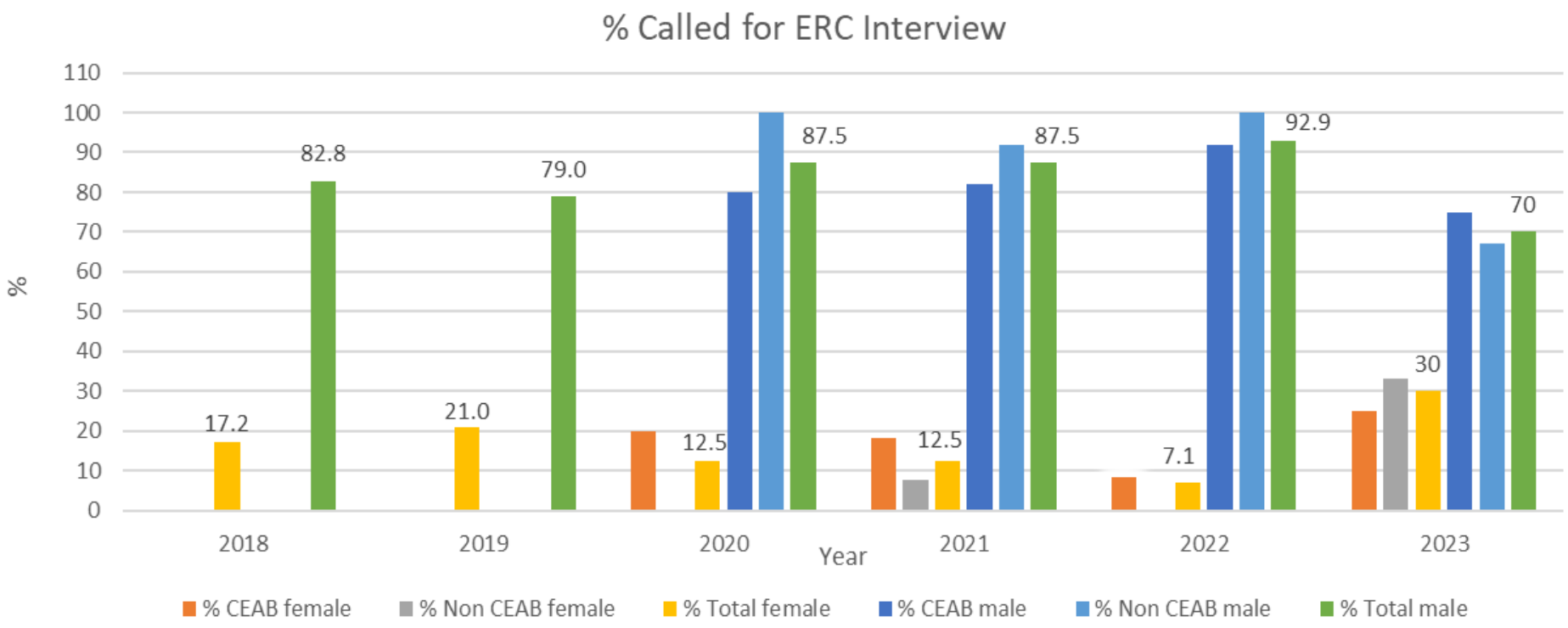
Percentage Obtaining Licensure who are Female*



Percentage EITs who are Female*



Percentage Called for ERC Interviews who are Female*

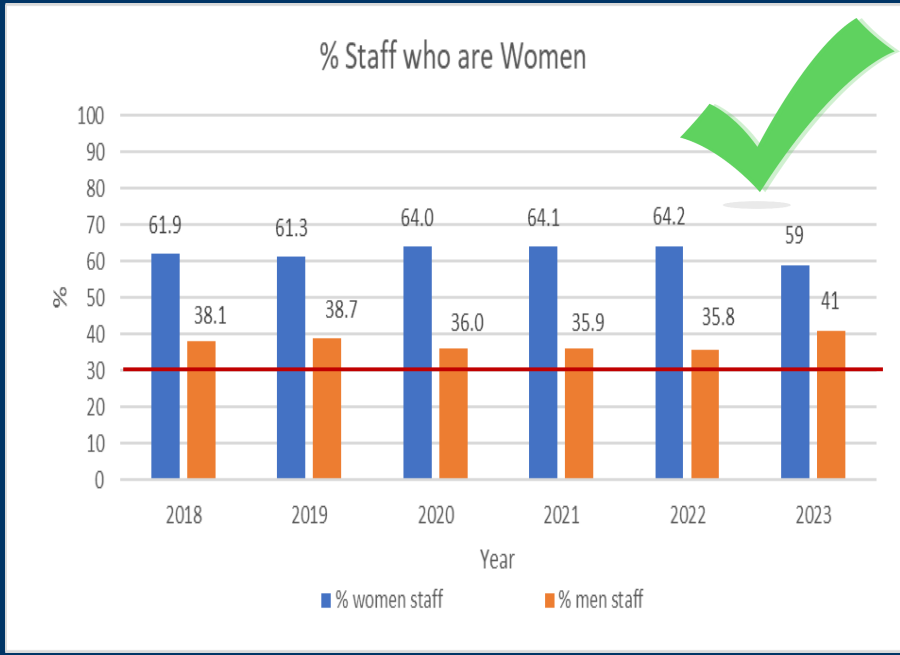


PEO Internal Metrics

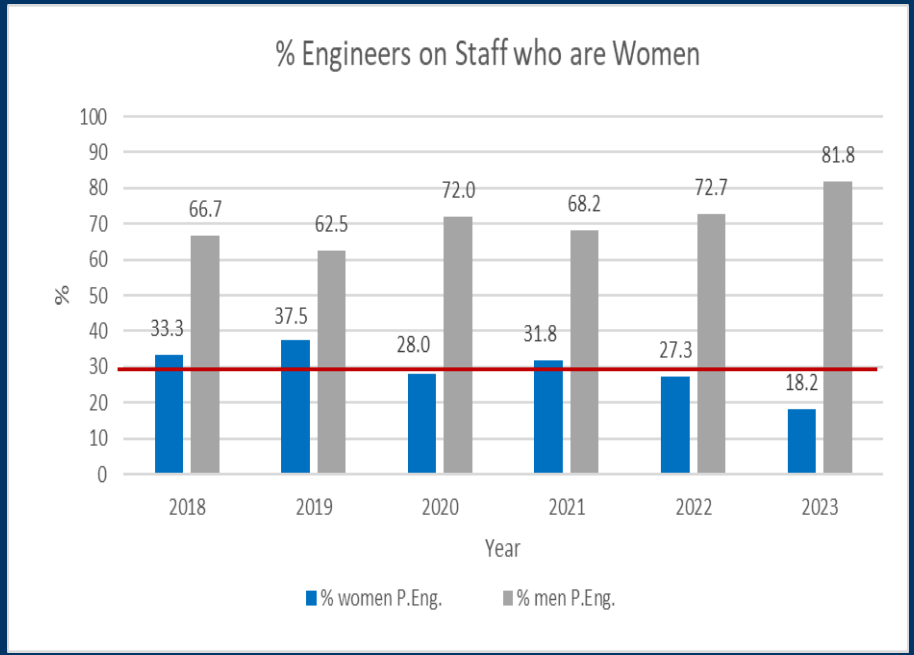
Established

PEO Staff Metrics

59% of total staff are women

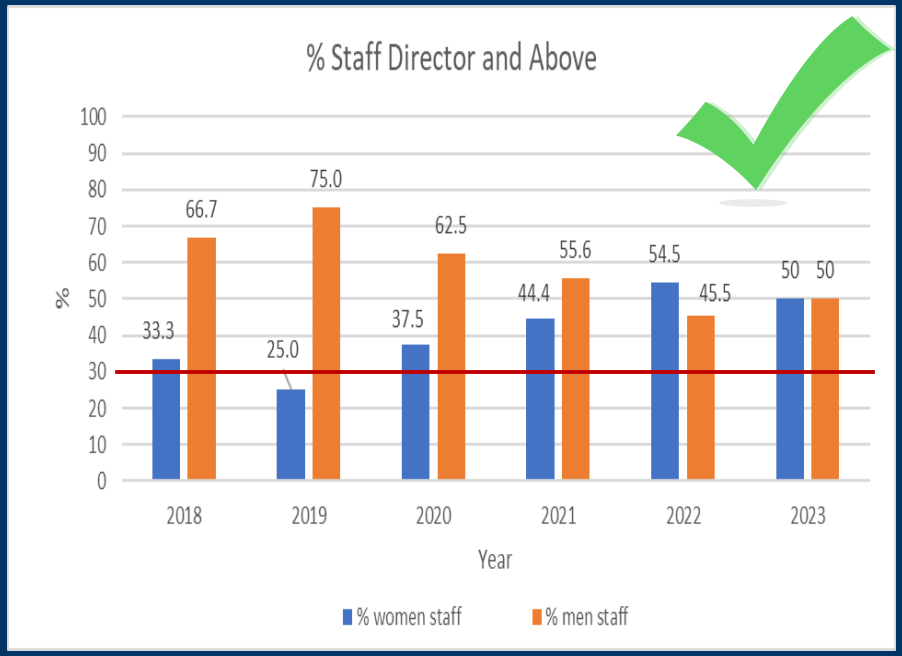


18% of P.Eng. staff are women

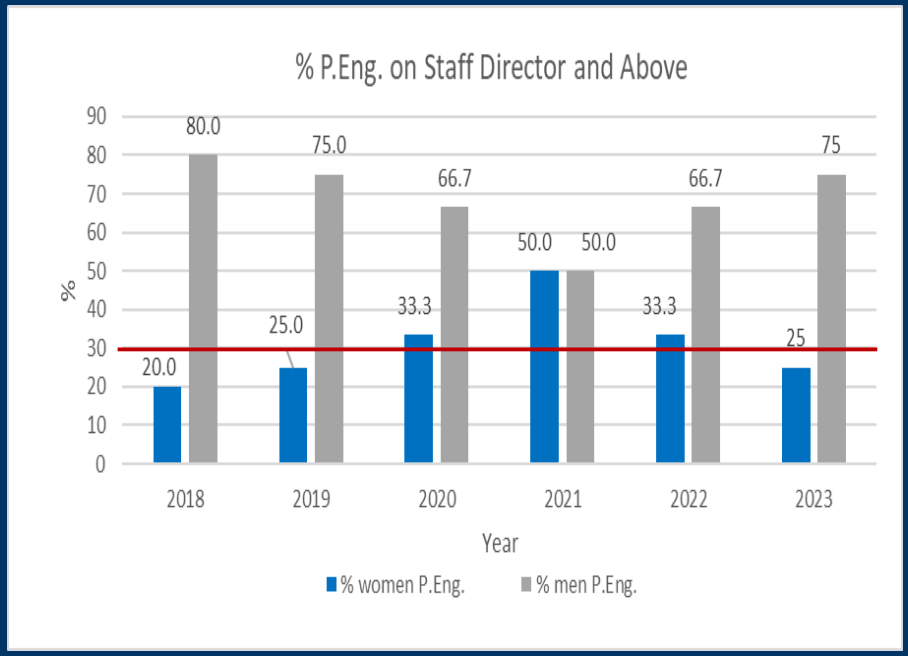


PEO Staff Leadership Metrics

50% women staff are Director and above

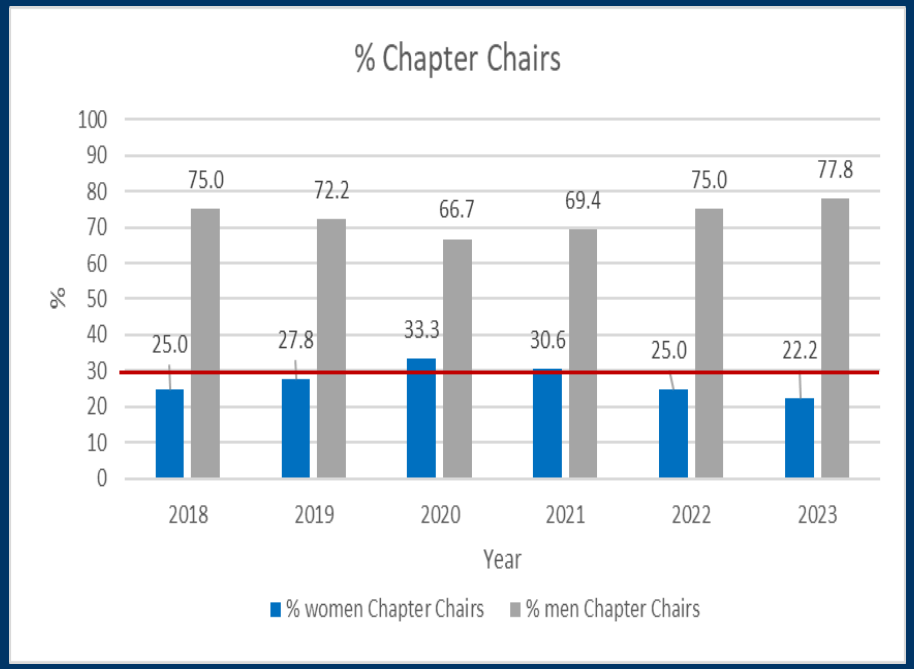


25% women P.Eng. are Director and above

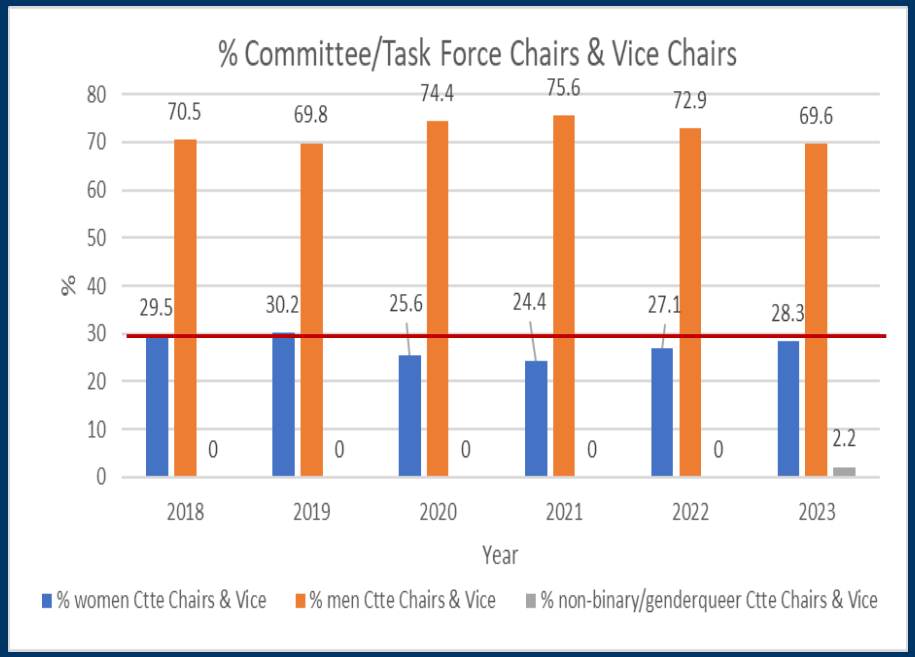


PEO Volunteer Leadership Metrics

22% Chapter Chairs are women

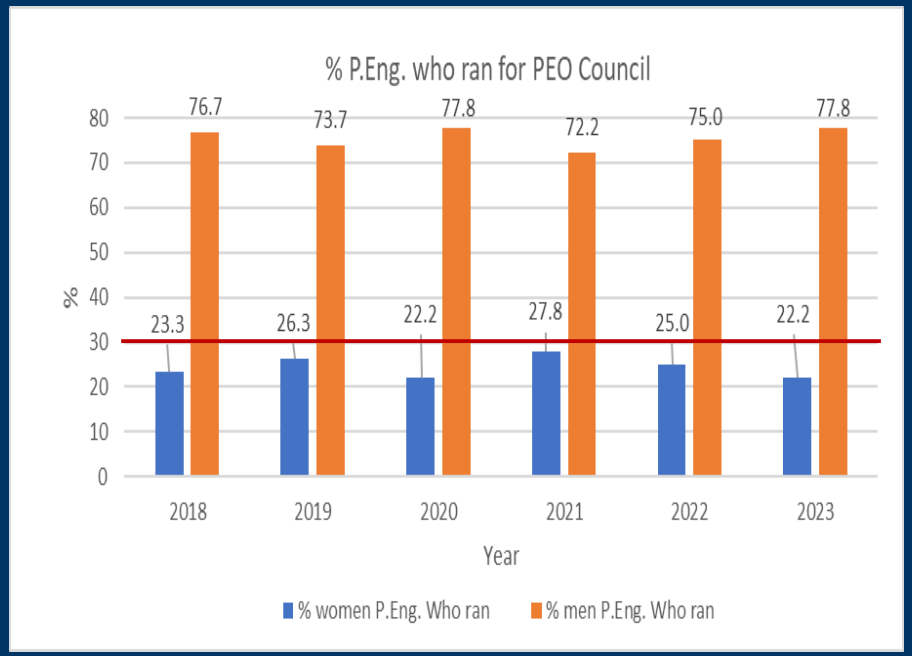


28% Committee/Task Force Chairs & Vice-Chairs are women

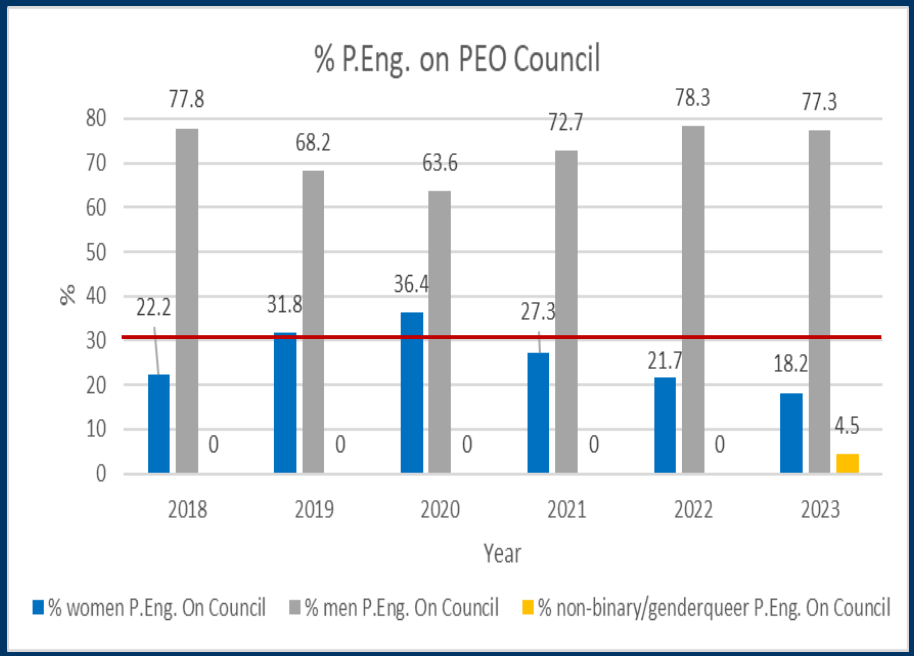


PEO Council Metrics

22% P.Eng. who ran for Council are women



18% P.Eng. on Council are women



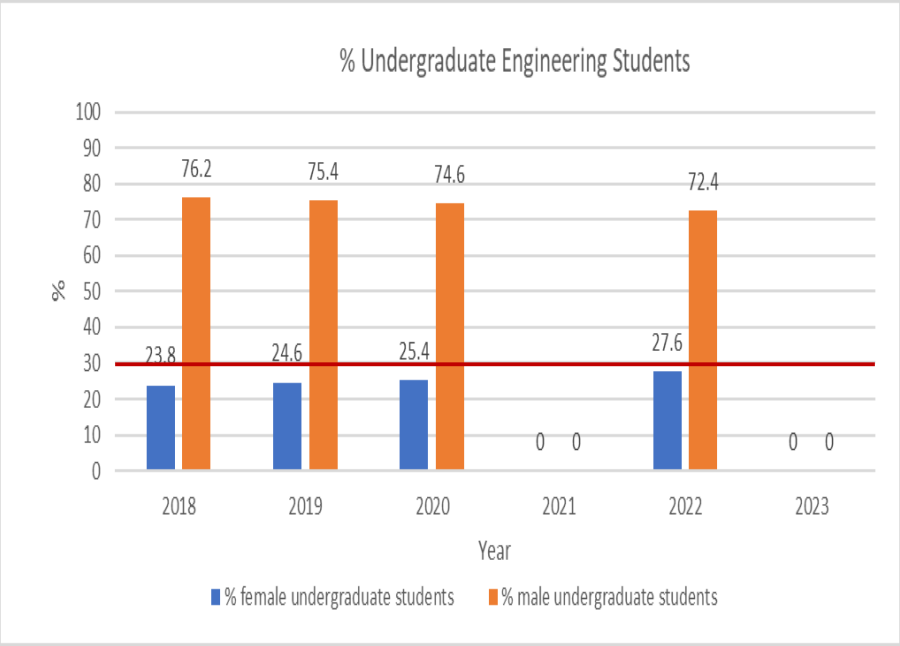
University Metrics

Established

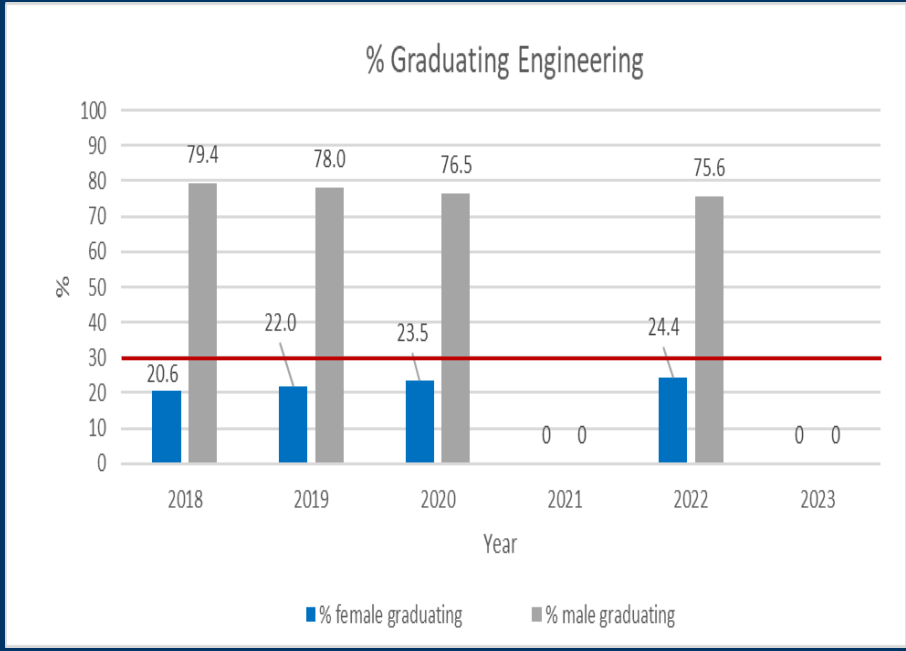
*Note: Engineers Canada did not conduct an Enrolment and Degrees Awarded survey in 2023, and the survey is now conducted every other year. The most recent numbers are from 2022. Note that the terminology reflects that from the 2022 Engineers Canada “Enrolment and Degrees Awarded Report” - https://engineerscanada.ca/reports/enrolment-and-degrees-awarded-report/2022-canadian-engineers-for-tomorrow#femaleidentified-undergraduate-enrolmentnbsp

Engineering Students*

28% female-identified undergraduate engineering students

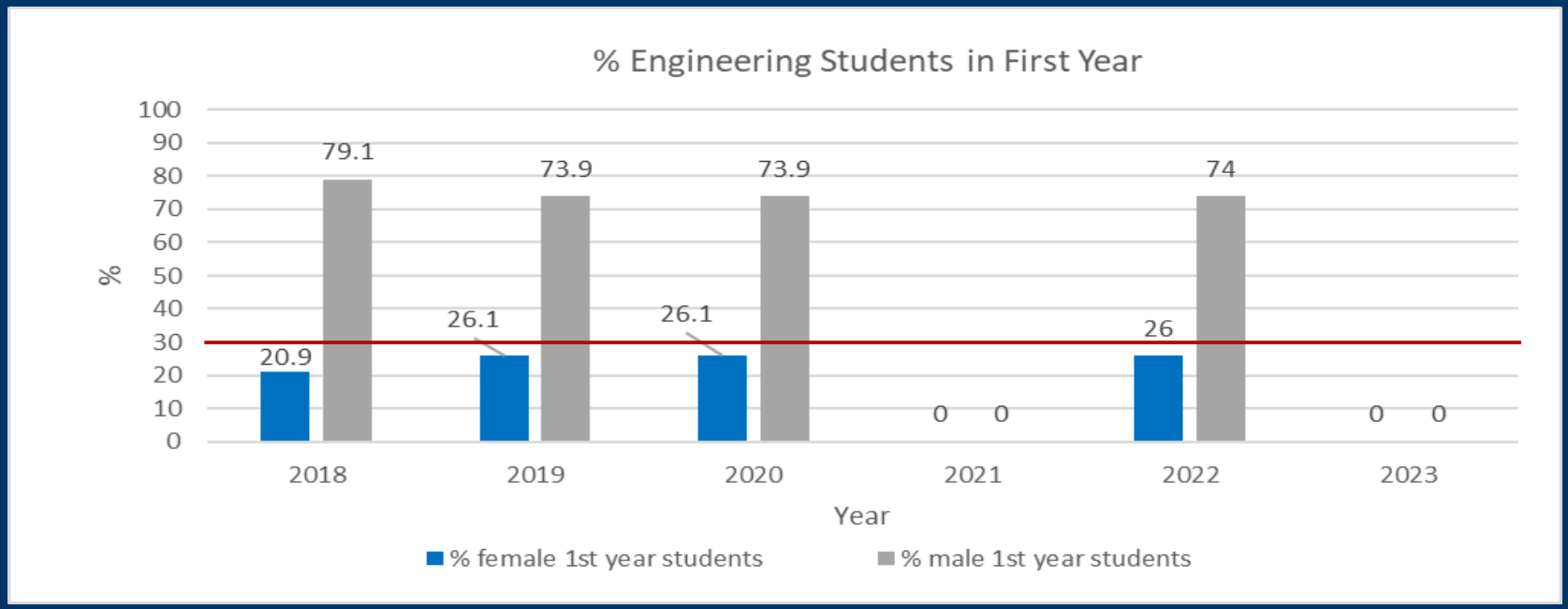


24% female-identified engineering students graduating



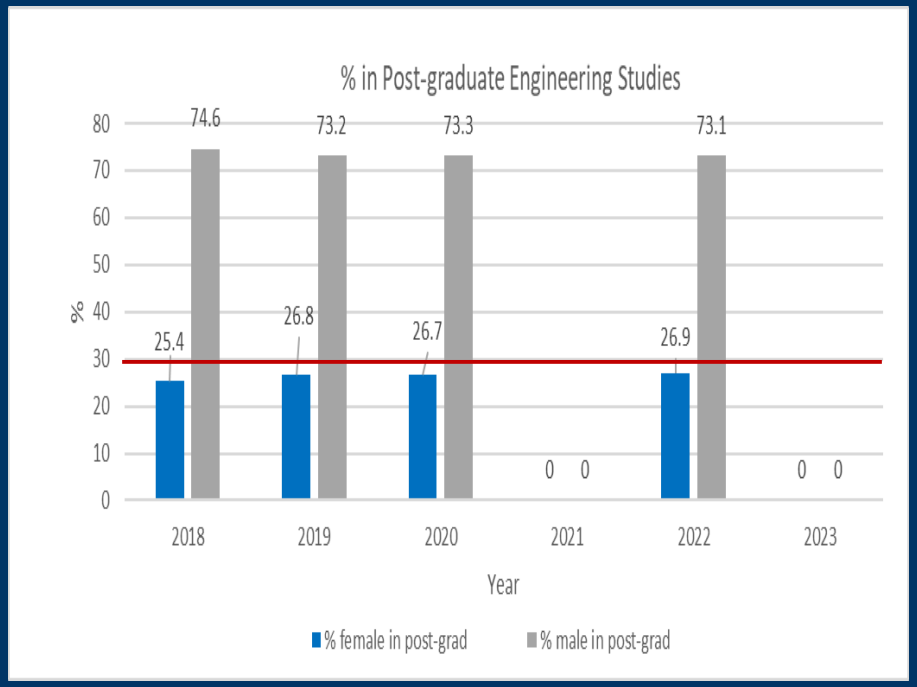
Engineering Students*

26% female-identified undergraduate engineering students in first year

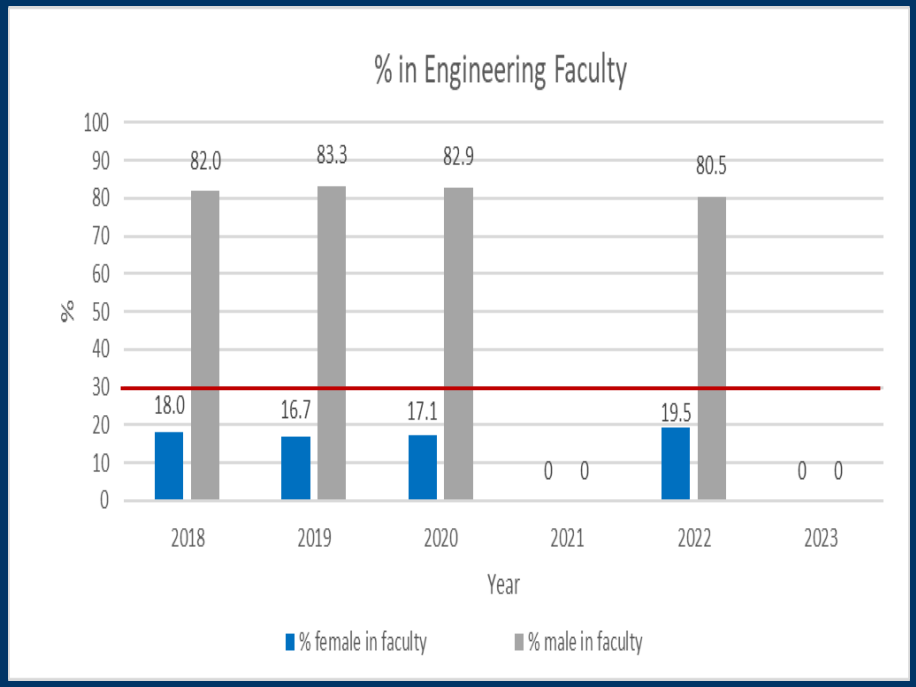


Post-graduate & Faculty*

27% female-identified post-graduate enrolment



19.5% female-identified faculty members



Employer Metrics

Proposed

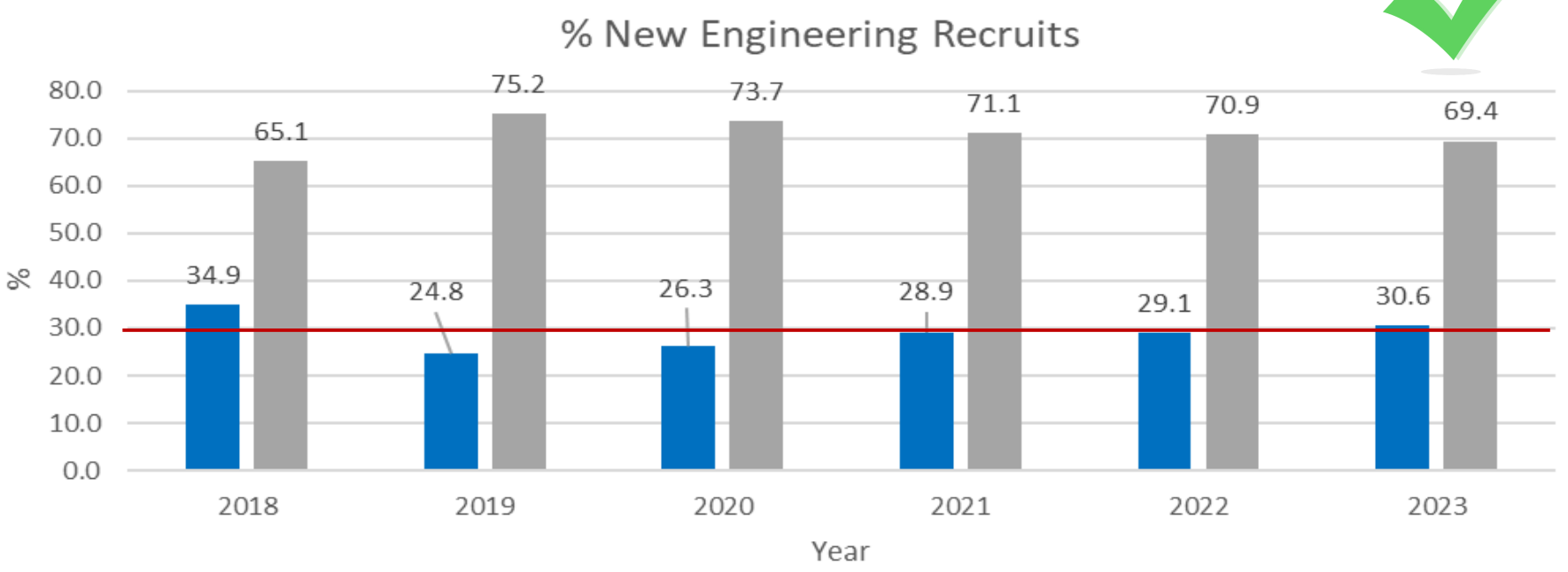
Note that the following metrics includes four employers as of 2023

Employer Metrics

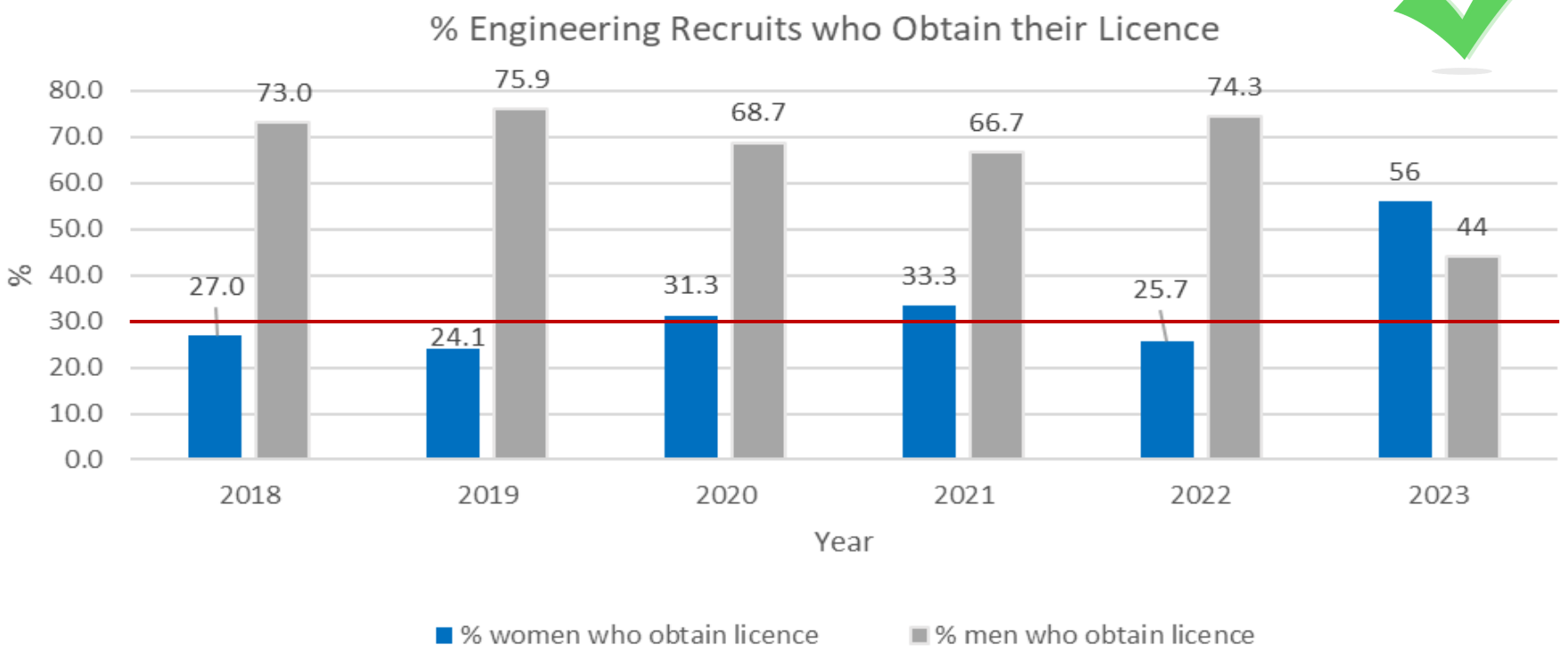
Metrics to be obtained from employers who agree to track…

- % new engineering recruits who are women
- % of women engineering recruits who obtain licensure
- % women engineers in leadership positions (C-suite; management)

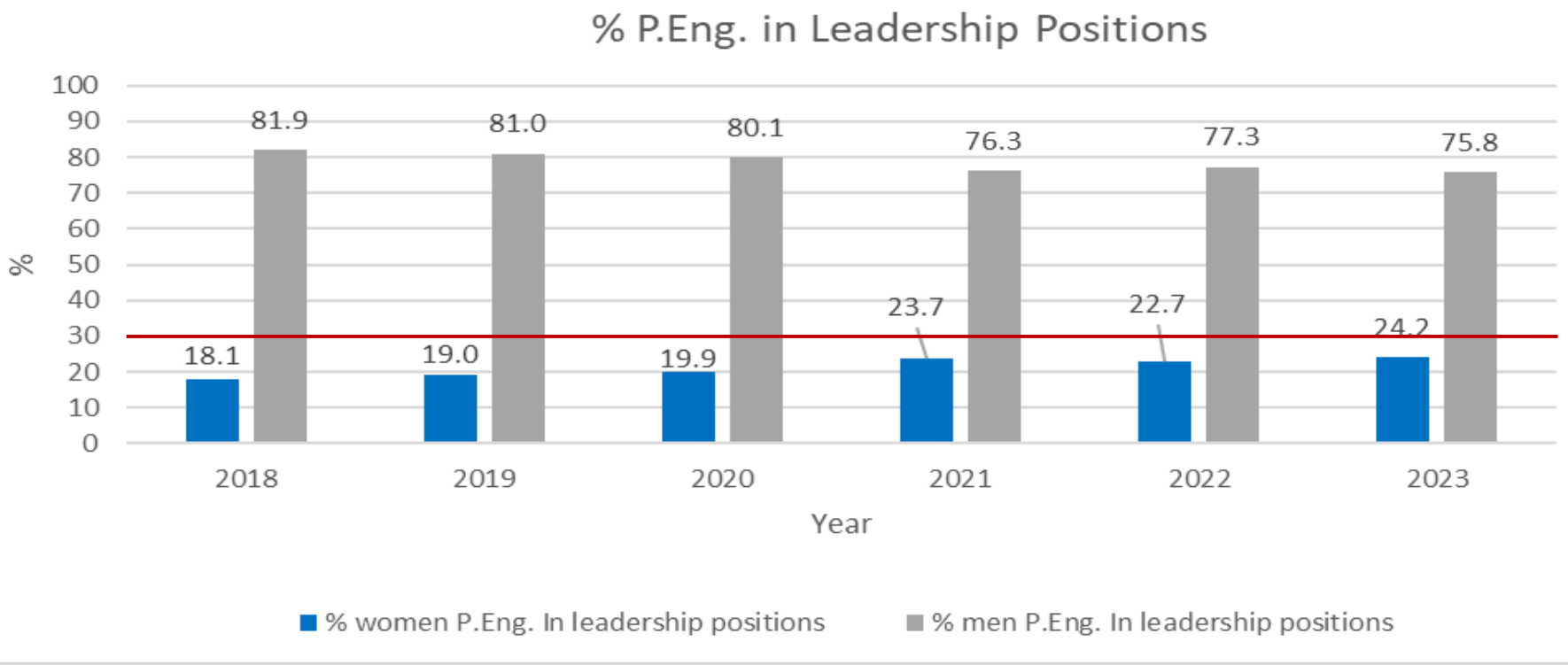
Percentage Engineering Recruits who are Women



Percentage Engineering Recruits Obtaining Licensure who are Women



Percentage Engineers in Leadership Positions who are Women



2024 Update on PEO's 30 by 30 Actions

Annual Check-in

Hosted PEO's fifth annual 30 by 30 check-in on October 2, 2024, with key stakeholder groups – approximately 80 in attendance representing universities, engineering employers, and PEO leadership

Employers

Expanded reach with employers across Ontario - PEO continues to follow up with interested employers on their willingness to support the 30 by 30 initiative

Future metrics

PEO continues to collect 30 by 30 metrics and will present these at the Annual Check-In and to Council each year

Gender Audit

PEO is finalizing the gender audit study of its licensing process and internal operations conducted by U of T's Rotman School of Management

EDI Manager

PEO hired a new Manager of EDI to manage PEO's EDI portfolio

PEO Next Steps

2024/2025

- **2024-2025** — Participate in guest speaking engagements at 30 by 30 related events and continue to engage stakeholders
- **Nov. 2024** — Annual reporting of metrics to PEO Council
- **2025** — Follow up with Employer participants
- **Q3/Q4 2025** — Host annual check-in/progress reporting in 2025

30 by 30 Metrics: Conclusion

- Still a work in progress to reach 30%
- Lots of work still to be done, particularly with engagement of employer stakeholder groups
- 6-year commitment and reporting

Information Note – Regional Councillors Committee (RCC) Summary Report

Agenda Item No.	C-566-2.8
Purpose	To inform Council of the recent activities of the Regional Councillors Committee.
Strategic/Regulatory Focus	This item is neither regulatory nor governance.
Motion	No motion required
Attachments	Appendix A – RCC Summary Report

Prepared By: Digital Transformation & Corporate Operations

Professional Engineers Ontario

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C-566-2.8
Appendix A

Regional Councillors Committee (RCC)

Summary Report to Council

November 29, 2024

1. **Committee Meeting Date: November 5, 2024**

Item/Topic	Discussion Summary	Assigned to	Next Steps	Status[1]
Chapter Procedure Manual Advisory Group	Discussed accomplishments to date of CPMAG as well as projected timelines for bringing Manual to PEO Council (April 2025) and implementation of Manual (June 2025).	PEO Staff + RCC	RCC indicated interest in having a dedicated session to review key changes and salient points within Chapter Procedure Manual prior to final editing and presentation to PEO Council.	Continue
Chapter Finance Update	Chapter Expenditures YTD (Nov 1) was presented. Discussion on guidance for Chapter expenditures and standardization was also discussed.	Staff to include guidelines in CPMAG	For 2024: Staff to propose draft communication to aid chapters in aligning to PEO expense policies. RCC to review draft prior. For 2025: further clarification required on specific guidelines for Chapter expenses to be included for Chapter Procedure Manual.	Complete
RCC Scholarship	Discussion included update on YTD spend for RCC Scholarship across PEO Chapters and outcome of Scholarship usage survey. Motion Carried to move to approve reallocation of unused 2024 scholarship funds as requested by Chapters through discussion with Regional Councillors and PEO survey.	PEO Staff + RCC	Goal for 2025 will be to implement a standardized RCC Scholarship application to be utilized by all Chapters with a preliminary focus on equitable participation in the RCC Scholarship program.	Continue
Chapter Activity Visioning Session	Engagement with Chapters facilitated to identify topics required for a Chapter Activity Visioning Session that would take place at the beginning of March.	PEO Staff	PEO staff to continue planning agenda for a March Visioning Session to support Chapters in identifying appropriate activities; RCC to be engaged in identifying representative(s) to attend on behalf of RCC.	Continue
Chapter Website Updating	Update provided on engagement facilitated with Chapters for requirement gathering and validation. Confirmed that website design is	PEO Staff + Chapters	PEO Staff and website vendor to train PEO Chapter Web Administrators and support	Continue

[1] Green=Complete; Blue=Continue; Yellow=Modify; Red=Discontinue

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Item/Topic	Discussion Summary	Assigned to	Next Steps	Status[1]
	nearing complete and working towards implementation and launch prior to the end of 2024.		Chapters in transitioning websites to ensure AODA compliance by end of 2024.	
Penta-Congress	Penta-congress will be hosted in June 2025 to bring Chapters together for a joint-congress to discuss joint Chapter issues followed by breakout rooms to discuss regional-specific open issues.	PEO Staff	PEO staff to continue planning towards PEO Penta-Congress and will work with RCC in confirming the agenda and the role that Regional Councillors will play in this congress.	Continue

2. Regional Open Issues

Item/Topic	Regional Open Issue	RCC Update	Status[2]
Application Process	**Northern** NRC moves to add a standing agenda item at regional congresses to review the number of applications in the legacy process, for CEAB and non-CEAB, and by region.	This information is continuously shared in PEO's Registrar report. PEO staff to extract this information from Registrar's report and provide an update at Regional Congresses for Chapters to translate this knowledge to local engineers on their path to licensure. Regional Councillors to also act as local champions to drive Chapters to information that is readily available online.	Remain Open
Engineering Intern Program	**Western** WRC Moves to ask RCC to advocate to Council that PEO Council not adopt new licensing priorities until EIT program status is resolved and a timeline provided for its resolution.	RCC recommends to the Western region to close this issue.	Recommend to Close
	Western WRC moves to RCC to request RCC discuss and confirm with Council a formal replacement for EIT program, and for PPEO to request an Act change (and related Regulation changes) by January 2025. **Eastern** ERC moves that due to the current change within the Registration protocols for PEO which include the elimination of the Engineer-In-Training (EIT) program, that the seven (7) chapters of the Eastern Region hold meetings both in-person and virtually, to develop a program that provides assistance to	RCC recommends keeping these as a placeholder, acknowledging that there will be a dedicated plenary discussion in November 2024 that will provide further insight on the next steps forward on the EIT program; pending the outcome of this discussion and path forward, regions will be updated with available information.	Remain Open

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	prospective members of the profession (ie those working towards achieving forty-eight (48) months of relevant experience). With the removal of the EIT program, those prospective engineers will not be identified by their registration as an EIT but must be self-identified to the Chapter. This can be achieved by an advertising campaign targeted at 4th year students to identify available local resources in their path toward licensure. (June 2023).		
Compliance Enforcement	**Western** WRC moves that RCC requests information from the Registrar/CEO on how PEO is enforcing P.Eng. professional responsibilities and accountabilities across Ontario to maximize public safety and interest.	PEO enforcement continues based on information provided or complaints raised through existing processes. RCC recommends keeping this issue open to gather more information with regards to upstream compliance enforcement. RCC indicates this as an opportunity for education with license holders to be aware of their responsibility to ensure regulations are enforced, and the difference between enforcement and discipline.	Remain Open
Continuing Education	**East Central** ECRC moves to request an updated timeline and staff capacity for providing regulatory seminars to the chapters, including PEAK and the Pathway to Licensure.	RCC notes that staff are developing a streamlined process for Chapters to request various presentation topics from PEO teams on topics of interest from local license holders or engineering applicants.	Remain Open

[2] Green=Recommend Close; Blue=Remain Open

Information Note – Engineers Canada Directors Report

Agenda Item Number	C-566-2.9
Purpose	To provide an update on the activities of Engineers Canada
Strategic/Regulatory Focus	
Motion	
Attachments	Appendix A – Director's Update (En) Appendix B – Director's Update (Fr)

C-566-2.9
Appendix A

Engineers Canada Director's update
September to November 2024

Engineers Canada Board

In September, the Governance Committee recommended that a final draft of the terms of reference for the Governance Review Task Force be presented to the Board for approval. The Governance Committee also reviewed several policies and the bylaw.

Strategic Priority 1.1: Investigate and Validate the Purpose and Scope of Accreditation

The Futures of Engineering Accreditation Steering Committee (FEA) held their final meeting to discuss their Path Forward Report Recommendations. The project team will now take the lead on drafting the final report which will be presented to the Board this Fall.

Strategic Priority 2.1: Accelerate 30 by 30

As part of our work on SP2.1, Engineers Canada presented remotely at the Professional Engineers Ontario (PEO) 30 by 30 Annual Check-In. This included an update on 30 by 30 key milestones, Engineers Canada's Strategic Plan 2022-2024, results of work to date including our Employer Task Force to develop the Engineering Employer Champion Program, and our Inclusiveness Strategic Direction under our 2025-2029 Strategic Plan.

Engineers Canada also presented to the Canadian Society for Chemical Engineering (CSChE). This included Engineers Canada's work on equity, diversity, and inclusion, including 30 by 30, Truth and Reconciliation, and collaboration with other organizations. Also participating were: Engineers Canada Board member, Marisa Sterling, Assistant Dean and Director, Diversity, Inclusion and Professionalism, at the University of Toronto's Faculty of Applied Science and Engineering; and Engineering Deans Canada (EDC) Chair Mary Wells, Dean of Engineering at the University of Waterloo.

Strategic Priority 2.2: Foster Trust and Value of Licensure

The 2024 Building Tomorrows campaign launched a seven-week fall flight of promotions. This phase of the campaign includes both digital ads and the updated TV commercial, which began airing September 23, 2024. We've also added Connected TV to our media buy, expanding our reach to audiences on streaming platforms like Amazon Prime, CBC Gem, Crave TV, and others.

Pathway to Engineering hosted its second Exchanges webinar, discussing regulator programs that help graduates gain licensure. Panelists from APEGA and APEGNB shared more about the Work Readiness Program (APEGA) and Connections (APEGNB). More than 100 early career professionals and others in the engineering community took part in the session.

Accreditation Board (CEAB)

At the beginning of September, we marked a major milestone for the implementation of Tandem, Engineers Canada's new web-based data management system for accreditation - the first several programs submitted their data for review by visiting teams using the new tool. Volunteer training has commenced, and the accreditation team remains available to support institutions and volunteers in their use of the new system.

In September the CEAB met in Moncton. The meeting included: presentation of the 2024 Accountability in Accreditation report findings, accreditation decisions related to report submissions by 7 programs at 4 institutions, updates from Engineering Deans Canada, the Canadian Federation of Engineering Students, and the National Admissions Officials Group, and reports from subcommittees. Members also participated in a 'How to chair a visit' workshop and received an in-depth update from the Futures of Engineering Accreditation project team.

The CEAB concluded their 2024 Vice-Chair election process resulting in Julius Pataky, MBA, P.ENG. being declared the elected candidate. Pending Engineers Canada Board approval in December, Julius will serve in the Vice-Chair role July 1, 2025-June 30, 2026.

Qualifications Board (CEQB)

In September, CEQB held its 128th meeting, where several approvals were made:

- The Petroleum engineering syllabus was approved for publication on the Engineers Canada website.
- The draft Engineers Canada paper on the regulation of emerging disciplines was approved for consultation.
- Dr. Amy Hsaio, member-at-large, was nominated as vice-chair elect, for a two-year term beginning July 1, 2025 (subject to Engineers Canada Board approval).

The CEQB also received updates from key partners and interest holders and heard reports from each of its active subcommittees. The CEQB and invited guests attended a workshop on the ethical use of groundbreaking technologies, which was intended to provide a foundation for the development of guidance on this theme.

The CEQB is soliciting feedback on the Draft Engineers Canada paper on the regulation of emerging disciplines. Your questions and feedback can be sent to Isabelle Flamand at Isabelle.flamand@engineerscanada.ca by November 15.

National Admissions Officials Group (NAOG)

The NAOG met in September in Moncton. Their agenda comprised of roundtable updates, international mobility discussions, updates from EC on ongoing Strategic Priorities and CEQB work. It also included a lengthy discussion on opportunities for potential alignment of several regulatory admission processes.

Belonging and Engagement

As part of our work on Core purpose 8 (CP8): Fostering recognition of the value and contribution of the profession to society and sparking interest in the next generation of engineering professionals, Engineers Canada participated in a group mentoring session with the Canadian Federation of Engineering Students (CFES) national leadership team. This was an opportunity for both organizations to share updates about our strategic plans and ongoing work, and discuss topics such as leadership, strategic balance and maintaining work-life balance. The group mentorship sessions are held bi-annually. The CFES is one of Engineers Canada's strategic partners.

Also as part of our work on CP8, Engineers Canada led a full day session with leading STEM NGOS to refine and build out a workplan for a new collective impact project called Forward Engineering. Together the group developed and agreed on their common agenda, to propel K-12 STEM education in Canada with an explicit focus on the 'E'. The participating organizations officially became the founding organizations of the initiative committing to leveraging their networks of over 3 million youth, teachers and parents annually to directly address the barriers

that hinder youth from exploring a career in engineering. Engineers Canada has agreed to serve as the backbone organization of the initiative. Funded by a grant from the Leacross Foundation, this work was launched in September 2023 and is based on the recommendations of a report commissioned by Engineers Canada entitled "Where is the E in STEM?".

September 30 is the National Day for Truth and Reconciliation and Orange Shirt Day. As part of our work on Core purpose 9 (CP9): Promote diversity and inclusion in the profession that reflects Canadian society and our CP9 sub-strategy on Indigenous access to engineering, Engineers Canada staff participated in an education session about Engineers Canada's Truth and Reconciliation work. After the session, staff walked to the "Remembering the Children" event hosted by the National Centre for Truth and Reconciliation, on Parliament Hill.

Public Affairs and Government Relations

Engineers Canada Board Members and CEOs or designated staff were invited to attend a virtual town hall with Public Services and Procurement Canada (PSPC) which was organized by the Association of Consulting Engineering Companies (ACEC)-Canada. The town hall focused on the newly introduced procurement policy on official languages and contracting - PN48R2. During this town hall, senior officials from PSPC provided a detailed walkthrough of the policy.

In September, as part of our work on Core purpose 5 (CP5): Advocating to the federal government, Engineers Canada made two submissions to the federal government in response to Government of Canada consultations:

- "Building a Modern 21st Century Workforce." Read our letter to Minister of Employment, Workforce Development and Official Languages, Randy Boissonault here.
- "Informing an Industrial Strategy for Homebuilding." Read our letter to Minister of Innovation, Science and Industry François-Philippe Champagne, and Minister of Housing, Infrastructure and Communities, Sean Fraser here.

C-566-2.9
Appendix B

Compte rendu à l'intention des administrateurs et administratrices d'Ingénieurs Canada
Septembre à novembre 2024

Conseil d'Ingénieurs Canada

En septembre, le Comité sur la gouvernance a recommandé qu'une ébauche finale du mandat du Groupe de travail sur l'examen de la gouvernance soit présentée au conseil pour approbation. Le Comité sur la gouvernance a également examiné plusieurs politiques et le Règlement administratif.

Priorité stratégique 1.1 Examiner et valider le but et la portée de l'agrément

Le Comité directeur du projet Avenir de l'agrément en génie (AAG) a tenu sa dernière réunion afin de discuter de ses recommandations dans le Rapport sur la voie à suivre. L'équipe du projet prendra désormais l'initiative pour rédiger le rapport final qui sera présenté au conseil cet automne.

Priorité stratégique 2.1 : Accélérer l'initiative 30 en 30

Dans le cadre de nos travaux liés à la Priorité stratégique 2.1, Ingénieurs Canada a donné une présentation à distance à la réunion annuelle de bilan 30 en 30 de Professional Engineers Ontario (PEO). La présentation comprenait une mise à jour sur les principaux jalons de l'initiative 30 en 30, sur le Plan stratégique 2022-2024 d'Ingénieurs Canada, sur les résultats des travaux réalisés jusqu'à présent, notamment ceux de notre Groupe de travail sur les employeurs chargé de développer le Programme de champions des employeurs d'ingénieurs et notre orientation stratégique liée à l'inclusivité dans le cadre de notre Plan stratégique 2025-2029.

Ingénieurs Canada a également donné une présentation à la Société canadienne du génie chimique (SCGCh). La présentation portait sur le travail d'Ingénieurs Canada en matière d'équité, de diversité et d'inclusion, y compris l'initiative 30 en 30, sur les efforts pour faire progresser la vérité et la réconciliation, ainsi que sur la collaboration avec d'autres organisations. Marisa Sterling, membre du conseil d'Ingénieurs Canada, vice-doyenne et directrice, Diversité, Inclusion et Professionnalisme à la Faculté des sciences appliquées et de génie de l'Université de Toronto, et Mary Wells, présidente de Doyennes et doyens d'ingénierie Canada (DDIC) et doyenne de la Faculté de génie de l'Université de Waterloo, ont également participé à la séance.

Priorité stratégique 2.2 : Renforcer la confiance et la valeur du permis d'exercice

Ingénieurs Canada a lancé le volet d'automne de la campagne Construire l'avenir, qui s'étend sur sept semaines. Cette phase de la campagne comporte à la fois des publicités numériques et la publicité télévisée actualisée, qui est diffusée depuis le 23 septembre. Nous avons également ajouté la télévision connectée à nos achats médias, afin d'atteindre le public des plateformes de diffusion en continu comme Amazon Prime, CBC Gem, Crave TV, etc.

Le programme Parcours vers l'ingénierie a organisé son deuxième webinaire de la série Échanges, avec une discussion sur les programmes offerts par les organismes de réglementation pour aider les diplômé.e.s à obtenir leur permis d'exercice. Des panélistes de l'APEGA et de l'AIGNB ont présenté

respectivement le Work Readiness Program (programme de préparation au travail de l'APEGA) et le programme Connexions de l'AIGNB. Plus de cent professionnel.le.s en début de carrière et d'autres membres de la communauté du génie ont participé à la séance.

Bureau canadien d'agrément des programmes de génie (BCAPG)

Au début de septembre, nous avons franchi une étape importante de la mise en œuvre de Tandem, le nouveau système de gestion en ligne des données sur l'agrément d'Ingénieurs Canada. En effet, plusieurs programmes ont utilisé pour la première fois le nouvel outil pour soumettre leurs données à l'examen des équipes de visiteurs. La formation des bénévoles a commencé et l'équipe de l'agrément est toujours disponible pour aider les établissements et les bénévoles à utiliser le nouveau système.

En septembre, le BCAPG s'est réuni à Moncton. Parmi les affaires de la réunion, mentionnons : la présentation des conclusions du rapport de 2024 sur la Responsabilité en matière d'agrément, les décisions d'agrément concernant les rapports soumis par sept programmes dans quatre établissements, les mises à jour de Doyennes et doyens d'ingénierie Canada (DDIC), de la Fédération canadienne étudiante de génie et du Groupe national des responsables de l'admission, ainsi que les rapports de sous-comités. Les membres ont également participé à un atelier sur la façon de présider une visite d'agrément et ont reçu un compte rendu détaillé de l'équipe du projet Avenir de l'agrément en génie.

Le BCAPG a conclu le processus d'élection de son vice-président pour 2024 et Julius Pataky, MBA, P.ENG., a été déclaré le candidat élu. Sous réserve de l'approbation du conseil d'Ingénieurs Canada en décembre, Julius assumera le poste de vice-président du 1er juillet 2025 au 30 juin 2026.

Bureau canadien des conditions d'admission en génie (BCCAG)

En septembre, le BCCAG a organisé sa 128e réunion, au cours de laquelle :

- Le programme d'examens de génie pétrolier a été approuvé aux fins de publication dans le site d'Ingénieurs Canada.
- L'ébauche du document d'Ingénieurs Canada sur la réglementation des nouvelles disciplines a été approuvée pour consultation
- Amy Hsaio, membre hors cadre, a été nommée vice-présidente élue pour un mandat de deux ans à compter du 1er juillet 2025 (sous réserve de l'approbation du conseil d'Ingénieurs Canada).

Le BCCAG a également reçu des mises à jour de la part de partenaires clés et de parties intéressées, ainsi que les rapports de chacun de ses sous-comités actifs. Le BCCAG et des invités ont participé à un atelier sur l'utilisation éthique des technologies d'avant-garde, qui visait à jeter les bases de l'élaboration d'une orientation sur ce thème.

Le BCCAG sollicite des commentaires sur l'ébauche d'orientation générale d'un document d'Ingénieurs Canada sur la réglementation des nouvelles disciplines. Vous pouvez envoyer vos questions et commentaires à Isabelle Flamand, spécialiste, Compétences professionnelles, à Isabelle.flamand@ingenieurscanada.ca avant le 15 novembre.

Groupe national des responsables de l'admission (GNRA)

Le GNRA s'est réuni en septembre à Moncton. À l'ordre du jour : des mises à jour en table ronde,

des discussions sur la mobilité internationale, des mises à jour d'IC sur les priorités stratégiques en cours et les travaux du BCCAG, ainsi qu'une discussion de fond sur les possibilités d'alignement de plusieurs processus d'admission réglementaires.

Appartenance et Engagement

Dans le cadre de nos travaux liés à l'Objectif fondamental 8 (OF8) : Favoriser la reconnaissance de la valeur de la profession et de son apport à la société afin de susciter l'intérêt de la prochaine génération de professionnels, Ingénieurs Canada a participé à une séance de mentorat de groupe avec l'équipe de direction nationale de la Fédération canadienne étudiante de génie (FCEG). C'était l'occasion pour les deux organismes d'échanger de nouvelles informations sur nos plans stratégiques et nos travaux en cours et de discuter de sujets tels que le leadership, la prise de décisions stratégiques et le maintien d'un équilibre entre la vie professionnelle et la vie privée. Les séances de mentorat de groupe ont lieu deux fois par année. La FCEG fait partie de nos partenaires stratégiques.

Dans le cadre de notre travail au titre de l'Objectif fondamental 8 également, Ingénieurs Canada a dirigé une séance d'une journée complète avec des ONG de premier plan dans le domaine des STIM afin de préciser et de développer le plan de travail d'un nouveau projet d'impact collectif appelé Forward Engineering (En avant, l'ingénierie!). Ensemble, les membres du groupe ont élaboré et adopté leur programme commun, qui consiste à promouvoir l'enseignement des STIM de la maternelle à la 12^{e} année au Canada, en mettant explicitement l'accent sur le « I » des STIM. Les organisations participantes sont officiellement devenues les organisations fondatrices de l'initiative, s'engageant à tirer parti chaque année de leurs réseaux de plus de trois millions de jeunes, d'enseignants et de parents pour s'attaquer directement aux obstacles qui empêchent les jeunes d'explorer une carrière en génie. Ingénieurs Canada a accepté d'être l'organisme de référence de l'initiative. Financé par une subvention de la Fondation Leacross, ce travail a été lancé en septembre 2023 et est basé sur les recommandations du rapport commandé par Ingénieurs Canada intitulé « Qu'en est-il du « I » des STIM ? ».

Le 30 septembre marque la Journée nationale de la vérité et de la réconciliation et la Journée du chandail orange au Canada. Dans le cadre de notre travail au titre de l'Objectif fondamental 9 (OF9) : Promouvoir au sein de la profession une diversité et une inclusion qui reflètent celles de la société canadienne et de notre sous-stratégie Accès des Autochtones au génie, le personnel d'Ingénieurs Canada a participé à une séance de sensibilisation au travail d'Ingénieurs Canada sur la vérité et la réconciliation. Après la séance, le personnel s'est rendu à pied à l'événement « Se souvenir des enfants », organisé par le Centre national pour la vérité et la réconciliation, sur la Colline du Parlement.

Affaires publiques et relations gouvernementales

Les membres du conseil d'Ingénieurs Canada et les chefs de la direction ou leur personnel désigné ont été invités à participer à une assemblée publique virtuelle avec Services publics et Approvisionnement Canada (SPAC), organisée par l'Association des firmes de génie-conseil (AFGC) - Canada. L'assemblée a porté sur la nouvelle politique d'approvisionnement en matière de langues officielles et de passation de marchés - PN48R2. Au cours de cette assemblée, de hauts fonctionnaires de SPAC ont donné un aperçu détaillé de la politique.

En septembre, dans le cadre de notre travail au titre de l'Objectif fondamental 5 (OF5) : Faire valoir les intérêts de la profession auprès du

gouvernement fédéral, Ingénieurs Canada a présenté deux mémoires au gouvernement fédéral en réponse à ses consultations, à savoir :

- Création d'une main-d'œuvre moderne pour le 21e siècle. Vous pouvez lire notre lettre à Randy Boissonnault, ministre de l'Emploi, du Développement de la main-d'œuvre et des Langues officielles ici.
- Développer une stratégie industrielle pour la construction résidentielle. Vous pouvez consulter notre lettre à François-Philippe Champagne, ministre de l'Innovation, des Sciences et de l'Industrie, et à Sean Fraser, ministre du Logement, de l'Infrastructure et des Collectivités, ici.

Information Note – President's Report

Agenda Item Number	C-566-3.1
Purpose	To inform Council of the recent activities of the President.
Strategic/Regulatory Focus	
Motion	No motion required.
Attachments	

President Wowchuk will provide a report on his recent PEO activities at the meeting.

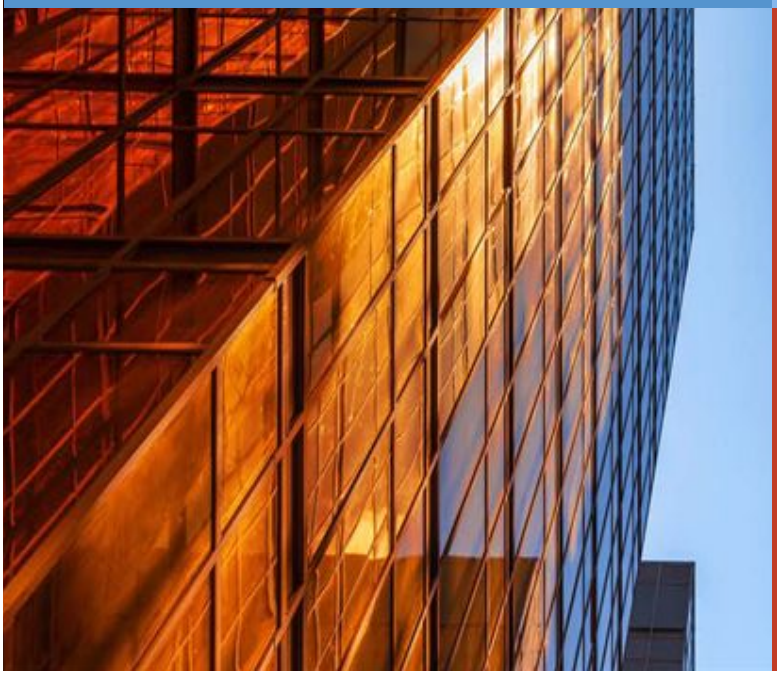
Information Note – CEO/Registrar's Report

Agenda Item Number	C-566-3.2a)
Purpose	CEO/Registrar Quaglietta will present the CEO/Registrar's Report to Council.
Strategic/Regulatory Focus	
Motion	None
Attachments	Appendix A – CEO/Registrar's Report

C-566-3.2a)
Appendix A

Professional Engineers
Ontario

CEO/ REGISTRAR'S REPORT



NOVEMBER 29, **2024**

INTRODUCTION

As Council gathers for its final meeting of the year, I want to acknowledge the dedication of PEO's many volunteers. Volunteers carry out key statutory roles on our Council and committees and are vital to the work of our chapters. Each of our volunteers is doing their part to contribute to the self-regulation of engineering in Ontario.

With the end of 2024 around the corner, we will embark on the final year of PEO's 2023–2025 Strategic Plan. Next year, Council—along with staff, volunteers and stakeholders from across the regulatory landscape—will begin the process of developing PEO's next strategic plan. We will continue to leverage the strong working relationship between staff and Council in this process.

Volunteer Symposium and Chapter Engagement

Councillors are likely familiar with our Chapter Event Engagement Model, which ensures senior staff visit all five regions of the province twice annually and each chapter at least once every three years. As outlined on page 19 of this report, we successfully achieved our overall target for visits.

We are also looking forward to our first ever Volunteer Symposium and 2024 Order of Honour (OOH) ceremony. The symposium involves a full day of discussions on how PEO, with volunteer support, identifies and supports its public-interest mandate. Additionally, this year the OOH recognizes six volunteers for their extensive PEO service.

Enhancing PEO Communication & Stakeholder Engagement

A major part of PEO's continuous improvement journey has been a greater emphasis on stakeholder engagement. Earlier this year, PEO engaged in a communications audit conducted by MDR Strategy Group. The final communication audit report was presented by MDR to Council in September. Building off stakeholder feedback, two of the report's recommendations have already been actioned. These include:

- Beginning with the Winter 2025 issue, *Engineering Dimensions* will be available in both digital and hard-copy options; and
- Introducing streamlined chapter websites in 2025 to enable greater ease of website administration and ensure ongoing accessibility compliance.

Enhancing PEO's communications aligns with our continued efforts to better engage with our stakeholders. Notably, in 2024:

- Our Pre-licensing Outreach team gave 52 presentations to over 2600 prospective licence applicants hosted by chapters, settlement agencies and engineering employers; offered 19 additional presentations to over 2000 students at engineering faculties; and connected with 750+ students at various faculty engineering fairs and the PEO-Student Conference organized with the Engineering Student Societies' Council of Ontario;
- Our External Relations department engaged with 157 people at 74 organizations, including the Ontario Society of Professional Engineers and the Office of the Attorney General. Staff also conducted 18 surveys and consultations; and attended four stakeholder events, including events hosted by Black Engineers of Canada and the Association of Consulting Engineering Companies–Ontario; and
- We engaged with multiple Indigenous organizations, including Indigenous and Community Engagement, Inc.; the Ontario First Nations Technical Services Corporation; Canadian Council for Indigenous Business; SOAR Professional Services; and Cambium Indigenous Professional Services. We continue to develop strategies to increase Indigenous representation in engineering.

Representing PEO at Speaking Engagements

It has been my pleasure to participate in many external speaking engagements. I have spoken with thousands of engineers and aspiring engineers to date on topics such as equity, diversity and inclusion as it pertains to PEO's work and licensing process. I look forward to continuing my engagements in 2025 and helping to promote the role of PEO in regulating professional engineering in Ontario.

PEO staff attended the Black Engineers of Canada annual general meeting and fireside chat in Oakville, ON, in August.

(top left) PEO staff with Grand River Chapter executives Brett Nelson, P.Eng. (far left), and Johanna Friend, P.Eng. (second from left), during the PEO-SC, organized by the Engineering Student Societies' Council of Ontario (ESSCO).

(top right) CEO/Registrar Jennifer Quaglietta, MBA, P.Eng., ICD.D, with Brampton Chapter Chair Ranjit Gill, P.Eng., PMP, FEC (left), and West Central Region Councillor Pappur Shankar, P.Eng., FEC (right), organizers of the West Central Regional Symposium in February 2024.

(middle, left) A panel discussion on Indigenous Peoples and engineering during an ACEC-Ontario conference that focused on community. PEO attended the conference, which heavily featured discussions on equity, diversity and inclusion in Ontario's engineering sector.

(middle right) CEO/Registrar Jennifer Quaglietta with President Greg P. Wowchuk, P.Eng., FEC (left) and former PEO councillor Arjan Arenja, P.Eng., ICD.D (right), during PEO's annual general meeting in Barrie, ON, this past April.

CEO/Registrar Jennifer Quaglietta attended a girls' STEM summer camp hosted by GE Healthcare in Mississauga, ON, in August to encourage the girls to consider pursuing education and careers in STEM fields.

(middle, left) PEO staff attending the Ontario Society of Professional Engineers' Conference in Windsor, ON, in October.

(centre, right) CEO/Registrar Jennifer Quaglietta participating in a panel discussion on women in engineering with Jessica Vandenberghe, P.Eng. (Alberta), FEC, FGC (Hon) at Engineers Canada's 30 by 30 panel discussion in Winnipeg, MB, in May.

(left) CEO/Registrar Jennifer Quaglietta speaking at a women-in-engineering convention hosted by Siemen's in July.

OPERATIONAL PLAN STATUS REPORT

PEO's 2023–2025 Strategic Plan commits us to modernizing processes, improving governance, optimizing organizational performance and collaborating with stakeholders. This year, an operational plan of 21 initiatives was identified to support attainment of the strategic goals. As of November 2024, deliverables for 20 initiatives have been completed or are on track to be completed per plan by December. Development and budgeting for the 2025 Operational Plan has been completed per operational budget processes.

			Status			
Goals	**Sub Goals**	**Activities**	**NYS**	**< half**	**> half**	**Done**
1. Improve licensing processes	**1.1 Create fair, transparent, accessible and efficient application process**	1.1.1 FARPACTA tech solution - Phase 1 & 2				
		1.1.2 FARPACTA process (licensing and compliance)				
		1.1.3 Change management and communications				
	1.2 Review licensing processes; implement changes	1.2.2 Implement mandatory CPD - Phase 2 (business rules, sanctions)				
	1.3. Ensure licensing reflects EDI values	1.3.1 EDI - Phase 1 (audit, supports)				
2. Optimize organizational performance	**2.2. Ensure adequate IT; data collection/mgt**	2.2.1 Digital transformation roadmap				
		2.2.2 Data governance model				
	2.3 Review/improve comms & business processes; ensure reflects EDI values	2.3.1 Organizational EDI strategy				
		2.3.2 HR high performance team roadmap				
		2.3.3 Modernize payroll processes				
		2.3.4 Communications strategy (value, EDI)				
		2.3.5 Modernize budget processes				
		2.3.6 Review financial controls				
		2.3.7 Develop Customer Service Model				
3. Implement governance improvement program	**3.1 Ensure councillor & ELT orientation**	3.1.2 Review/revise board orientation				
	3.2 Ensure committee/council evidence for decision-making	3.2.2 RM framework				
	3.3 Establish metrics for governance performance	3.3.1 Review governance committee evaluations				
4. Refresh vision; ensure stakeholders see PEO value	**4.1 Dialogue with members & stakeholders**	4.1.3 Stakeholder engagement session(s)				
	4.2 Undertake research	4.2.1 Legislative/reg/legal review				
	4.3. Develop proposed vision for consultation	4.3.1 Draft new vision				
		4.3.2 Post vision consultation				
		Status Counts:	5%	0%	0%	95%

Figure 1: PEO's Operational Plan Status Report as of November 2024

20/21

PEO completed 20 out of 21 initiatives from the 2024 Operational Plan.

IMPROVING THE LICENSING PROCESS

1.1 Create Fair, Transparent, Accessible and Efficient Application Process

1.1.1 FARPACTA Tech Solution

The Licensing team has greatly benefited from enhanced, real-time data collection and analytics developed by the Digital Transformation and Corporate Operations team. Staff are now better able to discern and track how registration timelines improved in the past year. We are also better equipped to identify trends and make appropriate projections to assist with resource allocation and budgeting. Data provided in the following section was derived from these real-time collection tools.

1.1.2 Review Licensing Processes; Implement Changes

We are 100 per cent compliant with all FARPACTA timelines.

Technical Exams Update

Approximately 25 per cent of legacy applicants are in the process of writing technical exams. Moreover, as of fall 2024, the number of FARPACTA prospective applicants writing technical exams has, for the first time, exceeded the number of legacy applicants writing technical exams, per the chart and table below. As a result, the number of technical exams has nearly doubled.

In addition, the Licensing team has begun implementing recommendations from its lean review, especially in technical examinations, as well as the National Professional Practice Exam (NPPE).

HIGHLIGHTS

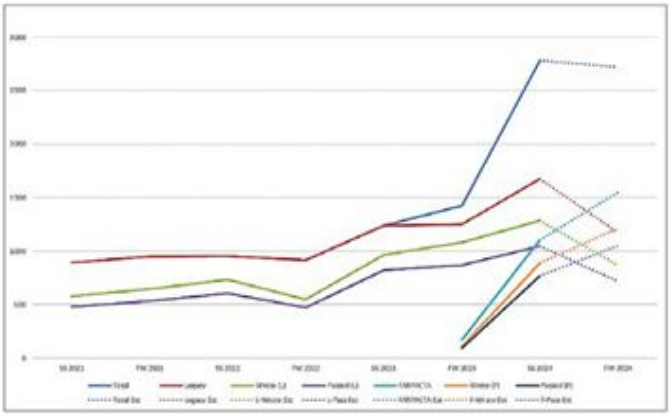
> Since transition to the FARPACTA licensing process, our legacy inventory has been reduced by 44 per cent, or from approximately 34,000 to 19,000.

> As of September 23, the Academic Requirements Committee queue has decreased to 996 files, from 2084 on March 12.

> The turnaround time for an experience assessment for a legacy applicant is projected to be less than six months in 2025 once we receive information from their validators.

> In fall 2024 for the first time, the number of FARPACTA technical exam registrants has surpassed legacy registrants.

		Total	Legacy	Wrote (Legacy)	Passed (Legacy)	FARPACTA	Wrote FARPACTA	Passed FARPACTA
Spring 2021		894	894	582	481			
Fall 2021		951	951	648	533			
Total 2021		**1845**	**1845**	**1230**	**1014**			
Spring 2022		954	954	735	608			
Fall 2022		917	917	550	473			
Total 2022		**1871**	**1871**	**1285**	**1081**			
Spring 2023		1242	1242	966	824			
Fall 2023		1424	1252	1081	870	172	112	96
Total 2023		**2666**	**2494**	**2047**	**1694**	**172**	**112**	**96**
Spring 2024		2781	1677	1285	1046	1104	889	770
Fall 2024		2722	1175	871	720	1547	1214	1050
Total 2024		**5503**	**2852**	**2156**	**1766**	**2651**	**2103**	**1820**



FW= Fall/Winter, SS= Spring/Summer

Figure 2 and 3: Technical Exam Registrations and Results

National Professional Practice Exam Update

The NPPE is offered five times a year. In the legacy process, applicants have up to two years to successfully pass the NPPE. In the FARPACTA process, applicants have generally two attempts to successfully pass the NPPE during the 180-day assessment period. Currently, most applicants writing the NPPE are from the legacy process per Figure 4.

However, because more prospective FARPACTA applicants are now writing technical examinations than legacy applicants, it is anticipated that in mid-2025, the number of complete FARPACTA applications will increase, resulting in a substantial increase of FARPACTA applicants writing the NPPE.

	Total	Legacy	Wrote	Passed	FARPACTA	Passed
Jan-23	852	852	802	592		
Apr-23	1264	1264	1198	960		
Jun-23	947	947	878	652		
Sep-23	1069	1069	945	712		
Nov-23	991	982	865	683	9	9
Total 2023	**5123**	**5114**	**4688**	**3599**	**9**	**9**
Jan-24	1179	1168	1050	770	11	10
Apr-24	1299	1264	1154	877	35	34
Jun-24	1084	1030	880	629	54	45
Sep-24	877	836	748	526	41	39
Nov-24	767	667	TBD	TBD	100	TBD
Total 2024	**5206**	**4965**	**3832**	**2802**	**241**	**128**

Figure 4: NPPE Registrations and Results by Number

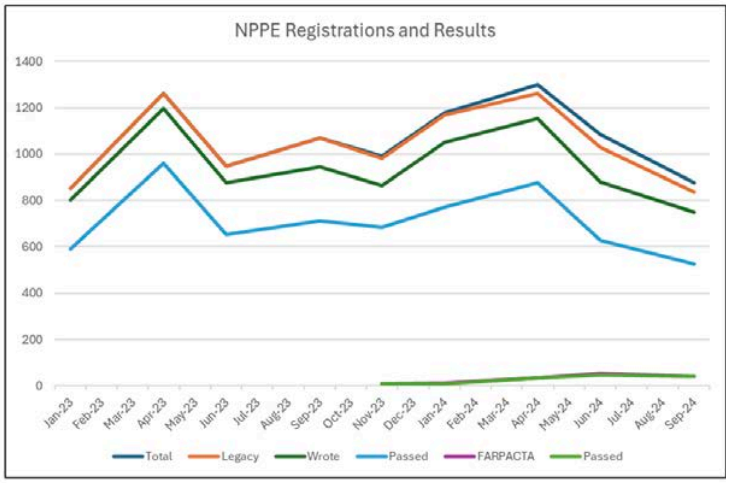


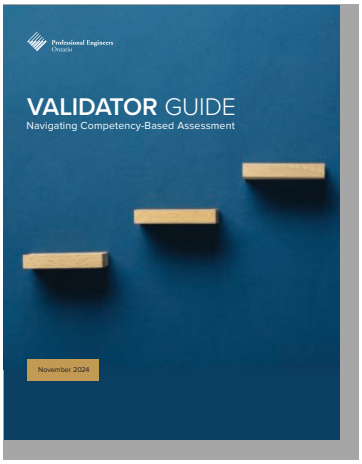
Figure 5: NPPE Registrations and Results by Flow Chart

The number of FARPACTA NPPE registrants has been steadily increasing but has yet to surpass the number of legacy registrants.

1.1.3 Change Management and Communication

In November, PEO revised its competency-based assessment (CBA) guides. Four CBA guides were updated, including guides for applicants and for validators, applicable to both the legacy and FARPACTA cohorts who applied before and after May 15, 2023, when PEO adopted a FARPACTA-compliant licensing process.

Revisions are intended to make the guidelines clearer, more accessible and easier to understand. In early November, the revised guidelines were supplemented by a live webinar, for which 6200 people registered, as well as two new informational videos.



OPTIMIZE ORGANIZATIONAL PERFORMANCE

2.2 Ensure Adequate IT; Data Collection/Management

2.2.1 Digital Transformation Roadmap

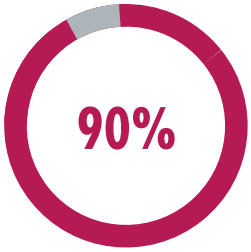
PEO's journey of digital transformation continued throughout 2024. Significant progress has been made toward the goals of enhancing user experience, strengthening cyber data security and streamlining operational processes, with nearly 60 initiatives completed this year alone. Selected highlights include:

- Advancing organizational cybersecurity posture in alignment with best practice standards and frameworks;
- Enhancing Council onboarding processes;
- Implementing numerous technical enhancements to improve performance and decrease downtime for critical and licence holder–facing systems and applications;
- Enabling the implementation of advanced business intelligence and reporting capabilities;
- Supporting the ongoing modernization of PEO and chapter websites; and
- Implementing many other service- and operational-focused initiatives.

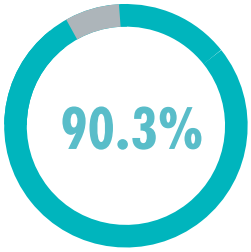
2.3 Review/Improve Communications and Business Processes; Ensure They Reflect EDI Values

2.3.1 Organizational EDI Strategy

PEO strives to create a workplace that truly reflects and supports the diversity of the communities we serve. We will be implementing various projects listed in the Anti-Racism and Equity Code Action Plan, as presented to Council earlier this year.



Ninety per cent of PEO employees have participated in a professional development activity in 2024, and 10 per cent of hires in 2024 were internal applicants.



Our people are our strength, and 90.3 per cent of our workforce is either engaged or almost engaged.

We have also launched our internal PEO Academy, which will support staff professional development and help develop various leadership competencies.

Our turnover rate is at 3.9 per cent, 10 per cent of our hires are internal, 90 per cent of employees have participated in a professional development activity and 5 per cent of employees received a promotion. We continue to foster an inclusive and collaborative hybrid environment that supports health and well-being, connectivity and innovation. Furthermore, we recently launched a recognition program that focuses on appreciation and acknowledgement of successes.

REGULATORY OPERATIONS LEAN REVIEW PROJECT

PEO recently completed a lean review of its Regulatory Operations division, identifying improvement opportunities to support the streamlining of business processes, enhancing value-generating activities, reducing overall processing times and improving customer service.

HIGHLIGHTS

> 40 staff were engaged in the Regulatory Operations lean review, including staff from Licensing, Registration, Investigations, Complaints, Unlicensed Practice, RC-Legal and Tribunal.

> Seven statutory committees were involved in the Regulatory Operations lean review, including the Complaints Committee, Complaints Review Councillor and the Discipline Committee.

> There were four initial recommendations from the lean review, with more to come.

A lean review identified seven high-impact potential projects in 2025 to streamline PEO business processes.

REGULATORY COMPLIANCE DASHBOARD PROJECTS

In addition, we recently launched operational dashboards to track regulatory complaints and investigations, the handling of unlicensed practice and the work of our Regulatory Compliance team. The launch of these dashboards has yielded three process improvements to date.

HIGHLIGHTS

> Improved the overall processing times for licence holder complaints (s.24) for complaints that have a low level of perceived risk and/or harm to the public.

> Improved the agility in managing and tracking case loads across the Registration and Discipline Committee processes.

> Improved trending and analytics on historical data and current cases to prioritization of key tasks.

NOV 2024 PEO GOVERNANCE SCORECARD - COUNCIL INDICATORS

Reporting Period: Jan to Sept 2024

#	Indicator Name	Operational Definition	Reporting Frequency	Category	Status	Desired Direction	2024 Target	2024 Threshold	Reporting Value	Status Description
1	**Acknowledgment of Complete Applications Within Target (C), (F)**	The number of received applications acknowledged as complete within 10 days divided by all applications received during the reporting period.	Quarterly	Regulatory Operations		⇧	90%	80%	100%	All completed applications reviewed within 10-day period.
2	**Registration Decisions Within Target (C), (F)**	The number of P.Eng. and Limited Licence applications for whom a registration decision is made within the required timeframe divided by all registration decisions made during the reporting period.	Quarterly	Regulatory Operations		⇧	90%	80%	95.3%	PEO continues to develop and implement process improvements to meet compliance requirements and improve staff processing times.
3	**Registration Decisions Within Target – P.Eng. Transfers (C), (F)**	The number of registration decisions made within 30 days for the P. Eng. transfer applications divided by all registration decisions received during the reporting period.	Quarterly	Regulatory Operations		⇧	100%	90%	100%	The 100% target was set by the Ontario Fairness Commissioner, pending further modification. PEO has exceeded our internal target of 90% and continues to implement process improvements to meet the legislated compliance requirement.
4	**Mandatory PEAK Compliance Rate (C)**	The compliance rate, expressed as a percent, for elements 1 and 2 of the mandatory Practice Evaluation and Knowledge (PEAK) Program. The program has three elements: 1) practice evaluation, 2) professional practice module, 3) the continuing professional development report.	Quarterly	Regulatory Operations		⇧	90%	80%	85%	As referenced in the Continuing Professional Development section, the PEAK Program became enforceable as of 2024. We expect the completion rate will significantly increase towards the end of this year.
5	**30x30 Licensure Rate (C)**	The number of newly licensed female-identifying engineers divided by the total number of newly licensed engineers.	Quarterly	Policy		⇧	30%	21%	20.2%	The 30 by 30 initiative was promulgated by Engineers Canada as a national goal of raising the percentage of newly licensed engineers who are women to 30 per cent by the year 2030. PEO supports this effort through Council's commitment to annually track and measure progress toward the 30 by 30 goal.
6	**Updated Standards and Guidelines (C)**	The percent of standards, guidelines and policies reviewed within the last five years.	Quarterly	Policy		⇧	90%	70%	50%	The review of all six standards, guidelines, and policies scheduled for 2024 are progressing well and are on track to be reviewed by staff by the end of this year.
7	**Strategic Initiative Completion (C)**	The total number of strategic initiatives completed during the reporting period divided by the total number of strategic initiatives planned for the year.	Quarterly	Finance and Strategy		⇧	90%	80%	95%	As referenced in the Operational Plan Status Report section, 95% of the 21 strategic initiative are projected to be completed by the end of this year.
8a	**Year to Date Budget Revenue Variance (C)**	The variation, in percent, of the actual year-to-date **revenue** compared to the year-to-date budget.	Quarterly	Finance and Strategy		⇧	0.1%	-10%	6.2%	Target and threshold are set to allow for the monthly spend variations in both revenues and expenses during the course of the year. Target values for indicators 8a and 8b have been updated to address a carryover error.
8b	**Year to Date Budget Spend Variance (C)**	The variation, in percent, of the actual year-to-date **spend** compared to the year-to-date budget.					1.25%	-10%	10.0%	
9	**Days Cash on Hand (C)**	This indicator is calculated by first determining the total amount of unrestricted cash / cash equivalent funds available and dividing it by annual operating expenses minus depreciation expenses. This denominator is then divided by 365.	Quarterly	Finance and Strategy		⇧	180	90	514	PEO has a strong financial position where the organization possesses cash on hand to sustain its core operations.
10	**Employee Engagement Rate (C)**	The percent of employees who are either engaged or almost engaged as measured by the annual employee engagement survey.	Annually	Talent Management and Corporate Administration		⇧	81.5%	76.5%	90.3%	PEO conducted a fulsome engagement survey this year and staff engagement is above the industry average. The operational definition, targets, and thresholds have been adjusted to match the industry benchmarks for the fulsome engagement surveys. Last year, PEO conducted a pulse survey to measure staff engagement.
11	**Staff Turnover (C)**	The number of full-time permanent employee voluntary departures at the end of reporting period divided by the running average of full-time permanent employees for the reporting period.	Quarterly	Talent Management and Corporate Administration		⇩	15%	18%	4%	The turnover rate is lower than industry standard due to high employee engagement levels. The average voluntary turnover rate in Canada is 15.5% (Mercer 2023 Canada Turnover Trends).
12	**Year-End Performance Review Completion (C)**	The number of completed performance management forms completed by December 31 divided by the total number of eligible employees.	Annually	Talent Management and Corporate Administration		⇧	99%	95%	N/A	Update to be provided after the reporting year has passed.

Legend

Status Definitions:

- Performance on target
- Performance slightly below target
- Performance significantly below target
- No update or indicator is milestone-based

Notes:

1) Indicators required under FARPACTA legislation are identified with an (F) label
2) Indicators reported to Council are identified with a (C) label
3) For text in *italics*, the most recent information is provided

Figure 6: Governance Scorecard

GOVERNANCE SCORECARD

The PEO Governance Scorecard supports the direction and oversight of PEO's operational activities and priorities. This scorecard reports on 12 indicators aligned to PEO's core functions of Regulatory Operations, Policy, Strategy and Finance and Talent Management and Corporate Administration.

The reporting period for the November 2024 PEO Governance Scorecard reports is from January to September 2024.

For PEO's internal targets, eight indicators are reporting as green for favourable against their target with one indicator reporting as yellow for slightly below target. Additionally, one indicator is reporting as red for below target. The remaining two indicators are milestone-based in nature or are not reportable for this reporting period.

Unlicensed Practice

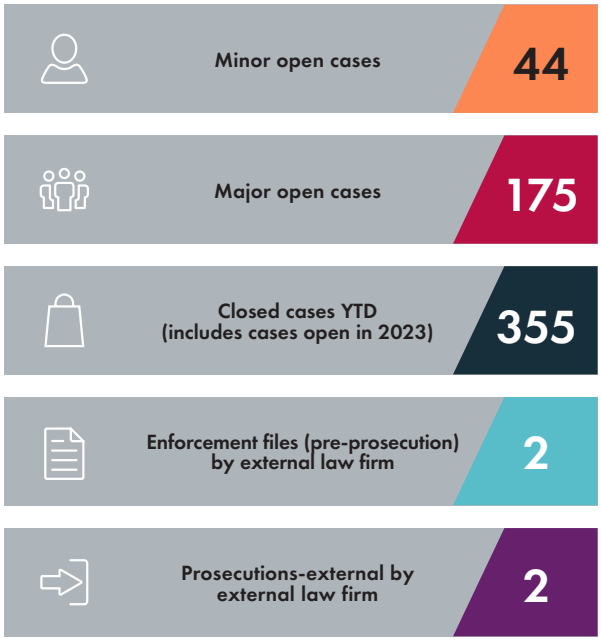
HIGHLIGHTS

> We have reduced median age of cases by over 50 per cent compared to 2023, down to 62 days from 133 days.

> PEO was successful in having the courts order defendants to reimburse some of PEO's legal costs in two separate cases in the amounts of $88,000 and $25,000, both surpassing our previous record of $15,000.

> We have implemented 6-, 12- and 18-month case reviews to mitigate files stalling or reaching statue of limitations.

> We have improved methods for communicating to respondents with title violations.



Complaints and Investigations

PEO's Complaints and Investigations team continues to provide effective support to the Complaints Committee. New staffing and the early adoption of recommendations generated by the recent lean review of the Complaints process has resulted in the final disposition and closure of a number of legacy files that had been in the active case inventory for several years.

The increase in average processing times for 2024 (as of October 31) is due to the closure of legacy files, which are included in the overall averages. This trend will likely continue as more legacy cases are resolved. However, it is a positive outcome, as it means older cases in the Complaints Committee inventory are being cleared.

We also are developing additional metrics for future reports to Council to provide greater insight into the Complaints and Investigation team's operations and efficiency.

Figure 7: Complaints and Investigations Statistics

	2022	2023	2024 (October 31)
Complaints Committee (COC) Caseload			
Filed Complaints[1] not disposed of by COC at previous year-end	105	120	160
Complaints Filed (PEA s. 24. 1(a)) during the Year	96	90	83
Total Caseload in the Year	201	210	243
Total Filed Complaints Disposed of by COC in the Year (for details see COC's *Disposition of Complaints* below)	81	50	63
Total Filed Complaints Pending for COC Disposition (for details see *Status of Active Filed Complaints* below)	**120**	**160**	**180**
COC's Disposition of Complaints			
Direct that the matter be referred, in whole or in part, to the Discipline Committee. (PEA s. 24. 2(a))	13	11	3
Direct that the matter not be referred. (PEA s. 24. 2(b))	35	30	37
Take such action as COC considers appropriate in the circumstances and that is not inconsistent with this Act or the regulations or by-laws. (PEA s. 24. 2(c))	33	9	23
COC's Timeliness Regarding the Disposition of the Complaint[2]			
Complaint disposed of within 90 days of filing	0	0	0
Complaint disposed of 91–180 days of filing	3	1	0
Complaint disposed of after more than 180 days of filing	78	49	63
COC Processing Time – Days from Complaint Filed to COC Disposition (12 mo. rolling avg.)			
Average # Days	554	509	755
Minimum # Days	154	176	258
Median # Days	414	427	731
Maximum # Days	1766	1761	1934

[1] Signed Complaint Form filed with the registrar.

[2] Days from Complaint Filed to date COC Decision is signed by COC chair.

STATUS OF ACTIVE FILED COMPLAINTS

Active Filed Complaints–Total		**180**
Complaints filed more than 180 days ago	**129**	**129**
Pending Approval and Reason regarding COC Decision	50	
Complaints under active consideration by COC	16	
Completed Investigation ready for COC consideration	10	
Regulatory Compliance Investigation	53	
Complaints filed 91–180 days ago	**28**	**28**
Pending Approval and Reason regarding COC Decision	0	
Complaints under active consideration by COC	0	
Completed Investigation ready for COC consideration	0	
Regulatory Compliance Investigation	28	
Complaints filed within the past 90 days	**23**	**23**
Pending Approval and Reason regarding COC Decision	0	
Complaints under active consideration by COC	0	
Completed Investigation ready for COC consideration	0	
Regulatory Compliance Investigation	23	

Figure 8: Status of Active Filed Complaints

Review by Complaints Review Councillor ***(PEA s. 26. (s))***
Where a complaint respecting a member of the Association or a holder of a certificate of authorization, a temporary licence, a provisional licence or a limited licence has not been disposed of by the COC **within 90 days** after the complaint is filed with the Registrar, upon application by the complainant or on their own initiative the Complaints Review Councillor may review the treatment of the complaint by the COC.

Glossary of Terms
Complaint Filed–Signed Complaint Form filed with the registrar.
Investigation Complete–Investigation Summary document prepared and complaint file ready for COC consideration

COMPLAINTS AND INVESTIGATION STATISTICS AS OF OCTOBER 31, 2024

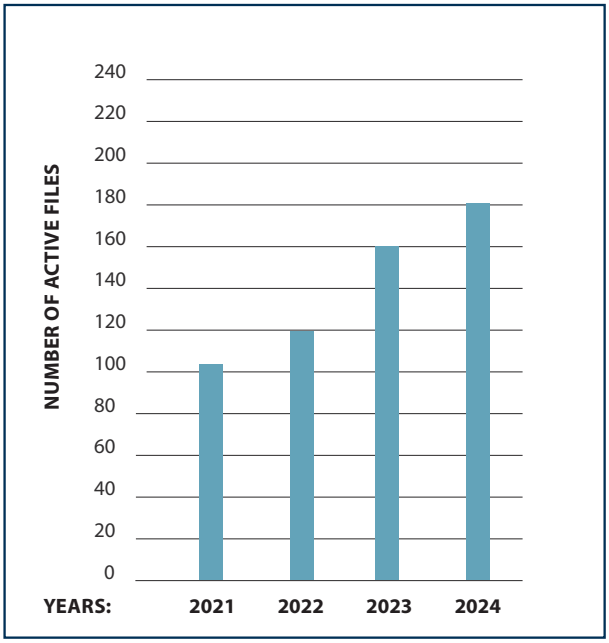


Figure 9: Number of Active Complaints Files, Year End 2021–2023 and October 31, 2024

The number of active complaints and investigation cases have risen by over 70 per cent from 2021 to 2024.

NOTICE OF PROPOSALS

The registrar can issue a notice of proposal to refuse, suspend or revoke a licence, limited licence, temporary licence or certificate of authorization. Anybody receiving a notice of proposal has 30 days to request a hearing with the Registration Committee.

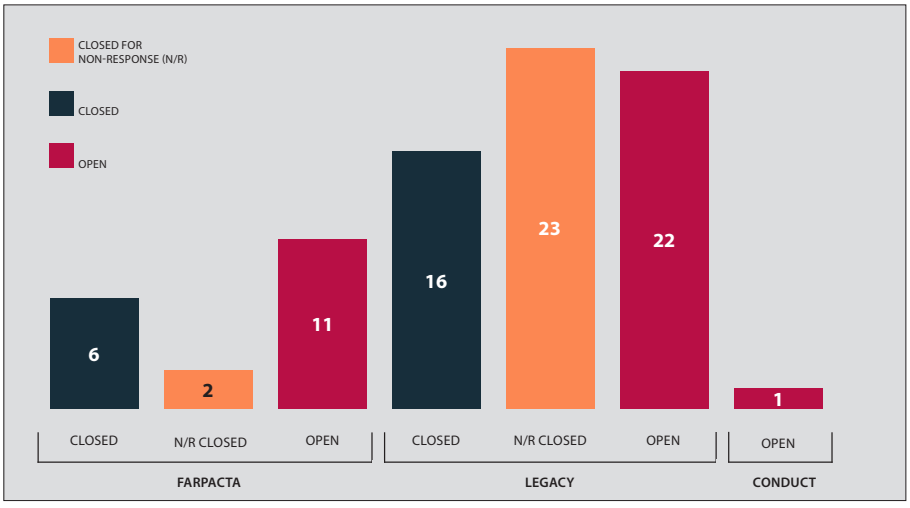
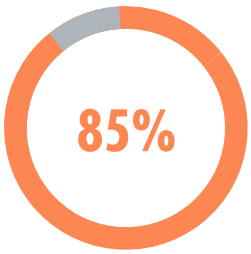
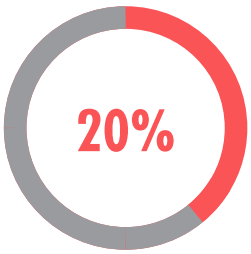


Figure 10: Notice of Proposals Q1 2023 until November 12, 2024

The number of notices of proposal for legacy files is still considerably higher than for FARPACTA files.



85 per cent of required licence holders have completed their first two PEAK elements.



20 per cent have already completed their required CPD hours.

CONTINUING PROFESSIONAL DEVELOPMENT (PEAK)

PEAK statistics and reminders

As of October 25, 70,500 licence holders are required to complete the 2024 PEAK program requirement, which has three elements. Approximately 85 per cent of PEAK-eligible licence holders have already complied with the first two elements—a self-administered evaluation of their Ontario practice and a self-paced learning module about Ontario engineering practice.

Currently, 10.5 per cent (about 7300) have not started PEAK this year. At the same time, 20 per cent of those with a CPD reporting requirement—the third PEAK element, which is due by December 31—have already completed their required CPD hours. We will soon send a reminder email for the remaining licence holders to finish their CPD reporting this year.

Throughout the summer and fall, PEO has employed multiple methods to remind licence holders of their PEAK obligation. A recent campaign saw the PEAK non-starter rate decrease by about 700 licence holders, from 11.5 per cent to 10.5 per cent.

PEAK in 2025

Online platform

PEO will soon migrate the PEAK program to a new platform, through which licence holders will continue to access through their PEO portal accounts. This will enable an enhanced user experience, and licence holders will continue to be able to view their PEAK history and revisit past modules.

Suspensions

An administrative sanction of a licence is a tool available to us to help encourage compliance with PEAK requirements; however, suspensions will be used only as a last resort. PEO's priority is to assist licence holders to voluntarily complete their annual requirements, and there will be ample warning and help provided to them first before suspensions are considered.

Communications and Outreach

We are in the process of developing a suite of communications to help educate licence holders about the program and how to complete it. Webpage updates, videos, instructional materials, a presentation and eblasts are all being assembled.

FINANCE

For the nine months ending September 30, 2024, revenues earned amounted to $27.6 million, while expenses incurred totaled $24.8 million, resulting in an excess of revenue over expenses of approximately $2.9 million, as shown in Figure 11. The $1.6 million favourable variance in revenue is largely attributable to a higher-than-expected investment income and 40 Sheppard revenue.

Total expenses for the nine months ending September 30, 2024, amounted to $24.8 million, compared to a budgeted spend of $27.5 million, resulting in a favourable variance of $2.8 million. This positive variance is primarily due to lower expenses incurred by PEO chapters, as well as lower-than-expected expenditures on legal expenses, staff salaries and benefits, contract staff and volunteer business expenses.

Figure 12 shows cash reserves of approximately $11 million and an investment portfolio of approximately $31 million as of September 30, 2024, compared to cash reserves of $10.2 million and an investment portfolio of $28 million as of September 30, 2023.

The Account Receivables team successfully addressed and resolved over 8000 inquiries from licence holders.

	2024 Actual	2024 Budget	Variance Actual vs Budget
TOTAL REVENUES	**$27,649,490**	**$26,047,879**	**$1,601,611**
Operations expenses	$22,715,719	$25,083,614	$2,367,895
Sp. projects and strategic plan exp	$2,049,324	$2,438,184	$388,860
TOTAL EXPENSES	**$24,765,043**	**$27,521,798**	$2,756,755
EXCESS OF REV OVER EXP	**$2,884,446**	**($1,473,919)**	**$4,358,366**

Figure 11: Revenues and expenses as of September 30, 2024

Over 75,000 licence holder payments were processed to date in 2024.

	2024 Actual	2023 Actual	Variance Actual Vs Actual
Cash	$11,001,950	$10,186,356	$815,594
Other current assets	$894,751	$611,506	$283,245
Marketable securities	$30,980,349	$27,986,398	$2,993,951
Capital assets	$26,248,655	$27,492,082	($1,243,427)
TOTAL ASSETS	**$69,125,705**	**$66,276,342**	**$2,849,363**
Current liabilities	$14,474,405	$14,421,039	$53,366
Employee future benefits	$12,061,100	$13,260,100	($1,199,000)
Net assets	$42,590,201	$38,595,203	$3,994,997
TOTAL LIABILITIES & NET ASSETS	**$69,125,705**	**$66,276,342**	**$2,849,363**

Figure 12: Assets and liabilities as of September 30, 2024

Remissions and Resignations

As of September 30, 2024, the data in Figure 13 shows that the estimated total number of P.Engs in fee remissions was approximately 13,233, in comparison to 13,068 as of the same period in 2023. The number of resignations as of September 30, 2024, was estimated to be 1036 as compared to 1925 resignations as of September 30, 2023. Additionally, the estimated number of P.Engs as of September 30, 2024, remained largely unchanged at 87,955 in comparison to 87,772 reported on September 30, 2023.

	YTD SEPT. 2024	YTD SEPT. 2023
Members seeking remission	2569	2144
Total members in fees remission	13,233	13,068
Members resigned	1036	1925
Total P.Engs	87,955	87,772

Figure 13: Estimated Remissions and Resignations as of September 30, 2024

CUSTOMER SERVICE

HIGHLIGHTS

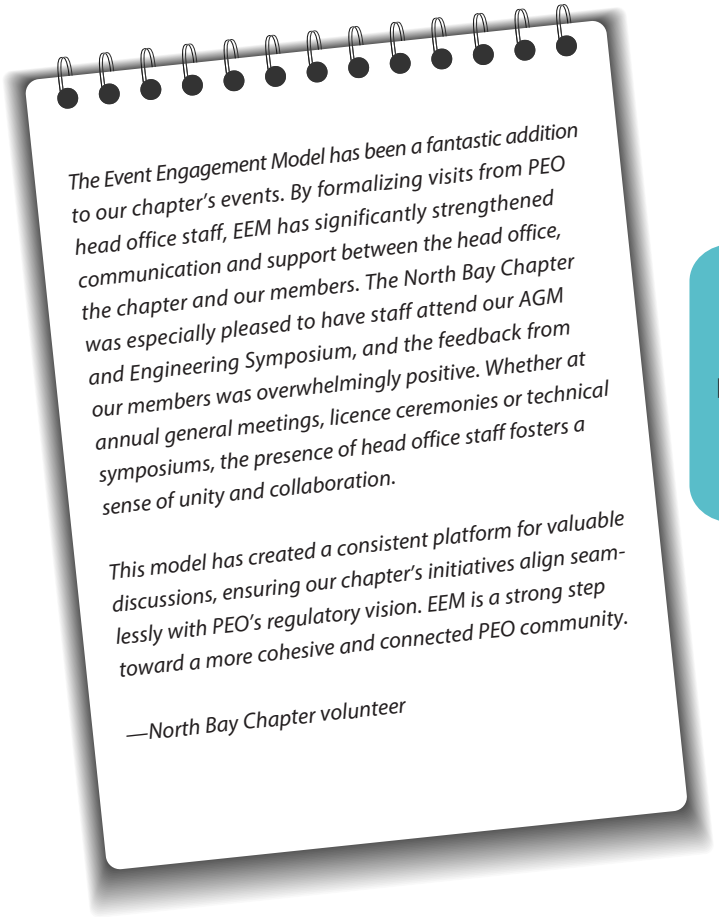
> Our post-response customer service survey indicates an overall satisfaction of 7.5/10, based on 133 responses.

> PEO's Customer Service team has responded to over 21,000 queries to date.

> The Customer Service team has responded to 98 per cent of queries without need for escalation.

From January 1 to September 30, 2024, PEO's Customer Service team handled 21,227 tickets, including 18,032 emails, 2871 calls and 144 walk-ins. The largest categories of queries pertain to the licensing process (both FARPACTA and legacy), PEAK and its requirements and technical support issues. Calls and emails requiring specific information related to an open application is forwarded to appropriate staff as required.

Customer Service continues to provide support to licence holders and applicants accessing our portal, PEAK, P.Eng. licensing processes and plans to expand coverage in 2025 to include support of Regulatory Compliance and Enforcement.



EVENT ENGAGEMENT MODEL

Throughout 2024, we have exceeded the goals set for our Events Engagement Model (EEM). These visits provide an important opportunity for senior PEO staff to engage with and learn from chapter volunteers and newly licensed engineers.

Feedback about the EEM has been positive, as represented by a testimonial from the North Bay Chapter.

REGION	2024 TARGET	2024 ACTUAL
East Central	2	3
Eastern	2	2
Northern	2	2
West Central	2	4
Western	2	2
ALL CHAPTERS	12	13

13

Exceeding expectations, PEO staff have attended 13 chapter events to date in 2024.

Figure 14: Table of visits

External Relations staff have attended 138 external events and established the Strategic Stakeholder Advisory Group in 2024.

EXTERNAL RELATIONS

External Relations engages a diverse range of stakeholders in at least three ways: the Stakeholder Relations unit supports the design, implementation and tracking of major strategic stakeholder relations projects and initiatives; the Pre-licensing Outreach unit engages stakeholders with an interest in PEO's role as a licensing body, the licence application process and the importance of licensure; and the Practice Advisory Services unit provides interpretation, education and guidance to stakeholders on standards of professional and ethical practice as set out in the *Professional Engineers Act* as well as guidance published by PEO. Through September and October, these three units combined for 138 engagement opportunities. We are also seeking feedback on PEO's revised CBA guides (see p. 8) from various stakeholders.

In the past year, Council also endorsed the formation of the Strategic Stakeholder Advisory Group (SSAG), whose role is to contribute to the process of policy development, in particular at the staff level. This helps to make sure that staff are asking the right questions and speaking to the right groups of stakeholders, both inside and external to the engineering community. As Council's goal is to make good regulatory policy, based on the best possible evidence and advice, the SSAG adds value for both Council and the staff who support this work.

So far this year, the SSAG has provided preliminary feedback and suggestions (including the identification of other sources of input) on three key issues: fitness to practise, time-based experience and annual reporting. The SSAG is meeting again this fall for further discussions on these and other matters that are on Council's workplan or anticipated for further Council consideration and decision. Ultimately, the SSAG's input and advice will be reflected in briefing notes presented to Council in the context of significant policy decisions.

To read more about the SSAG, including members' names, please refer to the June CEO/Registrar's Report.

Information Note – 2026+ Strategic Plan C-566-3.2b)

Purpose	For staff to update Council on the 2026+ Strategic Plan progress
Strategic/Regulatory Focus	*2026+ Strategic Plan development*
Motion	*For information only – no motion required*
Attachments	• Appendix A—Strategic Plan Working Group (SPWG) Terms of Reference

Summary

- Direction provided to MDR Strategy Group (consultant) to proceed with the 2026+ strategic planning process.
- A Strategic Plan Working Group (SPWG) has been established comprising of the Chairs of each governance committee, the President, and senior staff.
- The consultant has commenced outreach to consult with PEO's broad range of stakeholders.
- The consultant has completed the project roadmap to guide the strategic planning process.
- The consultant will host a one-day strategic plan focus group on December 9 with the SPWG.

Public Interest Rationale

Aligns with PEO's statutory mandate and commitment to transparency, accountability, and excellence in the engineering profession.

Background

- The purpose is to enable Council to approve PEO's 2026+ Strategic Plan in June 2025.
- The consultant is leading the strategic planning process as the facilitator of the SPWG.
- A broad range of internal and external stakeholders will be involved in consultation.
- Several engagements with Council are forthcoming: survey (2024), one-on-one meetings with the executive (2024), full Council in-person meetings (2025).
- Council will be kept updated at each Council meeting.

Considerations

- Risks
  - No risks identified – consultant and ELT engage weekly.
- Equity
  - A primary commitment for the next Strategic Plan.
  - Recommendations from PEO's communication audit for increased transparency, communication with Chapters, and external engagement will be key considerations.
- Key strategic issues
  - On December 9, SPWG will develop the next Strategic Plan's guiding principles.
- Costs and financial impacts
  - No costs beyond Council-approved expenses for the Strategic Plan.

Stakeholder Engagement

Outreach to a broad range of PEO's internal and external stakeholders will contribute to an inclusive Strategic Plan.

Next Steps

Council members will be invited by November 23 to participate in strategic planning consultations.

Prepared By:

- MDR Strategy Group (consultant)

C-566-3.2b)
Appendix A

TERMS OF REFERENCE

Professional Engineers Ontario (PEO) 2026+ Strategic Planning Working Group

1. Background and Purpose

- Professional Engineers Ontario (PEO) is embarking on its next strategic planning process (2026+).
- An ad-hoc Strategic Planning Working Group (SPWG) was established to guide and support the development of a comprehensive Strategic Plan that aligns with PEO's mission and vision.
- MDR Strategy Group (consultant) has been engaged to facilitate this strategic planning process.

2. Objectives and Scope of Work

The SPWG is tasked with:

- Supporting the strategic planning process on behalf of Council.
- Recommending key strategic priorities to guide PEO's operations and governance from 2026+.
- Analyzing outcomes of stakeholder consultation to determine priorities for 2026+.
- Recommending measurable goals and objectives that align with PEO's mission, vision, and regulatory role.

Operational specifics and implementation plans fall outside this group's mandate.

3. Membership and Composition

The SPWG consists of:

- **Council**
  - Councillor Gregory Wowchuk (President and Chair of Council)
  - Councillor Susan MacFarlane (Chair of the Governance & Nominating Committee)
  - Councillor Vicki Hilborn (Chair of the Regulatory Policy and Legislation Committee)
  - Councillor Lorne Cutler (Chair of the Audit and Finance Committee)
  - Councillor Luc Roberge (Chair of the Human Resources and Compensation Committee)

- **Senior Leadership Team**
  - Jennifer Quaglietta (CEO/Registrar)
  - Dan Abrahams (VP Policy & Governance and Chief Legal Officer)
  - Arun Dixit (VP Digital Transformation & Corporate Operations)
  - Americo Viola (VP Regulatory Operations & Deputy Registrar)
  - Deborah Sikkema (Chief People Officer/Human Resources)
  - Katarina Praljak (Director, Communications)
  - Marina Solakhyan (Director, Policy and Governance)
  - James Schembri (Director, Volunteer Engagement)

- **Consultant**
  - Daniel Roukema (CEO)
  - Collette Deschenes (Director, Communications Strategy)
  - Melissa Peneycad (Director, Public Engagement Strategy)

4. Roles and Responsibilities

- **Council Members:** Contribute to the strategic planning process with a governance oversight lens.
- **Senior Leadership Team Members:** Provide strategic insights into day-to-day operations and contribute to the delivery of an operational plan.
- **Consultant:** Facilitates the overall strategic planning process, including providing strategic insight and direction, overseeing stakeholder engagement, establishing strategic priorities, drafting the strategic plan, and seeking necessary input and approvals from Council and staff.

5. Deliverables

- Create a strategic planning project roadmap.
- Oversee SPWG engagement and involvement.
- Facilitate consultations.
- Provide strategic recommendations.
- Seek input and approvals from Council.
- Support Council in shaping and advancing the 2026+ strategic plan.

6. Meetings and Reporting

- The SPWG will meet as required.
- The consultant will report to ELT monthly and quarterly to Council.
- The consultant shall manage meeting logistics, prepare and distribute agendas, and provide summary notes.

7. Resources and Support

- The consultant will provide facilitation and project management resources.
- PEO will allocate necessary budgetary and administrative support to aid the strategic planning process.
- The consultant shall provide an online repository for strategic planning resources.

8. Timeline and Duration

- The SPWG will begin its activities in October 2024 and is expected to complete its work by June 2025.
- The group's progress will be reviewed periodically, and any required adjustments will be made to ensure timely completion of deliverables.

Professional Engineers Ontario

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Summary Report to Council of Audit and Finance Committee (AFC) Activity
November 29, 2024

Committee Meeting Date: November 18, 2024

Item/Topic	Discussion Summary	Assigned to	Next Steps	Status[1]	Separate Council Agenda Item?
Review of 2025 Draft Operating and Capital Budgets	Final review of draft operating and capital budgets for recommendation to Council.	Staff	For Council approval at Nov 29, 2024 meeting.	Continue	Yes
2025 Borrowing Resolution	Review of 2025 Borrowing Resolution for recommendation to Council.	Staff	Recommendation to Council for approval at Nov 29, 2024 meeting.	Continue	Yes
2024 Audit Plan	Committee met with Deloitte partner who presented their 2024 Audit Plan for review.	Staff	March 2025: Review of 2024 Draft Audited Financial Statements	Continue	No
Review of Financial Statements (@ Sep 30, 2024)	Review of Statements: Financial Position Projection, Projected Cash Flows, Revenues & Expenses, Balance Sheet, and Income Statement Variance Analysis.	Staff	Ongoing activity	Continue	No
Updates: Investments and Pension Plan	Committee received updates on and discussed investments and the pension plan.	Staff	Ongoing activities	Continue	No
PEO's Risk Register (In Camera)	AFC reviewed the risks identified as high priority, including key definitions in the realm of risk management and frequency of reporting	Staff	For the sharing of high-priority risks with Council at Nov 29, 2024 meeting.	Continue	Yes
Cybersecurity "Tabletop" Exercise (In Camera)	Introductory discussion included background information on cybersecurity and its rapid escalation and evolution; risk mitigation strategies; and staff and Council roles. Following the introduction, the committee engaged in a tabletop exercise involving hypothetical scenarios and covered areas including the overview of the triggering event, initial investigation, and response plan.	Staff	Ongoing activity	Continue	No

Next Committee Meeting: March 20, 2025

[1] Green=Complete; Blue=Continue; Yellow=Modify; Red=Discontinue

Decision Note – 2025 Budgets

Item	C-566-4.1
Purpose	To review and approve the draft 2025 budgets
Strategic/Regulatory Focus	Governance
Motion	That Council approve the draft 2025 budgets reviewed by the Audit and Finance Committee (AFC) and as presented to the meeting at C-566-4.1, Appendix A
Attachments	Appendix A – 2025 draft budgets

Summary

The draft 2025 budgets are presented following consultations with both the Audit and Finance Committee (AFC) and Council. The first draft was reviewed by the AFC on September 12, 2024. Subsequently, Council engaged in discussions on September 27, 2024, exploring factors influencing the budget and potential management strategies.

The draft 2025 budgets include PEO's operating, capital, Council special project, and strategic plan budgets, encompassing all expenses necessary to fulfill PEO's regulatory objectives. On November 18, 2024, the AFC conducted a second review and recommended that the draft 2025 budgets be presented to Council for approval.

Council is now requested to review and approve the draft 2025 budgets as submitted to ensure alignment with PEO's strategic and regulatory priorities.

Public Interest Rationale

Budgets are a critical tool for PEO to translate its regulatory mandate under the *Professional Engineers Act* into actionable, measurable, and financially sustainable activities.

Background

The executive leadership team and staff began work on the 2025 operating and capital budgets in June 2024. A draft of the 2025 operating, capital, Council special project, and strategic plan budgets, along with the 2024 forecast, was completed in August 2024 and distributed to the AFC prior to its meeting on September 12, 2024. During this meeting, the AFC met with staff to review the first draft of the 2025 budgets. Key highlights of the budgets were examined, and questions posed by AFC members were addressed by staff.

Following the discussion with the AFC, the draft 2025 budgets were presented to Council for information and guidance on budget management options at the Council meeting on September 27, 2024.

The updated budgets are being presented to the AFC at its Nov 18, 2024 meeting for its input and recommendation that these be presented to Council for approval at its Nov 29, 2024 meeting.

Considerations

Total revenues in 2025 are projected to be $37.7m, and total expenses to sustain operations, including council and strategic project spending, are budgeted at $38.2m, resulting in an anticipated deficit of approximately $445k. Details of the 2025 budget are provided in **Appendix A – 2025 Draft Budgets**. The spending on Council and strategic plan projects are $1.08m and $1.09m, respectively.

Table 1 – Summary of key financials (rounded to the nearest thousand)

	2025 Budget[1]	2024 Forecast[2]	2024 Budget[3]
Revenue	$37,742	$36,700	$34,636
Expenses - core operations	$36,026	$33,045	$34,761
Project and Council Initiatives	$1,075	$986	$796
Strategic Plan Projects	$1,086	$1,868	$3,522
Excess of revenue over expenses	**($445)**	**$801**	**($4,443)**
Cash & Mkt Securities (Reserve[4])	**$40,307**	**$39,762**	**$32,183**

Revenue

The estimated 2025 revenue is expected to be $37.7 million. This represents an increase of $1 million or 2.8% over the 2024 forecasted revenue. The main factors contributing to this increase are a $828k rise in P.Eng. revenue and a $670k increase in funds collected from application, registration, exam, and other fees.

This projected revenue increase is partially offset by a $647k expected decrease in investment income and $70k decrease in revenue from 40 Sheppard due to the likelihood that two tenants, occupying approximately 5,104 sq. ft., will not renew their leases, which are due for renewal in Q4 2024.

Expenses

The forecasted 2025 expenses for operations, council and strategic projects are expected to be $38.2m vs $35.9m in 2024. This represents an increase of $2.3m, or 6.4% as compared to 2024 forecasted expenses. In addition to compounded inflationary pressures, key reasons for the increase are:

- A net increase in employee salaries and benefits and retiree and staff future benefits of $1.5m, or 9%, over the 2024 forecast. This increase reflects transfers of contract staff to full-time positions in alignment with the Employment Standards Act (ESA), a global merit increase of 4%, and salary adjustments in 2025 to apply the recommendations of an external consultant to ensure that PEO continues to remain viable in the employment marketplace. The FT headcount in 2025 is expected to be 149 vs a budgeted headcount of 142 in FY 2024.
- An increase of $792k, or 44%, in spending for Computers and Telephones, driven by critical service contracts for essential security support and monitoring activities, software applications, backup and failover processes, server maintenance, etc.
- An increase of $315k or 28% in Legal corporate, prosecution, and tribunal expenses, largely due to an expected increase in costs for independent legal counsel for discipline, and complaints investigations.
- An increase of $265k in Chapter activities, driven by higher spending on various Chapter events and initiatives. This spend is partially offset by cost recoveries of $205k for Chapter events by way of ticket sales, and is recorded as Chapter revenues in the income statement.

[1] This column represents the final draft of PEO's 2025 budget, based on the best available data and estimates as of September, 2024.
[2] The 2024 forecast is as of September, 2024, and represents a combination of incurred year-to-date expenses and estimated projections for the remainder of the year.
[3] These amounts represent the totals approved by Council for PEO's 2024 budget.
[4] This amount represents the total reserve, which comprises of cash in the bank and PEO's investment portfolio, which consists of various securities.

The above increases are partially offset by:

- A reduction of $443k, or 41%, in spending on Contract staff. In 2025, PEO plans to transfer 7 of its Contract staff to permanent roles in alignment with the ESA, as noted above.
- An expected decrease in combined spending on Council and strategic projects of $693k in 2025, as compared to 2024.
- A projected reduction of $118k, or 17%, of spending on Consultants for various initiatives.

Capital improvements for 40 Sheppard

An amount of $275k has been budgeted for capital improvements that are part of Common Area Maintenance (CAM) costs which are recoverable from tenants and recommended by AY (Avison & Young), PEO's property manager. Planned improvements in 2025 include:

- $165k for a new access card system; and
- $110k for replacing heat pumps.

Facilities

The expenditures for 2025 consist of $50k for replacing old office furniture and for misc. contingencies.

The spend on a proposed renovation project is not included as part of these materials and will be presented to the AFC and Council as a separate item once further information is available.

Recommendation(s)

That Council approve the draft 2025 operating, capital, council special and strategic plan budgets

Next Steps

On receiving Council approval, the 2025 operating, capital, council special and strategic plan budgets will be used for supporting PEO operations in 2025

Prepared By:

Finance Team

Professional Engineers Ontario - DRAFT 2025 OPERATING BUDGET

Variance Analysis - 2025 Budget Vs 2024 Forecast

DRAFT - reviewed by the AFC on Nov 18, 2024

Appendix A

REF. NO	DESCRIPTION	2025 Bud	2024 Fcst	2024 Bud	2023 Act	Variances			
						2025 Bud Vs 2024 Fcst		2024 Fcst Vs 2024 Bud	
		$	$	$	$	$	%	$	%
	REVENUE	(A)	(B)	(C)	(D)	(E)	(F)	(G)	(H)
1	P. Eng Revenue	20,999,000	20,170,573	20,521,567	20,419,085	828,427	4.1%	(350,994)	(1.7)%
2	Appln, regn, exam and other fees	9,706,197	9,036,458	8,630,357	10,799,527	669,738	7.4%	406,102	4.7%
3	40 Sheppard Revenue	2,471,235	2,541,395	2,058,461	2,522,215	(70,160)	(2.8)%	482,934	23.5%
4	Affinity Revenue	2,299,391	2,079,977	1,941,596	1,140,377	219,414	10.5%	138,381	7.1%
5	Investment income	2,000,000	2,646,867	1,200,000	2,450,361	(646,867)	(24.4)%	1,446,867	120.6%
6	Chapter revenues	205,405	181,089	221,865	183,548	24,316	13.4%	(40,776)	(18.4)%
7	Advertising income	60,000	43,194	63,000	56,266	16,806	38.9%	(19,806)	(31.4)%
	TOTAL REVENUE	**37,741,227**	**36,699,553**	**34,636,846**	**37,571,379**	**1,041,674**	**2.8%**	**2,062,707**	**6.0%**
	EXPENSES - CORE OPERATIONS								
8	Salaries and benefits / Retiree and staff future benefits	19,406,146	17,868,111	18,542,167	14,755,423	(1,538,035)	(8.6)%	674,056	3.6%
9	40 Sheppard expenses	2,086,003	2,068,152	2,143,641	2,181,367	(17,852)	(0.9)%	75,489	3.5%
10	Purchased services	3,408,130	3,235,652	2,197,315	2,036,183	(172,478)	(5.3)%	(1,038,338)	(47.3)%
11	Computers and telephone	2,597,280	1,805,322	2,050,289	1,502,568	(791,958)	(43.9)%	244,968	11.9%
12	Chapters	1,171,100	905,971	1,312,234	987,561	(265,130)	(29.3)%	406,263	31.0%
13	Engineers Canada	815,800	809,206	809,976	1,033,732	(6,594)	(0.8)%	770	0.1%
14	Occupancy costs	1,085,720	918,228	860,544	863,204	(167,492)	(18.2)%	(57,685)	(6.7)%
15	Legal (Corporate, Prosecution & Tribunal)	1,445,800	1,130,671	1,422,747	1,889,585	(315,129)	(27.9)%	292,077	20.5%
16	Transaction fees	799,521	787,275	865,775	795,656	(12,246)	(1.6)%	78,500	9.1%
17	Contract staff	619,572	1,062,652	1,085,144	1,155,291	443,080	41.7%	22,492	2.1%
18	Amortization	476,902	469,824	503,031	471,094	(7,078)	(1.5)%	33,207	6.6%
19	Professional development	397,559	269,538	374,896	221,746	(128,022)	(47.5)%	105,359	28.1%
20	Volunteer expenses	377,941	466,750	828,200	297,730	88,809	19.0%	361,451	43.6%
21	Consultants	550,520	668,771	940,981	510,595	118,251	17.7%	272,210	28.9%
22	Insurance	136,164	129,691	184,875	144,885	(6,474)	(5.0)%	55,184	29.8%
23	Postage and courier	186,574	120,362	131,590	177,842	(66,212)	(55.0)%	11,228	8.5%
24	Recognition, grants and awards	101,429	91,389	84,692	138,143	(10,040)	(11.0)%	(6,697)	(7.9)%
25	Staff expenses	135,288	73,551	94,303	66,710	(61,737)	(83.9)%	20,752	22.0%
26	Office supplies	101,638	66,198	102,547	72,264	(35,440)	(53.5)%	36,350	35.4%
27	Advertising	45,000	40,561	147,500	30,583	(4,439)	(10.9)%	106,939	72.5%
28	Printing & photocopying	81,900	56,931	77,917	57,000	(24,969)	(43.9)%	20,986	26.9%
	TOTAL EXPENSES - CORE OPERATIONS	**36,025,988**	**33,044,803**	**34,760,364**	**29,389,161**	**(2,981,185)**	**(9.0)%**	**1,715,562**	**4.9%**
	EXCESS OF REV OVER EXP BEFORE UNDERNOTED	**1,715,239**	**3,654,750**	**(123,519)**	**8,182,217**	**(1,939,511)**	**(53.1)%**	**3,778,269**	**3058.9%**
	EXPENSES - NON CORE OPERATIONS								
29	**Projects and Council initiatives**	**1,075,000**	**985,705**	**796,425**	**3,080,512**	**(89,295)**	**(9.1)%**	**(189,280)**	**(23.8)%**
30	**Strategic Plan Project**	**1,085,532**	**1,867,956**	**3,522,345**	**799,346**	**782,424**	**41.9%**	**1,654,389**	**47.0%**
	EXCESS OF REVENUE OVER EXPENSES	**(445,293)**	**801,089**	**(4,442,289)**	**4,302,359**	**(1,246,382)**	**(155.6)%**	**5,243,378**	**118.0%**

Professional Engineers Ontario - DRAFT 2025 OPERATING BUDGET

Variance Analysis - 2025 Budget Vs 2024 Forecast

DRAFT - reviewed by the AFC on Nov 18, 2024

Ref. No.	Variance Explanation
1	Increase of 4.1 % in P.Eng revenues due to the expected growth in membership.
2	Expected increase in registrations, applications and exams.
3	Decrease in 40 Sheppard revenues is anticipated as two of our tenants whose leases expire in 2024 may not renew, potentially leading to an additional 5,104 sq ft, or 4%, in vacancy.
4	Expected affinity revenue from TD Meloche.
5	Expected investment income.
6	Expected cost recoveries from Chapters operations, which will partially offset spend on Chapter activities, as shown in line 12.
7	A slight increase in advertising revenue due to the expected improvement in market conditions.
8	Increase in salaries and benefits is due to the transfer of 7 contract staff to permanent roles, a 4% merit increase, and salary adjustments in 2025 based on the recommendation of an external consultant. The total expected full-time staff in 2025 is 149. The budgeted headcount for FY 2024 is 142.
9	Higher 40 Sheppard expenses largely due to higher utilities, property taxes, and amortization costs.
10	Increase in spend on Purchased services largely due to higher costs for printing dimension, exam costs, catering, accommodation, audio visual expenses, etc. for various in-person events / meetings such as the hybrid AGM, Council workshop, Regional Congresses.
11	Higher costs for Computers and telephones due to increase in spend on costs for secure online platform, various service maintenance contracts for software support, network security, server maintenance, IT equipment, etc.
12	An increase in spend on various Chapter activites in 2025. This spend is partially offset by cost recoveries from activities such as ticket sales which are reflected in Chapter revenues (line 6).
13	The Engineers Canada assessment rate is $8 per member in 2025 and is expected to increase to $10 per member in 2026.
14	Increase occupancy costs mainly due to increase in operating costs.
15	Increase in Legal (corporate, prosecution and tribunal) expenses largely due to an expected increase in costs for independent legal counsel for discipline, and complaints investigations.
16	An increase in transaction fees mainly driven by higher credit card commissions and related transaction costs, which constitute approx. 80% of the total spend on transaction fees. Currently, over 90% of payments are made via credit card, and this trend is expected to continue. Additionally, transaction costs for the payroll system are anticipated to rise, along with slightly higher costs for bank service fees.
17	Expected spend on contract staff.
18	An increase in Amortization costs due to spend on new capital projects and the continued amortization of spend on capital items such as furniture, IT and telecon equipment, etc. which were purchased in prior years.
19	Expected spend on Professional Development in 2025.
20	Volunteer expenses for travel accommodation, milleage, and air/train travel, registration etc, in various committee meetings.
21	Expenses for Consultants include spend on consultants for Council workshop, human resources, IT initiatives such as security consultant to sustain and support operations, etc.
22	Increase in Insurance costs due to higher premiums for property, errors & omissions/directors & officers, and cyber liability insurance.
23	Postage and courier costs are higher in 2025 due to an expected increase in postage expenses related to the mail-out of Engineering Dimensions.
24	Higher spend on Recognition, grants and awards in 2025 for events and PR items.
25	Increase in spend on Staff business expenses related to travel for in-person attendance at various events, meetings.
26	Increase in spend on office supplies.
27	Increase in advertising expenses due to expected higher spend on corporate communications.
28	Higher costs on printing and photocopying in 2025 are due to increase in leasing costs for photocopying equipment.

Professional Engineers Ontario

Council and Special Projects

DRAFT - reviewed by the AFC on Nov 18, 2024

S. No	Projects and Council initiatives	2024 Budget	2024 Forecast	2025	2026
1	HR related expenses	$500,000	$519,890	$450,000	-
2	Governance related expenses	$40,425	$328,338	$350,000	-
3	Anti-Racism WG	$106,000	$45,900	$30,000	-
4	Council Action Plan Recommendation	-		$50,000	-
5	Transformation and Other Initiatives	$50,000	$62,069	$125,000	-
6	Policy development initiatives	$30,000	$10,000	-	-
7	Councillor Training	$70,000	$19,740	$70,000	$73,500
		$796,425	**$985,937**	**$1,075,000**	**$73,500**

Professional Engineers Ontario

PEO Strategic Plan 2024-2025
Consolidated budget report for all goals

DRAFT - reviewed by the AFC on Nov 18, 2024

Goals		Activities	2024 Budget	2024 Forecast	2025 Budget
1. Improve licensing processes	1.1 Create fair, transparent, accessible and efficient application process	1.1.0 Present FARPACTA policy/timeline	$2,000	-	-
		1.1.1 FARPACTA tech soln - Phase 1 & 2	$710,000	$223,643	$50,000
		1.1.2 FARPACTA process	$250,000	$139,014	-
		1.1.3 Change management and communications	$20,000	-	-
		1.1.4 Measure FARPACTA compliance	$21,250	-	-
	1.2 Review licensing processes; implement changes	1.2.1 Implement mandatory CPD - Phase 1 (roll out, reminders)	$140,500	$35,000	$140,500
		1.2.2 Implement mandatory CPD - Phase 2 (business rules, sanctions)	$289,895	$148,568	$130,800
2. Optimize organizational performance	2.2. Ensure adequate IT; data collection/mgt	2.2.1 Digital transformation roadmap	$850,000	$614,251	$500,000
		2.2.2 Data governance model	$450,000	$94,173	$75,000
	2.3 Review/improve comms & business processes; ensure reflects EDI values	2.3.1 Organizational EDI strategy	$20,000	$530	-
		2.3.2 HR high performance team roadmap	$100,000	$50,000	$13,500
		2.3.3 Modernize payroll processes	$30,000	$15,365	-
		2.3.4 Communications strategy (value, EDI)	$20,000	$711	$20,000
		2.3.5 Modernize budget processes	$63,700	$45,550	$70,732
		2.3.7. Develop Customer Service Model	$300,000	$291,491	$15,000
3. Implement governance improvement program	3.3 Establish metrics for governance performance	3.3.1 Review governance committee evaluations	$80,000	$42,000	-
		3.3.2 Annual assessment council effectiveness	$40,000	-	$70,000
4. Refresh vision; ensure stakeholders see PEO value	4.1 Dialogue with members & stakeholders	4.1.3 Stakeholder engagement session(s)	$60,000	$167,659	-
	4.3. Develop proposed vision for consultation	4.3.1 Draft new vision	$25,000	-	-
		4.3.2 Post vision consultation	$50,000	-	-
		Total	**$3,522,345**	**$1,867,956**	**$1,085,532**

Professional Engineers Ontario

Statement of financial position projection

for the years ending December 31

DRAFT - reviewed by the AFC on Nov 18, 2024

	2024 FORECAST	2025 BUDGET	2026 PROJECTION	2027 PROJECTION	2028 PROJECTION	2029 PROJECTION
ASSETS						
CURRENT						
Cash	10,649,849	10,649,849	10,649,849	10,649,849	10,649,849	10,649,849
Marketable securities at fair value	29,112,173	29,657,326	28,714,504	27,607,014	26,327,494	24,868,293
Cash & marketable securities	39,762,022	40,307,175	39,364,353	38,256,863	36,977,343	35,518,142
Accounts receivable	914,468	914,468	914,468	914,468	914,468	914,468
Prepaid expenses, deposits & other assets	482,889	475,197	467,505	459,813	452,121	444,429
	41,159,379	41,696,840	40,746,327	39,631,145	38,343,932	36,877,040
Capital assets	26,012,755	25,030,001	25,190,678	25,318,437	25,411,871	25,469,502
	67,172,134	**66,726,842**	**65,937,005**	**64,949,582**	**63,755,803**	**62,346,542**
LIABILITIES						
CURRENT						
Accounts payable and accrued liabilities	2,233,693	2,233,693	2,233,693	2,233,693	2,233,693	2,233,693
Fees in advance and deposits	12,370,498	12,370,498	12,370,498	12,370,498	12,370,498	12,370,498
	14,604,191	14,604,191	14,604,191	14,604,191	14,604,191	14,604,191
LONG TERM						
Employee future benefits	12,061,100	12,061,100	12,061,100	12,061,100	12,061,100	12,061,100
	12,061,100	12,061,100	12,061,100	12,061,100	12,061,100	12,061,100
Net Assets	40,506,843	40,061,551	39,271,714	38,284,291	37,090,512	35,681,251
	67,172,134	**66,726,842**	**65,937,005**	**64,949,582**	**63,755,803**	**62,346,542**

Professional Engineers Ontario

Statement of projected cash flows

for the years ending December 31

DRAFT - reviewed by the AFC on Nov 18, 2024

	2024	2025	2026	2027	2028	2029
Operating	**FORECAST**	**BUDGET**	**PROJECTION**	**PROJECTION**	**PROJECTION**	**PROJECTION**
Excess (deficit) of revenue over expenses - operations	801,089	(445,293)	(789,837)	(987,423)	(1,193,779)	(1,409,261)
Add (deduct) items not affecting cash						
Amortization	1,305,648	1,307,753	1,339,324	1,372,240	1,406,567	1,442,368
Amortization - other assets (leasing)	24,623	7,692	7,692	7,692	7,692	7,692
Total Operating	**2,131,360**	**870,153**	**557,179**	**392,510**	**220,480**	**40,799**
Financing						
Repayment of mortgage	(362,904)	-	-	-	-	-
Total Financing	(362,904)	-	-	-	-	-
Investing						
Additions to Capital Assets:						
Additions to Building	(55,000)	(275,000)	(1,000,000)	(1,000,000)	(1,000,000)	(1,000,000)
Additions to other Capital Assets (F&F, IT, Phone, AV, etc.)	(50,000)	(50,000)	(500,000)	(500,000)	(500,000)	(500,000)
Total Investing	(105,000)	(325,000)	(1,500,000)	(1,500,000)	(1,500,000)	(1,500,000)
Net Cash Increase/(Decrease) during the year	1,663,456	545,153	(942,821)	(1,107,490)	(1,279,520)	(1,459,201)
Cash, beginning of year	8,986,393	10,649,849	11,195,002	10,252,180	9,144,690	7,865,170
Cash, end of year	**10,649,849**	**11,195,002**	**10,252,180**	**9,144,690**	**7,865,170**	**6,405,969**
Cash/Investments, end of year	**39,762,022**	**40,307,175**	**39,364,353**	**38,256,863**	**36,977,343**	**35,518,142**
Comprised of:						
Cash	10,649,849	10,649,849	10,649,849	10,649,849	10,649,849	10,649,849
Investments	29,112,173	29,657,326	28,714,504	27,607,014	26,327,494	24,868,293
	39,762,022	**40,307,175**	**39,364,353**	**38,256,863**	**36,977,343**	**35,518,142**

Professional Engineers Ontario

Statement of Projected revenues and expenses

for the years ending December 31

DRAFT - reviewed by the AFC on Nov 18, 2024

	2024 FORECAST	2025 BUDGET	2026 PROJECTION	2027 PROJECTION	2028 PROJECTION	2029 PROJECTION
REVENUE						
P. Eng Revenue	$20,170,573	$20,999,000	$21,313,985	$21,633,695	$21,958,200	$22,287,573
Appln, regn, exam and other fees	9,036,458	9,706,197	10,191,506	10,701,082	11,236,136	11,797,943
40 Sheppard Revenue	2,541,395	2,471,235	2,507,144	2,543,771	2,581,131	2,619,238
Investment income	2,646,867	2,000,000	2,030,000	2,060,450	2,091,357	2,122,727
Advertising income	43,194	60,000	60,450	60,903	61,360	61,820
Chapter revenues	181,089	205,405	208,486	211,613	214,787	218,009
Affinity Revenue	2,079,977	2,299,391	2,414,361	2,535,079	2,661,833	2,794,924
	$36,699,553	**$37,741,227**	**$38,725,932**	**$39,746,593**	**$40,804,804**	**$41,902,235**
EXPENSES						
Salaries and benefits / Retiree and staff future benefits	17,868,111	19,406,146	19,794,269	20,190,154	20,593,957	21,005,837
40 Sheppard expenses	2,068,152	2,086,003	2,116,535	2,147,677	2,179,443	2,211,843
Purchased services	3,235,652	3,408,130	3,578,537	3,757,464	3,945,337	4,142,604
Amortization	469,824	476,902	500,747	525,784	552,074	579,677
Engineers Canada	809,206	815,800	1,019,750	1,070,738	1,124,274	1,180,488
Computers and telephone	1,805,322	2,597,280	2,727,144	2,863,501	3,006,676	3,157,010
Chapters	905,971	1,171,100	1,229,655	1,291,138	1,355,695	1,423,479
Occupancy costs	918,228	1,085,720	1,107,434	1,129,583	1,152,175	1,175,218
Legal (Corporate, Prosecution & Tribunal)	1,130,671	1,445,800	1,474,716	1,504,210	1,534,295	1,564,980
Transaction fees	787,275	799,521	839,497	881,472	925,545	971,823
Volunteer expenses	466,750	377,941	385,499	393,209	401,074	409,095
Contract staff	1,062,652	619,572	650,551	683,078	717,232	753,094
Postage and courier	120,362	186,574	195,903	205,698	215,983	226,782
Consultants	668,771	550,520	578,046	606,948	637,296	669,161
Recognition, grants and awards	91,389	101,429	106,500	111,825	117,417	123,288
Professional development	269,538	397,559	417,437	438,309	460,224	483,236
Office supplies	66,198	101,638	106,720	112,056	117,659	123,542
Insurance	129,691	136,164	142,972	150,121	157,627	165,508
Printing & photocopying	56,931	81,900	85,995	90,295	94,809	99,550
Staff expenses	73,551	135,288	142,052	149,155	156,613	164,443
Advertising	40,561	45,000	47,250	49,613	52,093	54,698
	33,044,803	**36,025,988**	**37,247,210**	**38,352,029**	**39,497,497**	**40,685,356**
EXCESS OF REVENUE OVER EXPENDITURE before undernoted	**$3,654,750**	**$1,715,239**	**$1,478,722**	**$1,394,564**	**$1,307,307**	**$1,216,879**
EXPENSES - NON CORE OPERATIONS	2,853,661	2,160,532	2,268,559	2,381,987	2,501,086	2,626,140
EXCESS OF REVENUE OVER EXPENDITURE	**$801,089**	**($445,293)**	**($789,837)**	**($987,423)**	**($1,193,779)**	**($1,409,261)**

Professional Engineers Ontario

40 Sheppard Ave. - Statement of projected revenues and expenses

for the years ending December 31

DRAFT - reviewed by the AFC on Nov 18, 2024

Description	2024 FORECAST	2025 BUDGET	2026 PROJECTION	2027 PROJECTION	2028 PROJECTION	2029 PROJECTION
Rental income	848,631	830,531	847,142	864,084	881,366	898,993
Operating cost	1,900,041	1,940,646	1,979,459	2,019,048	2,059,429	2,100,618
Property tax	425,591	432,816	432,816	432,816	432,816	432,816
Parking income	154,200	138,600	138,600	138,600	138,600	138,600
Other space rent	104,359	104,362	104,362	104,362	104,362	104,362
TOTAL REVENUE	**3,432,822**	**3,446,955**	**3,502,378**	**3,558,911**	**3,616,573**	**3,675,389**
Less PEO Share of CAM & Tax	893,292	975,720	995,234	1,015,139	1,035,442	1,056,151
TOTAL REVENUE excluding PEO share of CAM & Tax	**2,539,530**	**2,471,235**	**2,507,144**	**2,543,771**	**2,581,131**	**2,619,238**
Utilities	457,582	471,312	480,738	490,353	500,160	510,163
Property taxes	454,986	469,824	479,220	488,805	498,581	508,553
Amortization	369,876	386,251	393,976	401,856	409,893	418,091
Payroll	155,522	159,812	163,008	166,268	169,593	172,985
Janitorial	239,272	259,089	264,271	269,556	274,947	280,446
Repairs and maintenance	214,629	206,626	210,758	214,973	219,273	223,658
Property management and advisory fees	104,560	103,408	105,476	107,586	109,737	111,932
Road and ground	16,262	18,028	18,389	18,756	19,131	19,514
Administration	47,338	54,680	55,774	56,889	58,027	59,187
Security	327,100	333,284	339,950	346,749	353,684	360,757
Insurance	38,186	40,001	40,801	41,617	42,449	43,298
TOTAL RECOVERABLE EXPENSES	2,425,312	2,502,315	2,552,361	2,603,408	2,655,476	2,708,586
Amortization of building	388,296	388,296	388,296	388,296	388,296	388,296
Amortization of leasing costs	24,623	7,692	7,692	7,692	7,692	7,692
Amortization of non-recov cap	77,653	56,304	56,304	56,304	56,304	56,304
Other non-recoverable expenses	45,084	107,116	107,116	107,116	107,116	107,116
TOTAL OTHER EXPENSES	534,267	559,408	559,408	559,408	559,408	559,408
TOTAL EXPENSES	**2,959,578**	**3,061,723**	**3,111,769**	**3,162,816**	**3,214,884**	**3,267,994**
Less PEO Share of CAM & Tax	893,292	975,720	995,234	1,015,139	1,035,442	1,056,151
TOTAL EXPENSES excluding PEO share of CAM	**2,066,286**	**2,086,003**	**2,116,535**	**2,147,677**	**2,179,443**	**2,211,843**
NET INCOME	**473,243**	**385,232**	**390,609**	**396,094**	**401,689**	**407,395**

Professional Engineers Ontario

2025 Capital Budget

DRAFT - reviewed by the AFC on Nov 18, 2024

S. No		Project	2024		2025
			Budget	Forecast	Budget
	Spend on 40 Sheppard	**40 Sheppard Ave - Recoverable expenses**			
1		Waterproof Transformer Vault	137,500	-	-
2		Parking Garage repair	165,000	-	-
3		New Card Access System	126,500	-	165,000
4		CO2 Sensors	31,002	-	-
5		Overhaul Chiller	71,500	-	-
6		5 Unit Heat Pump Replacement	55,000	55,000	-
7		ARC Flash Study	17,600	-	-
8		Phased Replacement of Original Heat Pumps		-	110,000
		TOTAL 40 Sheppard- Common Area	**604,102**	**55,000**	**275,000**
		40 Sheppard Ave - Non-Recoverable			
9		Tenant inducements for leasing space on 2nd Floor	59,825	-	-
		Total 40 Sheppard Ave - Non-Recoverable	**59,825**	**-**	**-**
		Facilities			
10		Facilities Capital Expenditures and Contingencies	375,000	50,000	50,000
		Total Facilities	**375,000**	**50,000**	**50,000**
		TOTAL Spend on Capital Assets	**$1,038,927**	**$105,000**	**$325,000**

Decision Note – 2025 Borrowing Resolution

Item	C-566-4.2
Purpose	To renew PEO's existing operating line of credit with Scotiabank until January 31, 2026
Strategic/Regulatory Focus	Governance
Motion	That Council: a) approve the borrowing of money upon the credit of the association by way of: i) an operating overdraft up to an amount not to exceed CAD$250,000; and ii) use of corporate credit cards with an aggregate limit not to exceed CAD$120,000. b) in compliance with PEO's Internal Control Banking Policy, hereby confirms that this Borrowing Resolution is to expire on January 31, 2026.
Attachments	Appendix A – Borrowing Resolution

Summary

PEO seeks to renew its credit facilities with Scotiabank until January 31, 2026. These include an operating overdraft of up to CAD $250,000 for contingencies and corporate credit cards with a combined limit of CAD $120,000 for business expenses. The resolution aligns with PEO's By-Law #1 and Internal Control Banking Policy, requiring annual Council approval. The Audit and Finance Committee has recommended approval to ensure continued access to these facilities. Upon Council approval, the President and Registrar will finalize the renewal with Scotiabank.

Background

PEO's By-Law #1 – Section 47 states that:
"Council may from time to time borrow money upon the credit of the Association by obtaining loans or advances or by way of overdraft or otherwise"

PEO's Internal Control Banking Policy requires that "the borrowing resolution shall be reviewed and approved by Council on an annual basis".

To help manage the working capital and provide convenience to senior volunteers and staff, Scotiabank provides PEO two credit facilities:

a. an operating overdraft up to an amount not to exceed CAD $250,000 at Prime rate; and
b. use of corporate credit cards with an aggregate limit not to exceed CAD $120,000.

Considerations

These credit facilities expire on January 31, 2025, so this agenda item is being considered now. In order to renew the existing credit arrangement with the bank for another year, Council is asked to approve the borrowing resolution.

PEO has adequate cash flow to meet its business requirements on a regular basis. The overdraft facility is only for contingency purposes. Corporate credit cards provide convenience to senior volunteers and senior staff for PEO business expenditures. The credit card balances are paid off every month.

Recommendation(s)

The Audit and Finance Committee recommends that Council:

a. Approve the borrowing of money upon the credit of the association by way of:
   i) An operating overdraft up to an amount not to exceed CAD$250,000; and
   ii) Use of corporate credit cards with an aggregate limit not to exceed CAD$120,000.
b. In compliance with PEO's Internal Control Banking Policy, confirm that this Borrowing Resolution is renewed to expire on January 31, 2026.

Next Steps

If approved by Council, the President and the Registrar will sign the attached (Appendix A) Borrowing Resolution so that Scotiabank can renew the current credit facilities to January 31, 2026.

Prepared By:
Finance Team

ASSOCIATION OF PROFESSIONAL ENGINEERS OF ONTARIO (PEO)

BORROWING RESOLUTION

PEO's By-Law No. 1, section 47(a) states that:

> *The Council may from time to time: (a) borrow money upon the credit of the Association by obtaining loans or advances or by way of overdraft or otherwise;*

Resolution

That Council:

a) approve the borrowing of money upon the credit of the Association by way of:

   i) establishing an operating overdraft up to an amount not to exceed CAD $250,000; and

   ii) obtaining corporate Visa credit cards with an aggregate limit not to exceed CAD$120,000.

b) confirm that this Borrowing Resolution expires on January 31, 2026.

Certified this 29th day of November, 2024 to be a true, and a complete copy of section 47 of By-Law No. 1 of the Association and of a resolution passed by Council.

Signed by _____

Gregory P. Wowchuk, P.Eng., FEC, President

Signed by _____

Jennifer Quaglietta, P.Eng., MBA, ICD.D, CEO/Registrar

Professional Engineers Ontario

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Summary Report to Council of Governance and Nominating Committee (GNC) Activity November 29, 2024

Committee Meeting Date: November 13, 2024

Item/Topic	Discussion Summary	Assigned to	Next Steps	Status[1]	Separate Council Agenda Item?
Safe Disclosure Policy	The Committee reviewed the revised *Safe Disclosure Policy* and recommended that the revised policy be sent to Council for approval at the November Council Meeting.	N/A	Recommendation to Council for approval on November 29, 2024	Continue	Yes
Councillor Training Protocol for 2025	The Committee reviewed and approved the *2025 Councillor Training Protocol*. The committee reviewed an increase of training funds per councillors, references to HST, and an option for Councillors to pay directly. The committee recommends the Protocol be sent to Council at the November Council Meeting.	Staff	Recommendation to Council for approval on November 29, 2024	Continue	Yes
Regional Councillors Committee Charter	The Committee reviewed the updated Terms of Reference for the Regional Council Committee (RCC), as recommended by the RCC committee. The charter reflects current responsibilities of Regional Councillors is supporting chapter operations. The Committee recommends the update charter for Council Approval at the November Council Meeting	Staff	Recommendation to Council for approval on November 29, 2024	Continue	Yes
Establishing Metrics for Governance Performance, Including Principles of Equity Diversity and Inclusion	The Committee received a presentation from Watson Board Advisors on the Government Effectiveness project which provided insights on the scope and components of the council evaluation frameworks, findings from surveys, and status of the project and next steps.	Staff	Preliminary report to be presented at the GNC in February 2025.	Continue	No

[1] Green=Complete; Blue=Continue; Yellow=Modify; Red=Discontinue

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Item/Topic	Discussion Summary	Assigned to	Next Steps	Status[1]	Separate Council Agenda Item?
	Watson Board Advisors will facilitate a focus group with GNC members and staff in December of 2024 and deliver a final report with a proposed multi-year framework for council approval in February 2025.				
Council Remuneration Framework	The Committee received an update on the Council Remuneration Framework project from Santori Consulting Inc. Santori Consulting Inc is currently in the research phase of the project and is gathering feedback from stakeholders. A preliminary report will be presented to the GNC in February 2025, with the final report be sent to Council for approval at the February Council meeting .	Staff	Preliminary report to be presented at the GNC committee in February 2025.	Continue	No
Election Committees Reform (CESC and RESC)	The Committee discussed reform with respect to the Central Election and Search Committee and the Regional Election and Search Committee regarding composition and their roles in future elections. The committee provided feedback for staff regarding potential changes to the CESC and RESC and will provide further options at the February GNC meeting.	Staff	Staff to take committee's feedback and present options at the next GNC meeting.	Continue	No

Next Committee Meeting: February 4, 2025

Decision Note – Safe Disclosure (Whistleblower) Policy

Agenda Item No.	C-566-5.1
Purpose	For Council to review and adopt a revised Safe Disclosure (Whistleblower) Policy.
Strategic/Regulatory Focus	Governance oversight and optimizing operational performance
Motion	That Council approves the revised Safe Disclosure ("Whistleblower") Policy at C-566-5.1, Appendix A. [*simple majority required*]
Attachments	Appendix A – Safe Disclosure ("Whistleblower") Policy (revised draft) Appendix B – Safe Disclosure ("Whistle-blower") Policy (current policy) Appendix C – Safe Disclosure ("Whistleblower") Policy (redlined draft)

Summary
GNC recommends that Council approve the revised Safe Disclosure Policy to improve on the existing policy, particularly in terms of clarity of definitions and coherence of process, in line with Council's direction set at its February 2024 meeting.

Public Interest Rationale
As an organization with a public interest mandate, unlawful activities or misconduct at PEO can result in harm to the public interest. A Safe Disclosure Policy can help ensure that individuals report wrongdoing.

Background
The current *Safe Disclosure ("Whistle-blower") Policy* (**Appendix B**) was approved by Council in November 2022. It aims to ensure that staff members, volunteers, and Councillors can safely report misconduct or suspected misconduct, without retaliation. A strong whistleblower program can support corporate accountability, result in the preservation or recovery of funds, prevent lawsuits, maintain public trust, and minimize reputational damage to the organization and profession.

After concerns were raised regarding the current policy, external legal counsel provided advice regarding revisions to the policy. Council considered this advice and passed a motion at its February 2024 meeting tasking GNC with considering possible improvements to the policy and returning with recommendations by the end of 2024. GNC met to discuss improvements to the policy at its November 2024 meeting.

Considerations
The following proposals for improvement form the basis of the revised draft at **Appendix A**:

- The procedures have been simplified, the protection of anonymity in reports to Council has been clarified, and the appeal procedure has been removed per the advice of external legal counsel (provided to Council in February 2024). Appeals are typically not found in these types of policies to ensure finality for participants, and to minimize cost and disruption where an investigation has already been conducted.
- The Outcomes section now sets out next steps in the process for each category of workplace participant (staff, CEO/Registrar, Council-appointed volunteer, non-Council appointed volunteer, Councillor) respectively.
- Changes have been made to account for the new Councillor Code of Conduct and the new Anti-Workplace Violence, Harassment and Discrimination Policy (AWVHD Policy). For example, the procedure now indicates that the Code of Conduct is engaged when Councillor issues arise, and

definitions of workplace participants such as “volunteers” have been changed to be consistent with those in the AWVHD Policy.

- The procedures now provide greater clarity regarding who is responsible for reports and complaints, particularly where the CEO/Registrar would be in a conflict of interest, as well as their ability to delegate.
- A definition of "retaliation" has been added in the definition section, along with clarification to what constitutes not ‘acting in good faith.’
- The “duty” to report has been replaced with strong encouragement to report in order to ensure consistency with policies such as AWVHD (where, for example, a report of harassment is encouraged but not required), and to minimize complaints that are frivolous or based solely on supposition.
- Confidentiality has been highlighted as a key element of the policy.

Stakeholder Engagement

Stakeholder engagement is not needed for this item.

Recommendation(s)

GNC recommends that Council approve the revised Safe Disclosure Policy.

Next Steps

If Council approves the revised Safe Disclosure Policy, it will take effect and be implemented.

Prepared By: Policy Staff

Professional Engineers Ontario
Safe Disclosure ("Whistleblower") Policy

C-566-5.1
Appendix A

Statement of Principles

Professional Engineers Ontario (PEO) is committed to fostering an organizational culture where individuals are encouraged to report wrongdoing and feel safe to do so.

Purpose

This Policy is intended to establish the expectation and conditions for the reporting and handling of allegations of unethical, illegal, or fraudulent conduct.

This Policy sets out the expectation that all staff, volunteers, and Councillors should report misconduct or suspected misconduct, including unethical, illegal, or fraudulent conduct. It also guarantees that anyone who makes a report in good faith will be protected from retaliation.

Application and Scope

This policy applies:

a) To all PEO staff, volunteers, and Councillors;

b) At every level of PEO and in all work settings, including off-site meetings, PEO-sanctioned social events, Chapter events, and all forms of electronic communication related to work;

c) To all aspects of the employment relationship, contractual relationship, volunteer relationship and Councillor role and to the services provided to PEO by staff, volunteers, and Councillors.

Definitions

For the purpose of this Policy:

"CEO/Registrar" is the Registrar of PEO.

"**Chief Legal Officer**" is the general counsel of PEO or equivalent.

"Council" is the Council of PEO.

"**Councillor**" is an elected or appointed member of Council.

"PEO" is the Association of Professional Engineers of Ontario.

"**Retaliation**" means any direct or indirect detrimental action threatened or taken against an individual.

"**Staff**" means PEO employees, including contract employees and independent contractors.

"Volunteer" means any individual who provides services to PEO who is not a staff member, a Councillor, or a third party supplier. Examples of volunteers at PEO include any Chapter volunteers and any member of a regulatory committee such as the Complaints Committee or the Academic Requirements Committee. Some volunteers are appointed by Council and may be approved by the provincial government. Some volunteers may receive remuneration for their services.

Policy Statement

Reporting Misconduct

Staff, volunteers, and Councillors are strongly encouraged to report any factual information or any reasonable belief regarding misconduct or suspected misconduct in relation to the PEO, including but not limited to:

- Committing fraud or financial impropriety;
- Providing false or misleading information, or withholding material information on PEO's financial statements, tax returns or other PEO documents;
- Pursuit of a benefit or advantage that brings the individual, or has the potential to bring the individual, into a conflict of interest with their obligations to PEO;
- Misappropriation or misuse of PEO's resources; and/or
- Unauthorized alteration or manipulation of electronic records.

Acting in Good Faith

Anyone filing a report alleging misconduct or suspected misconduct must act in good faith and have reasonable grounds for believing the information disclosed indicates wrongdoing. Making allegations which are proven to have been made maliciously and/or with knowledge that they are misleading or false constitutes a violation of this Policy, and could result in disciplinary action up to and including termination or removal of responsibilities/position.

No Retaliation

No staff member, volunteer, or Councillor who in good faith makes a report under this Policy, or participates in good faith in an investigation under this Policy, shall suffer retaliation. Anyone who is found to have retaliated against someone in violation of this Policy will be subject to discipline up to and including termination or removal of responsibilities/position.

Procedures

Procedure for Misconduct Reports

Any factual information or any reasonable belief regarding misconduct or suspected misconduct is reported to the **CEO/Registrar or staff designate**.

Where the **CEO/Registrar** is alleged to be involved in misconduct, or in circumstances where it would otherwise not be appropriate for the CEO/Registrar to receive the report, the alleged misconduct is reported to the President. The Chief Legal Officer shall be informed of the report.

Procedure for Retaliation Complaints

Individuals who believe that retaliatory action has been taken against them because they have made a report under this Policy, or for their participation in an investigation, may make a complaint in writing.

Complaints of retaliation are to be made to the **CEO/Registrar or staff designate**.

Where the **CEO/Registrar** is involved in an allegation of retaliation, or in circumstances where it would otherwise not be appropriate for the CEO/Registrar to receive the complaint, the complaint is made to the President. The Chief Legal Officer shall be informed of the complaint.

Confidentiality
Reports and complaints under this Policy will be kept confidential to the extent possible, except to the extent necessary to conduct an appropriate investigation, take action following the investigation, or as required by law.

Investigation of Good Faith in Reporting and Retaliation Complaints
Where the **CEO/Registrar or staff designate** has a reasonable belief that an individual has made a misconduct report in the absence of good faith, they shall authorize an investigation and determine its appropriate scope.

Where the **CEO/Registrar or staff designate** has received a written complaint of retaliation, they shall authorize an investigation and determine its appropriate scope.

In circumstances where it would not be appropriate for the **CEO/Registrar** to be responsible for an investigation, an external investigator shall be engaged.

Outcome
If an investigation finds a report was not made in good faith or that retaliation has occurred:

- Where the investigation subject is a **staff member**, actions and sanctions shall be determined by the appropriate employment superior, in consultation with Human Resources, in the ordinary course of employment.
- Where the investigation subject is the **CEO/Registrar**, action and sanctions shall be determined by Council in the ordinary course of employment.
- Where the investigation subject is a **Council-appointed volunteer**, action and sanctions shall be determined by Council.
- Where the investigation subject is a **non-Council appointed volunteer**, action and sanctions shall be determined by the CEO/Registrar or staff designate.
- Where the investigation subject is a **Councillor**, the investigation report shall be referred to the process prescribed in the Code of Conduct.

Upon completion of the proceedings, Council shall be informed of the report or complaint and the outcome, but the anonymity of all individuals involved in the report or complaint shall be maintained.

In all cases, investigation subjects and complainants shall be advised in writing of the outcome of the investigation.

Approved by: Council

Approval Date:

Effective Date:

Last Update

November 2022

Revision History

Professional Engineers Ontario

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C-566-5.1
Appendix B

Policy Name:	**Safe Disclosure ("Whistle-blower") Policy**		
Date Issued:	**November 2022**	**Review date:**	
Applies To:	**All Employees, Volunteers, and Council of PEO**		
Owner:	**Council**	**Handler:**	**Operations**

OVERVIEW AND PREFACE

This Policy is intended to establish the expectation and conditions for the reporting and handling of allegations of unethical, illegal, or fraudulent conduct.

Anyone associated with Professional Engineers Ontario ("PEO") is expected to demonstrate honesty and integrity in fulfilling their responsibilities and must comply with all applicable laws and regulations. PEO expects all employees, volunteers, and council members to abide by the highest standards of business and personal ethics in the conduct of any work done on behalf of the organization or under its auspices.

This Policy sets out the duty of all employees, volunteers, and council members to report misconduct or suspected misconduct, including fraud and financial impropriety. It also guarantees that anyone who makes a report in good faith will be protected from retaliation.

DEFINITIONS

For the purpose of this policy:

"Council" includes both those who are elected and those who are appointed by the Lieutenant Governor-in Council to the Council of the Association of Professional Engineers of Ontario.

"PEO" refers to the Association of Professional Engineers of Ontario

"Volunteer" any individual who receives no remuneration for carrying out duties on behalf of PEO, including unpaid or receiving honorarium members of committees and task forces, chapter volunteers and individuals appointed by Council to external boards or agencies.

"ELT" Executive Leadership Team. The ELT includes the CEO/ Registrar, any Deputy Registrar(s) and any staff Vice Presidents, one of whom may also serve as Chief Legal Officer.

"Compliance Officer" for the purpose of this Policy would be the Chief Executive Officer (CEO/Registrar or designate).

"Employees" means anyone being paid through PEO's payroll.

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POLICY

Duty to Report Misconduct

It is the duty of all Council members, employees, and volunteers to report any factual information or any reasonable belief regarding misconduct or suspected misconduct, including fraud and financial impropriety. This includes but is not limited to:

- Providing false or misleading information, or withholding material information on PEO's financial statements, tax returns or other public documents.
- Pursuit of material benefit or advantage in violation of any of PEO's Policies
- Misappropriation or misuse of PEO's resources such as funds or assets
- Unauthorized alteration or manipulation of electronic records.

Acting in Good Faith

Anyone filing a complaint alleging a type of misconduct covered by this policy must act in good faith and have reasonable grounds for believing the information disclosed indicates wrongdoing. Making allegations that cannot be substantiated and which are proven to have been made maliciously and/or with knowledge that they are false could result in disciplinary action up to and including termination or removal of responsibilities/position.

No Retaliation

No employee, volunteer, or council member who in good faith makes a report under this policy shall suffer retaliation. Retaliation means any direct or indirect detrimental action threatened or taken against an individual. Anyone who is found to have retaliated against someone who has made a report in good faith under this policy will be subject to discipline up to and including termination.

PROCEDURES

The CEO/Registrar is the Compliance Officer responsible for investigating and resolving all reports under this policy and is required to report to Council on all such reports. The Chair of Council (or alternatively, the Chief Legal Officer or such other person designated by the CEO/Registrar for this purpose) shall be the Compliance Officer for any reports where the CEO/Registrar is either the person making the report or the subject of such a report.

The role of the Compliance Officer with respect to protection against retaliation is to receive written reports of retaliation; to keep a confidential record of all reports received; to inform Council of the reports; and to conduct a review within 30 business days of receiving the report.

Reporting of Misconduct

In most cases, an employee is encouraged to share their questions, complaints or concerns with their manager, or applicable chapter or committee member. However, if the employee, volunteer, or committee member is not comfortable going this route, the individual is encouraged to speak with or they may approach the Compliance Officer, the Chief Legal Officer or such person designated by the CEO/Registrar for this purpose, or any member of the Executive Leadership Team (ELT) to report such cases.

Any ELT member or staff in a management role who uncovers suspected misconduct must report such misconduct in writing to the Compliance Officer. An employee with concerns or complaints may also submit their concerns in writing directly to the Compliance Officer. Reports under this policy will be kept confidential to the extent possible, consistent with the need to conduct an adequate investigation.

The Compliance Officer will acknowledge receipt of any report under this policy in writing within ten business days. All reports will be investigated within 30 business days except for extenuating circumstances. Appropriate action will be taken at the completion of the investigation. Council will be informed of all such reports and their disposition.

Reporting of Retaliation
Individuals who believe that retaliatory action has been taken against them because they have made a report under this policy should forward all information and documentation to support their complaint to the Compliance Officer. Reports of retaliation will be kept confidential to the extent possible, consistent with the need to conduct an adequate investigation.

If the result of the investigation indicates there is a threat or credible case of retaliation, the Compliance Officer will refer the findings to HR and the appropriate manager(s) for staff and to Council itself for councillors and volunteers

If the investigation reveals no threat or credible case of retaliation, the complainant will be advised of other informal mechanisms for conflict resolution. The complainant will be advised in writing the outcome of the investigation from the Compliance Officer. Council will be informed of the outcome.

Appeal Procedure
Should the complainant not be satisfied with the findings made by ~~of~~ the Compliance Officer, the complainant may make a direct appeal to the Chief Legal Officer, or such other person designated by the CEO/Registrar for this purpose within 20 business days of the receipt of the written report. Ruling from the Chief Legal Officer or designated person will constitute the final disposition of the complaint.

Employee Acknowledgement
I have read the *Whistleblower Policy* set forth above. I understand its contents, agree to abide by it and acknowledge that the Policy forms part of my contract of employment. I also agree to seek clarification from my manager regarding any aspect of the Policy on which I am unclear.

Name:			
Signature:		**Date:**	

Professional Engineers Ontario
Safe Disclosure ("Whistleblower") Policy

C-566-5.1
Appendix C

Statement of Principles

Professional Engineers Ontario (PEO) is committed to fostering an organizational culture where individuals are encouraged to report wrongdoing and feel safe to do so.

Purpose

This Policy is intended to establish the expectation and conditions for the reporting and handling of allegations of unethical, illegal, or fraudulent conduct.

This Policy sets out the expectation that all staff, volunteers, and Councillors should report misconduct or suspected misconduct, including unethical, illegal, or fraudulent conduct. It also guarantees that anyone who makes a report in good faith will be protected from retaliation.

Application and Scope

This policy applies:

a) To all PEO staff, volunteers, and Councillors;

b) At every level of PEO and in all work settings, including off-site meetings, PEO-sanctioned social events, Chapter events, and all forms of electronic communication related to work;

c) To all aspects of the employment relationship, contractual relationship, volunteer relationship and Councillor role and to the services provided to PEO by staff, volunteers, and Councillors.

Definitions

For the purpose of this Policy:

"CEO/Registrar" is the Registrar of PEO.

"**Chief Legal Officer**" is the general counsel of PEO or equivalent.

"Council" is the Council of PEO.

"**Councillor**" is an elected or appointed member of Council.

"PEO" is the Association of Professional Engineers of Ontario.

"**Retaliation**" means any direct or indirect detrimental action threatened or taken against an individual.

"**Staff**" means PEO employees, including contract employees and independent contractors.

"Volunteer" means any individual who provides services to PEO who is not a staff member, a Councillor, or a third party supplier. Examples of volunteers at PEO include any Chapter volunteers and any member of a regulatory committee such as the Complaints Committee or the Academic Requirements Committee. Some volunteers are appointed by Council and may be approved by the provincial government. Some volunteers may receive remuneration for their services.

Policy Statement

Reporting Misconduct

Staff, volunteers, and Councillors are strongly encouraged to report any factual information or any reasonable belief regarding misconduct or suspected misconduct in relation to the PEO, including but not limited to:

- Committing fraud or financial impropriety;
- Providing false or misleading information, or withholding material information on PEO's financial statements, tax returns or other PEO documents;
- Pursuit of a benefit or advantage that brings the individual, or has the potential to bring the individual, into a conflict of interest with their obligations to PEO;
- Misappropriation or misuse of PEO's resources; and/or
- Unauthorized alteration or manipulation of electronic records.

Acting in Good Faith

Anyone filing a report alleging misconduct or suspected misconduct must act in good faith and have reasonable grounds for believing the information disclosed indicates wrongdoing. Making allegations which are proven to have been made maliciously and/or with knowledge that they are misleading or false constitutes a violation of this Policy, and could result in disciplinary action up to and including termination or removal of responsibilities/position.

No Retaliation

No staff member, volunteer, or Councillor who in good faith makes a report under this Policy, or participates in good faith in an investigation under this Policy, shall suffer retaliation. Anyone who is found to have retaliated against someone in violation of this Policy will be subject to discipline up to and including termination or removal of responsibilities/position.

Procedures

Procedure for Misconduct Reports

Any factual information or any reasonable belief regarding misconduct or suspected misconduct is reported to the **CEO/Registrar or staff designate**.

Where the **CEO/Registrar** is alleged to be involved in misconduct, or in circumstances where it would otherwise not be appropriate for the CEO/Registrar to receive the report, the alleged misconduct is reported to the President. The Chief Legal Officer shall be informed of the report.

Procedure for Retaliation Complaints

Individuals who believe that retaliatory action has been taken against them because they have made a report under this Policy, or for their participation in an investigation, may make a complaint in writing.

Complaints of retaliation are to be made to the **CEO/Registrar or staff designate**.

Where the **CEO/Registrar** is involved in an allegation of retaliation, or in circumstances where it would otherwise not be appropriate for the CEO/Registrar to receive the complaint, the complaint is made to the President. The Chief Legal Officer shall be informed of the complaint.

Confidentiality

Reports and complaints under this Policy will be kept confidential to the extent possible, except to the extent necessary to conduct an appropriate investigation, take action following the investigation, or as required by law.

Investigation of Good Faith in Reporting and Retaliation Complaints

Where the **CEO/Registrar or staff designate** has a reasonable belief that an individual has made a misconduct report in the absence of good faith, they shall authorize an investigation and determine its appropriate scope.

Where the **CEO/Registrar or staff designate** has received a written complaint of retaliation, they shall authorize an investigation and determine its appropriate scope.

In circumstances where it would not be appropriate for the **CEO/Registrar** to be responsible for an investigation, an external investigator shall be engaged.

Outcome

If an investigation finds a report was not made in good faith or that retaliation has occurred:

- Where the investigation subject is a **staff member**, actions and sanctions shall be determined by the appropriate employment superior, in consultation with Human Resources, in the ordinary course of employment.
- Where the investigation subject is the **CEO/Registrar**, action and sanctions shall be determined by Council in the ordinary course of employment.
- Where the investigation subject is a **Council-appointed volunteer**, action and sanctions shall be determined by Council.
- Where the investigation subject is a **non-Council appointed volunteer**, action and sanctions shall be determined by the CEO/Registrar or staff designate.
- Where the investigation subject is a **Councillor**, the investigation report shall be referred to the process prescribed in the Code of Conduct.

Upon completion of the proceedings, Council shall be informed of the report or complaint and the outcome, but the anonymity of all individuals involved in the report or complaint shall be maintained.

In all cases, investigation subjects and complainants shall be advised in writing of the outcome of the investigation.

~~**Appeal Procedure**~~

~~Should the complainant not be satisfied with the findings made by of the Compliance Officer, the complainant may make a direct appeal to the Chief Legal Officer, or such other person designated by the CEO/Registrar for this purpose within 20 business days of the receipt of the written report. Ruling from the Chief Legal Officer or designated person will constitute the final disposition of the complaint.~~

~~**Employee Acknowledgement**~~

~~I have read the *Whistleblower Policy* set forth above. I understand its contents, agree to abide by it and acknowledge that the Policy forms part of my contract of employment. I also agree to seek clarification from my manager regarding any aspect of the Policy on which I am unclear.~~

Approved by: Council

Approval Date:

Effective Date:

Last Update

November 2022

Revision History

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Summary Report to Council of Human Resources and Compensation Committee (HRCC) Activity November 29, 2024

Committee Meeting Date: November 14, 2024

Item/Topic	Discussion Summary	Assigned to	Next Steps	Status[1]	Separate Council Agenda Item?
CEO/Registrar Goal Setting for 2025	The committee reviewed and provided input into the CEO/Registrar draft 2025 performance goals. The proposed goals are tied to PEO's regulatory mandate and strategy approved by council. HRCC committee members provided feedback to staff and will prepare a final draft of the performance goals for approval at the February HRCC meeting.	Staff	Staff to take committee's feedback and provide final draft of performance goals at the next HRCC meeting	Continue	No

Next Committee Meeting: February 4, 2025

[1] Green=Complete; Blue=Continue; Yellow=Modify; Red=Discontinue

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Summary Report to Council of Regulatory Policy and Legislation Committee (RPLC) Activity November 29, 2024

Committee Meeting Date: November 12, 2024

Item/Topic	Discussion Summary	Assigned to	Next Steps	Status[1]	Separate Council Agenda Item?
Professional Guidelines Review: Services of the Engineer Acting Under the Drainage Act Guideline	The committee agreed with the recommendation to discontinue the Services of the Engineer Acting Under the Drainage Act Guideline.	Staff	For Council approval at the November 29, 2024 meeting	Continue	Yes
Proposed Regulatory Change: Non-Cooperation With PEO Investigations & Inquiries	Committee reviewed: ○ Policy Impact Analysis that identifies gaps in PEO's current regulatory regime pertaining to PEO's ability to hold licence holders accountable for non-cooperation PEO investigations and inquiries; ○ a proposal that the definition of "professional misconduct" be amended to include failure to cooperate with a PEO investigation or a written inquiry from PEO; and There were discussions related to the proposed professional misconduct amendment, including the suggestion that alternative means to address the issue be explored in the consultation. The committee requested more clarity on the operational aspect of the proposal before the item is presented to Council.	Staff	Provide more information at the February RPLC meeting as requested by the committee	Continue	No
Professional Guidelines Review: The Professional Engineer as an Expert Witness Guideline	Staff provided an overview of the current expert witness guideline, which included a policy impact analysis and highlighted the current risks. Staff recommends that the Guideline be maintained but revised to address gaps related to currency, scope, and communications.	Staff	New version of the guideline to RPLC in 2025	Continue	No
Enhanced Mandatory Reporting	Staff provided an overview of the regulatory proposal that would mandate		Conduct consultations.	Continue	No

[1] Green=Complete; Blue=Continue; Yellow=Modify; Red=Discontinue

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Item/Topic	Discussion Summary	Assigned to	Next Steps	Status[1]	Separate Council Agenda Item?
	licence holders to report additional personal, business, practice, and conduct-related information to PEO. The committee discussed the need for rationale and justification to differentiate between mandatory and optional information areas; and requested clarity on how the information will be used and stored.		Item will come back to the RPLC for further review		
Time-Based Experience Requirement	Staff provided an update and discussed the policy impact analysis related to PEO's time-based experience requirements. Staff will continue to monitor PEO's performance under the Competency Based Assessment model and report back to RPLC and Council in mid-2025.		This item will come back to RPLC for further review.	Continue	No
Canadian Experience Removal Impact Analysis	The Committee was given an update regarding a preliminary analysis on some surveys that staff conducted. Staff will continue to monitor and provide the committee with further updates on an annual basis.	Staff	Monitor and report to RPLC in one year	Continue	No
Performance Standards for Crane Inspections 0.Reg. 260/08 Change (In Camera)	The committee was provided with the sealed regulation for their review.	Staff	For Council approval at the November 29, 2024 meeting	Continue	Yes

Next Committee Meeting: February 6, 2025

Decision Note – Future Direction of the Engineering Intern (EIT) Program

Agenda Item Number	C-566-7.1
Purpose	
Motion	

Information on this item will be provided at the Council meeting.

Prepared By: Secretariat

Information Note (Discussion if required) – Tribunal Activity Report

Agenda Item No.	C-566-8.1
Purpose	To update Council about the activities of the Tribunals Office and related Committees
Strategic/Regulatory Focus	*The Tribunals are required under the PEA.*
Motion	*N/A*
Attachments	N/A

Summary

This is a status update on the activities undertaken by the tribunals since the last council meeting.

Public Interest Rationale

Tribunals assists PEO in meeting the principal object of the association in accordance with the *Professional Engineers Act,* R.S.O. 1990, c. P. 28, s. 2(3).

Background

Tribunals staff work with Committee chairs to arrange and provide training in adjudication for the members of the committee and to support them in all their activities as pre-hearing chairs, panel members and decision writers. The staff and committee members work on improving the materials that parties appearing before them can access.

Activity Update

Discipline Committee:

- The Discipline Committee handbook sub-committee continues to work on updating their handbook. The sub-committee has completed a draft which has been shared with the Committee as a whole for feedback and commentary.
- The Committee held 2 PHC and one hearing on the merits since the last meeting of Council.
- The Committee held their second of 2 annual business meetings for 2024, which included training by ILC.
- 3 new matters have been referred to the Discipline Committee since the last meeting of Council.

Registration Committee

- The Registration Committee held 2 PHC and 1 hearing on the merits since the last meeting of Council.
- The Committee held their second of 2 annual business meetings for 2024, which included training by ILC.

Complaints Review Councillor

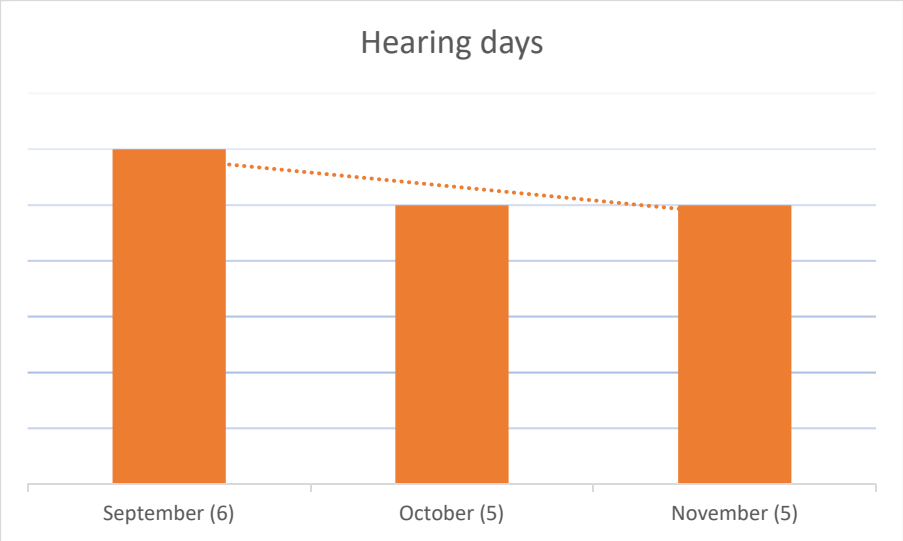
- The Complaints Review Councillor received 1 request for review since the last meeting of Council.
- Where the CRC investigates, a report is filed for Council's information.

Fee Mediation Committee

- There have been 2 requests for fee mediation assistance, one matter will proceed, the other matter is not a proper matter for the Committee to consider as it falls outside the committee's legislative mandate.

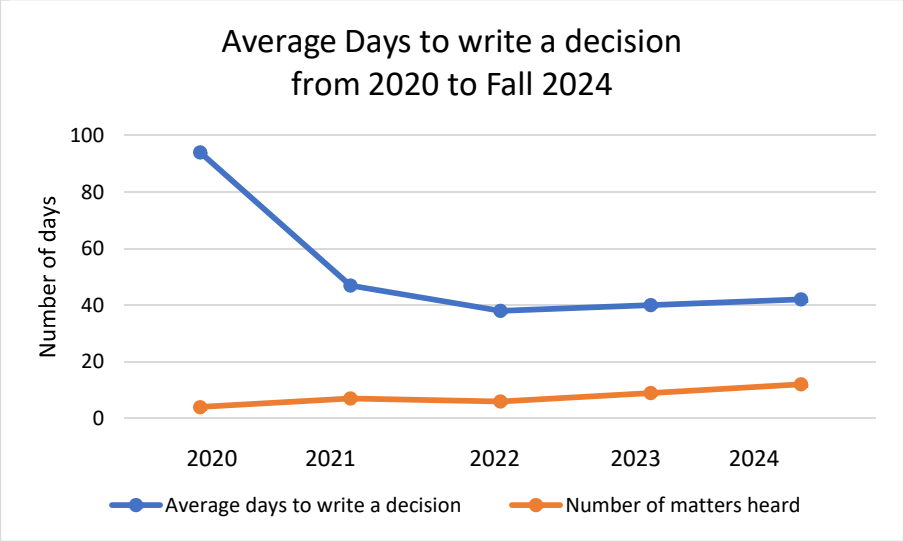
Adjudicator Days since last Council meeting

These are the number of days when the committees have held a hearing or pre-hearing conference.



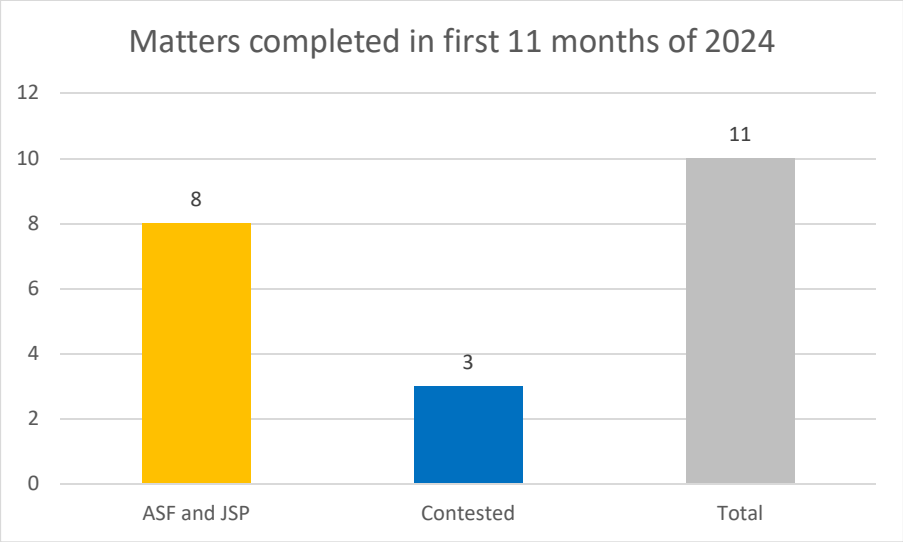
Discipline Committee

Average number of days to provide decision after the end of the hearing.



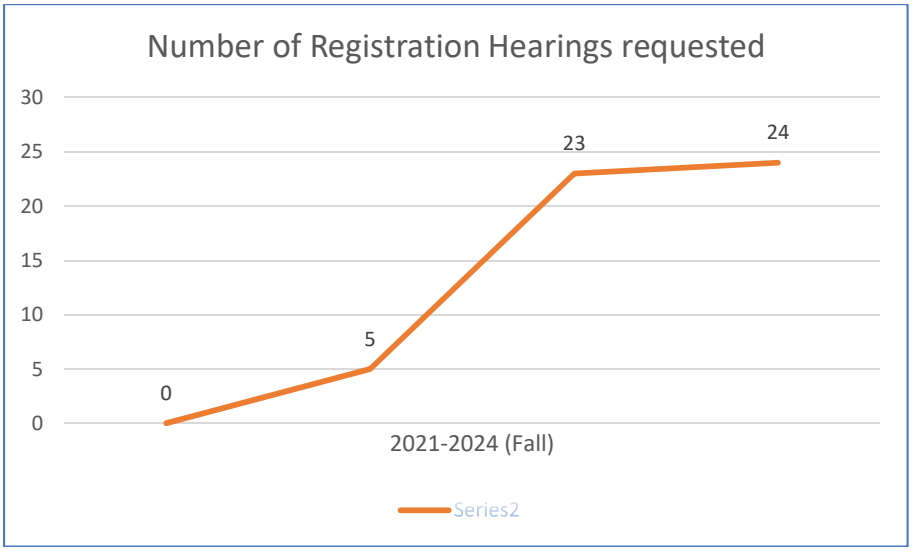
Discipline Committee

Matters completed in the first 11 months of 2024 that were either contested or resolved with the assistance of an Agreed Upon Statement of Facts (ASF) and Joint Submission on Penalty (JSP)



Registration Committee – Requests for hearings.

The number of hearings requested before the Registration Committee.



Decision – Visioning for Relevance Update

Item	C-566-8.2
Purpose	For Past President Fraser and Crestview Strategy (The Visioning 2050 Project Team) to present the final Visioning 2050 Project report and shortlisted vision statements for non-binding referendum by Members.
Strategic/Regulatory Focus	*2023-2025 Strategic Plan Objective*
Motion	*(1) That Council receive the four Vision Statements and Interpretive Document Provided in Appendix A.* *(2) That the four Vision Statements be presented through a non-binding referendum/question to members no later than March 2025 to determine the most member favoured Vision Statement.* *(3) That one of the four Vision Statements and the Interpretive Document be brought to the April 2025 Council meeting for approval.*
Attachments	Appendix A – Visioning 2050 Vision Statements and Interpretive Document

Summary and Background

A component of PEO's current strategic plan included the need to develop and bring forward a new and revised vision statement(s) for Council's consideration. This initiative has been led by Past President Roydon Fraser, with support from Crestview Strategy. The draft vision statements and accompanying interpretive document is the result of thorough grassroots engagement with licensees, students, and PEO's stakeholder network over the past 14 months.

Utilizing an iterative user-based design process, hundreds of possible vision statements were tested through the engagement process resulting in the four shortlisted vision statements presented to Council.

Between 1993 and 2022 PEO's vision statement changed four times, about every seven years. In 2023 Council decided that no vision statement would be included in PEO's 2023-2025 strategic plan, but instead adopted the 2023-25 strategic goal to develop a 2050 oriented vision statement for PEO that seeks relevance and value for PEO and the P.Eng. To maximize longevity along with relevance and value this is the first grassroots development of a PEO vision statement, and first development of an interpretive document.

Public Interest Rationale

An updated and relevant vision statement reflects the long-term aspirations of how the PEO will protect and serve the public through its governance of the profession.

Stakeholder Engagement

Volunteers	Meetings	Vision Statements	Survey Responses
109	102	62	2745

In the initial phase during fall 2023, 99 PEO member volunteers were organized into 10 advisory groups. Over the course of 3 months, 60 Advisory Group meetings were held. These groups generated 62 preliminary vision statements, from which 10 common themes were identified.

Phase 2 commenced in winter 2023, focusing on developing an interpretive document based on the identified themes. The advisory groups were consolidated from 10 to 3, with 47 highly engaged volunteers. The top 20 statements were presented to the Working Group, complemented by analyses of their themes and language.

By spring 2024, Phase 3 was underway, with the focus on finalizing the vision statement and interpretive document. The advisory groups were tasked with interpreting and providing feedback on the assigned themes. This phase involved extensive stakeholder engagement, including an in-person engagement with P.Eng. license holders at PEO's AGM in April, as well as interactions with Council, Chapters, OSPE, and student organizations. A total of 96 survey responses highlighted the importance of crafting a vision that resonates with stakeholders, promoting diversity, empowering engineers, and ensuring public trust and safety.

In Phase 4, we reached out to PEO's stakeholders, Ontario's engineering students, and licensees with surveys tailored to each group. More specifically, we attended ESSCO's PEO-SC Conference in October to engage with students, facilitating direct engagement and feedback. Through this process, we received survey responses from 20 stakeholders, 70 students, and 2,559 licensees. These insights were instrumental in refining the following four vision statements.

C-566-8.2
Appendix A

crestview strategy

Vision Statements & Interpretive Document

Visioning 2050

FOR:

Professional Engineers of Ontario
Council Review

November 29th, 2024

Professional Engineers Ontario

Calgary, Edmonton, Halifax, London (UK), Ottawa, **Toronto**, Vancouver, Washington DC
crestviewstrategy.com

Visioning 2050 in Review

The Professional Engineers Ontario (PEO) engaged in a comprehensive visioning process, Visioning 2050, facilitated by Crestview Strategy, to help chart the path forward as a regulator that will meet the needs of the future of the profession. This initiative aimed to refresh PEO's vision to ensure relevance and value for all stakeholders.

The entire approach to engagement was grounded on the basis that a vision statement should be developed from the grassroots up, ensuring it proactively reflects the input, insights, and values of PEOs members and mandate as a regulator. This process led to the largest engagement initiative undertaken by PEO to date, enabling volunteer members to challenge assumptions, guide the iterative process and help chart the path forward for the future of the profession.

A good vision statement is goal-oriented, inspiring, and widely accepted by an array of stakeholders.

As part of this process, the following objectives are being considered to ensure the effectiveness of the vision statement:

- **Audacious, Ambitious, and Inspiring.** The vision should be bold and motivating.
- **Self-Regulation.** It should clarify the role of self-regulation at PEO.
- **Measurable Metrics or Goals.** The vision should include clear, measurable goals.
- **Decision-Making Aid.** It should assist Council in making and guiding decisions.
- **Appealing Readability**. The vision should be well-written and resonate positively with readers.

By the Numbers

Volunteers	Meetings	Vision Statements	Survey Responses
109	102	62	2745

In the initial phase during fall 2023, 99 PEO member volunteers were organized into 10 advisory groups. Over the course of 3 months, 60 Advisory Group meetings were held. These groups generated 62 preliminary vision statements, from which 10 common themes were identified. The top five themes were Empowerment and Excellence in Engineering, Equity, Diversity, and Inclusivity, Public Safety and Trust, Leadership in Innovation and Change, and Self-governance. This phase demonstrated the passion and insight of the advisory group members and laid the groundwork for the subsequent stages.

Phase 2 commenced in winter 2023, focusing on developing an interpretive document based on the identified themes. The advisory groups were consolidated from 10 to 3, with 47 highly engaged volunteers. The members that remained were dedicated and committed to the process, taking time out of their busy schedules to meet with their fellow volunteers. During this

phase, each group continued to refine and rank the vision statements through multiple rounds of iteration. The top 20 statements were presented to the Working Group, complemented by analyses of their themes and language. The themes were then ranked and interpreted, forming the basis of the interpretive document.

By spring 2024, Phase 3 was underway, with the focus on finalizing the vision statement and interpretive document. The advisory groups were tasked with interpreting and providing feedback on the assigned themes. They were prompted to come up with challenge questions to test and refine the vision statements. This phase involved extensive stakeholder engagement, including an in-person engagement with P.Eng. licence holders at PEO's AGM in April, as well as interactions with Council, Chapters, OSPE, and student organizations. A total of 96 survey responses highlighted the importance of crafting a vision that resonates with stakeholders, promoting diversity, empowering engineers, and ensuring public trust and safety.

After the advisory groups' seven vision statements were refined to encapsulate PEO's core values and future aspirations, we entered final phase of the process.

In Phase 4, we reached out to PEO's stakeholders, Ontario's engineering students, and licensees with surveys tailored to each group. More specifically, we attended ESSCO's PEO-SC Conference in October to engage with students, facilitating direct engagement and feedback. This approach enabled us to not only garner their support but also gather meaningful insights to shape the future of the profession.

For stakeholders currently leading the profession, we sought their perspectives on the direction of the vision statements—how these statements aligned with the profession's present needs and challenges, and what adjustments might be necessary to meet long-term goals. For students, as future leaders of the profession, we invited their views on how they see the profession evolving and how these vision statements resonated with their aspirations. We were particularly interested in their ideas for refining or enhancing the statements to ensure they are forward-thinking, inclusive, and relevant to the next generation of engineers.

Through this process, we received survey responses from 20 stakeholders, 70 students, and 2,559 licensees. These insights were instrumental in refining the following four vision statements.

Final Vision Statements

Statement 1

Trusted engineers
Protecting the public
Forging innovation
Towards a sustainable future.

Interpretative Component

Trusted

- Being entrusted by the public to do what's right; to act ethically in the best interests of the public.
- Seen as ethical and transparent, fostering confidence in actions and intentions.
- Perceived as a subject matter expert of the profession with a proven track record of competence.
- Recognized widely for their positive impact and leadership within the profession.
- Ensures rigorous education, ongoing competency assessments, and standard setting practices to foster continual trust of the public in an evolving technological landscape.

Protecting the public

- Ensuring that public interests are paramount.
- Upholding ethical standards and practices that prevent harm and promote the welfare of the community.
- Enabling culture that is capable of judging and whistleblowing what is not.

Forging innovation

- Creating an environment where engineers are inspired and equipped to lead transformative change in their fields.
- Addressing global issues like climate change, infrastructure resilience, and technological advancement, ensuring their work serves the public good.
- An adaptive and forward-looking engineering profession that continuously evolves in an increasingly complex and dynamic world.

Sustainable future

- Focusing on practices and technologies that minimize environmental impact and support long-term ecological health.
- Ensuring equitable social systems that foster well-being, diversity, and inclusion for current and future generations.
- Developing technologies that are durable, maintainable, and designed with long-term viability in mind.
- Engineering practices move forward while considering innovative approaches. The use of technology in an environmentally and socially responsible manner.

Statement 2

Trusted technical leaders protecting the public and embracing change towards a sustainable future.

Interpretative Component

Trusted

- Being entrusted by the public to do what's right; to act ethically in the best interests of the public.
- Seen as ethical and transparent, fostering confidence in actions and intentions.
- Perceived as a subject matter expert of the profession with a proven track record of competence.
- Recognized widely for their positive impact and leadership within the profession.
- Ensures rigorous education, ongoing competency assessments, and standard setting practices to foster continual trust of the public in an evolving technological landscape.

Technical leaders

- Leaders who possess deep knowledge in specific technical fields.
- Individuals who drive technological advancement and innovation within the profession.
- Subject matter experts that shape the discourse and direction of technology within the profession.

Protecting the public

- Ensuring that public interests are paramount.
- Upholding ethical standards and practices that prevent harm and promote the welfare of the community.
- Enabling culture that is capable of judging and whistleblowing what is not.

Embracing change

- Being open and responsive to new trends, technologies, and practices.
- Actively seeking and implementing new solutions and improvements.
- Fostering an organizational or societal mindset that is positive towards change and evolution.
- Strengthening the ability to manage and thrive through changes and disruptions.
- Exploring opportunities and innovations that strengthen the profession and bring societal benefits.

Sustainable future

- Focusing on practices and technologies that minimize environmental impact and support long-term ecological health.
- Ensuring equitable social systems that foster well-being, diversity, and inclusion for current and future generations.
- Developing technologies that are durable, maintainable, and designed with long-term viability in mind.
- Engineering practices move forward while considering innovative approaches. The use of technology in an environmentally and socially responsible manner.

Statement 3

Self-regulated trustees of the engineering profession protecting and enhancing public safety.

Interpretative Component

Self-regulated

- The ability to maintain self-governance of the profession; to govern itself without external interference, maintaining independence in its regulatory practices.
- Holding members accountable for their actions through internal mechanisms, ensuring compliance with established rules and ethical guidelines.
- Encouraging ongoing development and adherence to best practices within the profession, driven by internal review and feedback processes.
- Ensure public trust is maintained through professional standards; the ability to maintain autonomy to address evolving challenges.

Trustees

- Individuals or bodies entrusted with the responsibility of overseeing and safeguarding the interests and integrity of the profession.
- Upholding a commitment to act in the best interest of the profession and public, with a duty to maintain ethical standards and accountability.

Enhancing

- Implementing and evolving new technologies, methodologies, or safety protocols that improve safety outcomes in engineering applications.
- Increasing public knowledge and awareness of safety issues and the role of engineering in mitigating them.

Public Safety

- Proactively identifying and addressing potential safety issues before they become significant threats.
- Adhering to safety regulations, codes, and best practices to ensure the safety and well-being of the community.
- Making decisions that prioritize the health, safety, and welfare of the public above other considerations or personal gain.

Statement 4

A prosperous, safe and sustainable future by diverse practitioners anticipating change (and disruption) with innovative responsibility.

Interpretative Component

Prosperous

- Proper direction and actions are being taken to ensure the satisfaction of the public.
- Prosperity affects the process of licensing policies as it ensures alignment with the impact of engineering.
- Considers and incorporates Indigenous school of thought, such as Seven Generations.
- Understand that there must be a balance between what is aspirational and what is measurable to track movement.
- Ensures that equity, equality, and inclusivity are considered.
- A profession that anticipates disruptions and embraces change.
- Safety of the impact to the public is a fiduciary obligation and built into the work of professional engineers.

Sustainable future

- Focusing on practices and technologies that minimize environmental impact and support long-term ecological health.
- Ensuring equitable social systems that foster well-being, diversity, and inclusion for current and future generations.
- Developing technologies that are durable, maintainable, and designed with long-term viability in mind.
- Engineering practices move forward while considering innovative approaches. The use of technology in an environmentally and socially responsible manner.

Anticipating change

- Embodies a proactive and forward-looking approach as opposed to a reactive approach.
- Predict and prepare for future trends and potential disruptions.
- Establishing foresight enables individuals and organizations to seize opportunities and mitigate risks effectively.
- Develop innovations that will strengthen engineering as a profession and bring multiple benefits to the community.

Innovative Responsibility

- Prioritizing advancements that are not only cutting-edge but also environmentally and socially sustainable.
- Ensuring that innovation does not compromise ethical considerations or the long-term interests of the public and their safety.
- Maintaining ethical obligations in protecting the public interest while embracing disruptive and groundbreaking ideas.

File Number: 2024-11-13_F-1

Councillor Submissions Form

This cover sheet must be completed in addition to any supporting information provided.

Date: ___November 13, 2024_____

Councillor Name: ____Roydon Fraser_____

Category of Business:

Regulatory XXX__ (**Licensing standards/competency, Fairness**)
Strategic X__ (**e.g., Emerging disciplines, relevance of P.Eng.)**
Governance __ None of the Above __
Profession Advocacy X__ (**Value-added for universities and engineering students**)

Where do you think this item should be directed?

Audit and Finance Committee __
Governance and Nominating Committee __
Human Resources and Compensation Committee __
Regulatory Policy and Legislation Committee _X (Can follow up on impacts)_
Council _XXX_

If an item is for Council, which Special Rule category applies?

_XXXX__ Special Rule 8.4(b) - Exceptional Item

'Exceptional item' is defined in the Special Rules as an item for which there is a compelling rationale as to why it cannot be brought to a governance committee first.

Must be submitted at least two weeks in advance of the meeting.

If this is an exceptional item, please explain why:

__**Engineers Canada will be receiving, accepting, or approving the Futures of Engineering Accreditation (FEA) Final Report at their December 5, 2024 meeting. It is critical for PEO to provide its input to this final report and next steps, and provide guidance and possible direction to PEO's Engineering Canada Board members for this December 5, 2024 Engineers Canada agenda item. Furthermore, the FEA Final Report recommendations have high probability of resulting in harm to PEO and the public interest.**___

__ Special Rule 8.4(c) - Emergency Item

"Emergency" is defined in the Special Rules as an event or sequence of events which:

i) Was unexpected,
ii) Will result in harm to the organization or to the public if not acted on, or will get worse, ***and***
iii) Cannot wait to be addressed at a subsequent meeting of Council.

Please note that the definition of "emergency" in the Special Rules requires all three elements to be present. May be submitted during the week prior to the meeting.

If this is an emergency item, please explain why:

_____
_____

Please submit the completed form via email to **Secretariat@peo.on.ca**

Decision – Minimum Academic Requirement

Agenda Item Number	C-566-9.1
Purpose	To ensure the Future of Engineering Accreditation process meets the fundamental need of PEO and other engineering regulators of meeting the academic standard required for licensure. It is an exceptional item Councillor motion due to need for a Council decision before Engineers Canada Board meeting of December 5, 2024.
Strategic/Regulatory Focus	*Regulatory*: There is nothing more fundamental to PEO's purpose than the standard it sets for licensure. *Strategic*: Accreditation needs to be of value to PEO, universities, and students as this is one very important determinant of P.Eng. relevancy. *Profession Advocacy*: Accreditation is of high value to two important engineering profession stakeholders: universities and students.
Motion	(majority vote required to pass) That PEO request that the Future of Engineering Accreditation next steps includes an explicit commitment to the licensure academic standard of a "minimum academic depth and breadth requirement for individuals."
Attachments	*Appendix A1* - Path Forward Report: Futures of Engineering Accreditation – October 2024 *Appendix A2* - Academic Requirement Document: Futures of Engineering Accreditation - March 2024 *Appendix B* - The Path Forward: Futures of Engineering Accreditation (FEA) Recommendations - Powerpoint Presentation - from ShareBack sessions - Fall 2024 *Appendix C* - Further Comments and Questions about the Futures of Engineering Accreditation (FEA) Recommendations - 2024 *Appendix D* - Equivalent Engineering Educational Qualifications Motion - 511th Council Mtg - March 2017 *Appendix E* - Interpretive Statement on Equivalent Engineering Education Qualifications - 511th Council Mtg - March 2017 *Appendix F* - Deposition of all motions concerning Depth and Breadth - 511th Council Mtg - March 24_2017 *Appendix G* - Regulators Guideline on the Academic Assessment of Non-Canadian Engineering Accreditation Board Applicants - 2018 *Appendix H* - Regulators Guideline on the Use of Examination Syllabi - October 2019 *Appendix I* - CEAB Accreditation Criteria and Procedures - Engineers Canada - 2023

Summary

Bottom Line:

(1) The Future of Engineering Accreditation (FEA) final report and recommendations omit an explicit commitment to a "minimum academic depth and breadth requirement for individuals" which is fundamentally the only requirement PEO and other engineering regulators require from CEAB for its graduates to be exempt from exams.

(2) The Future of Engineering Accreditation final recommendations removes the "minimum academic depth and breath requirement for individuals" in its recommendation to "retire the minimum academic path concept", however, this introduces the high probability of high risks for PEO/regulators, universities, and students.
    a. For PEO there is a high risk that the primary academic requirement specified in the Regulations [Sec 33(1)1(i)] of "a bachelor's degree in a Canadian engineering program that is accredited to the Council's satisfaction" will no longer be acceptable, and high risk that PEO will require all CEAB graduates to write exams just as non-CEAB applicants do.
    b. For universities there is a high risk that their accreditation workload will dramatically increase which conflicts with the universities desire for a less onerous accreditation process, one of the motivators for initiating the FEA process.
    c. For engineering students in Canada there is a high risk CEAB will lose its value of exempting them from exams.
    d.

Motion Purpose:

(1) Motion: To make it explicitly clear to the FEA future work process of the need to explicitly include a "minimum academic depth and breadth requirement for individuals" in order for CEAB to maintain its high value to PEO and other engineering regulators.

Time Sensitivity:

Engineers Canada Board will be presented the FEA Final Report at their December 5, 2024, board meeting. If PEO is to be pro-active in addressing high risks within its control it needs to consider this motion.

Public Interest Rationale

The academic standard for licensure is one of the four fundamental requirements for licensure specified in the Professional Engineers Act and Regulations [see Reg 46(1)]. The other three fundamental requirements are an experience standard, good character, and professional practice/ ethics. It is therefore a fundamental duty of Council to ensure the academic standard for licensure protects the public.

Background

The FEA process to date has been extensive, consultive, and holds value to continue. The purpose of the motion is to ensure the FEA process as it moves forward meets the fundamental need of PEO and other engineering regulators of meeting the academic standard required for licensure, and to pro-actively address high risks. It is not the purpose of the motion to dig into the details of the Full Spectrum Competency Profile (FSCP) or the National Academic Requirement for Licensure (NARL) as recommended. For example, it is not the purpose of the motion to question why ethics and design are currently not on the list of possible NARL competencies. The focus is on the long-standing fundamental guiding principle that the academic standard for licensure is a "minimum academic depth and breadth requirement for individuals", and on highly possible high-risk scenarios the FEA process could lead to given process details have been assigned to future work.

Ten Appendices have been attached to this motion. These are extensive documents background documents support the following:

(1) That the long-standing academic standard for licensure at PEO and in Canada is a "minimum academic depth and breadth requirement for individuals". (supported by *All Appendices*)
(2) That the FEA Final Report (*Appendix A1*) or associated reports or presentations (*Appendix A2 and Appendix B*) do not explicitly commit to a "minimum academic depth and breadth requirement for individuals", in fact they do not even explicitly commit to a "minimum academic requirement." For example, there closest statement to explicitly identifying to a minimum academic standard is the statement that "… NARL can support fundamental principles .... assessment process must be individualized …. breadth and depth, so long as a minimum threshold is met," (*Appendix A1, Appendix A2*), but clearly the word "can" is not a commitment. Furthermore, there is plenty in these same documents committing to competencies and outcomes but with it being strongly implied these are program wide, not guaranteed for individuals, metrics.
(3) That the current CEAB accreditation process *(Appendix I*) satisfies meets the "minimum academic depth and breadth requirement for individuals" through the minimum path concept for individuals that includes the academic units (AUs) measurement of breadth, and review of course material and exams, assignments, etc. achievement for depth. It does not appear that the FEA recommendation to "retire the minimum path concept" recognizes that the AU minimum path "concept" is not just about AUs, but also its necessary coupling to the depth measurement provided by course material and grading standards. If Recommendation 6 (*Appendix A1, Appendix B*) was solely about retiring the AUs this would raise high risk questions, but retiring the concept greatly increases the potential risks.
(4) That despite PEO's new FARPACTA compliant admissions process changing the academic admissions process significantly, PEO's new FARPACTA compliant admissions process it still retains the fundamental guiding principle of a "minimum academic depth and breadth requirement for individuals". Breadth is currently measured by having a B.Eng., and depth measured by exams, for each individual non-CEAB applicant.
(5) That the FEA process response for more than a year to all the questions and concerns that involve consideration of accreditation details (examples in *Appendix C*) have never been answered or addressed but have all been delegated to future work thus keeping all potential risks high.

Note 1: Motion still keeps the options wide in regard to how the "minimum academic depth and breath requirement for individuals" is actually to be implemented, however, quantification is still expected just as there is quantification in Annex 1 of the Engineers Canada Regulators Guideline on the Use of Examination Syllabi (Appendix H.

Note 2: Competency-based or outcome-based assessments (which are technically different, a difference that is not clear in the FEA Final Report) are completely compatible with the guiding principles of depth and breadth. In fact, in a competency-based assessment approach one must in general first complete one competency before proceeding to the next which is often at a higher level of competency, or higher depth. And when there are multiple competencies this represents breadth.

Considerations

High Risks: High potential of high risks (i) to PEO's licensure academic standard, (ii) to universities willingness to engage accreditation, and/or (iii) to the value of accreditation for students. Detailed examples of some of these high risks are given in Appendix C.

Costs: Financial costs to PEO could be high, particularly if the high risk that CEAB accreditation will no longer meet the standard of a "minimum academic depth and breadth requirement for individuals" materializes and all CEAB applicants have to be processes similar to non-CEAB applicants.

Strategic Issue: Accreditation needs to be of value to PEO, universities, and students as this is one very important metric of P.Eng. relevancy.

Professional Advocacy: If not done right the value and relevancy of the P.Eng. will be diminished among two important engineering profession stakeholders: universities and students.

Stakeholder Engagement

The many concerns and questions (exampled in Appendix C) have been raised and unanswered. Instead, these concerns and questions have been left for future work. The engagement avenues through which these concerns an questions were raised by PEO and PEO members raised were many over the past two plus years and include, but were not limited to, the following: (i) FEA Workshop at PEO, (ii) PEO Plenary, (iii) PEO representatives on an FEA committee, (iv) ARC input, (v) Concerns and Questions sent directly to Engineers Canada for input to the FEA process, (vi) FEA ShareBack sessions, and (vii) PEO participation in Engineers Canada Board FEA Workshop.

Options

	Option	Risks	Costs	Advantages/Disadvantages
1	Do nothing	Risks to PEO and/or the important stakeholders of universities and students will remain high as exampled in Appendix C and partially discussed above.	No immediate costs. Potential high future costs.	*Advantage*: None other than avoiding possible upsetting a few people. *Disadvantage*: High risks remain with no progress to reducing risks.
2	Pass Motion	May upset some who have been working on the Future of Engineering Accreditation process to have the recommendations questioned.	No immediate costs. Reduced risk of high future costs.	*Advantage*: Lowers probability of many future operational, reputational, and P.Eng. relevance risks. *Disadvantage*: May upset some who are invested in the FEA process and recommendations.

Recommendation(s)

N/A as this is a "Decision" motion.

Next Steps

If the Motion passes communicate to Engineers Canada and the FEA process.

Prepared By: Roydon Fraser

APPENDIX COVERS

APPENDIX A1:
Path Forward Report: Futures of Engineering Accreditation - October 2024

APPENDIX A2:
Academic Requirement Document: Futures of Engineering Accreditation – March 2024

APPENDIX B:
The Path Forward: Futures of Engineering Accreditation (FEA) Recommendations - Powerpoint Presentation - from ShareBack sessions - Fall 2024

APPENDIX C:
Further Comments and Questions about the Futures of Engineering Accreditation (FEA) Recommendations - 2024

APPENDIX D:
Equivalent Engineering Educational Qualifications Motion - 511th Council Mtg - March 2017

Notes:

1. SOME HISTORY:
   At the 511th Council Meeting there were a large number of motions associated with the agenda item, "LICENSING COMMITTEE - RESCINDING AND REPLACING COUNCIL RESOLUTIONS REGARDING LICENSING PROCESS TASK FORCE (LPTF) RECOMMENDATIONS THAT REQUIRED REGULATION CHANGES". Prior to this meeting it was believed that PEO's admissions process needed to be described in detail in the Regulations. However, it was then discovered this was not the case so there was a return to just the basic requirements in the Regulations and guiding

principles to be followed by operations. Central to these guiding principles was the necessity to measure both depth and breadth of all applicants which is reflected both by the detailed processes proposed to go into regulation by LPTF but rescinded at the 511th meeting, and by the replacement document Equivalent Engineering Educational Qualifications that defines the guiding principles of academic depth and breadth.

2. MODERN HISTORY - FARPACTA:
It is valuable to note that although the changes to PEO's academic admissions processes are notably different under FARPACTA, the FARPACTA processes still preserve the *minimum academic depth and breadth requirement for individual applicants*! Today, *individual breadth* is confirmed by the B.Eng. Degree rather than a syllabi, while *individual depth* is still confirmed with exams.

It is also valuable to note that it is very fortunate that PEO did not detail its admissions processes in Regulation as the LPTF originally recommended (note the LPTF also recommended the rescinding and replacement at the 511th Council Mtg.), otherwise adapting to FARPACTA would have been much more difficult.

3. Mentions of the principles of academic depth and breadth have been highlighted in this appendix.

APPENDIX E:
Interpretive Statement on Equivalent Engineering Education Qualifications - 511th Council Mtg - March 2017

Notes:
1. This is the current Council approved definitions of academic depth and breadth. They are consistent with how these terms are used as guiding principles in the Canadian Engineering Qualifications Board's guidelines to assessing non-CEAB applicants (See Appendix D and Appendix E)

APPENDIX F:
Deposition of all motions concerning Depth and Breadth - 511th Council Mtg - March 24_2017

Notes:
1. MAJOR OBSERVATION:
In both the details that in the rescinded LPTF motions and in the replacement motion, the guiding principles of *academic depth and breath permeates throughout PEO's minimum*

academic requirement for licensure.

2. SOME HISTORY:
At the 511th Council Meeting there were a large number of motions associated with the agenda item, "LICENSING COMMITTEE - RESCINDING AND REPLACING COUNCIL RESOLUTIONS REGARDING LICENSING PROCESS TASK FORCE (LPTF) RECOMMENDATIONS THAT REQUIRED REGULATION CHANGES". Prior to this meeting it was believed that PEO's admissions process needed to be described in detail in the Regulations. However, it was then discovered this was not the case so there was a return to just the basic requirements in the Regulations and guiding principles to be followed by operations. Central to these guiding principles was the necessity to measure both depth and breadth of all applicants which is reflected both by the detailed processes proposed to go into regulation by LPTF but rescinded at the 511th meeting, and by the replacement document Equivalent Engineering Educational Qualifications that defines the guiding principles of academic depth and breadth.

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3. Mentions of the principles of academic depth and breadth have been highlighted in this appendix.

APPENDIX G:
Regulators Guideline on the Academic Assessment of Non-Canadian Engineering Accreditation Board Applicants - 2018

APPENDIX H:
Regulators Guideline on the Use of Examination Syllabi - October 2019

APPENDIX I:
CEAB Accreditation Criteria and Procedures - Engineers Canada - 2023

C-566-9.1
Appendix A1

Path Forward Report

Futures of Engineering Accreditation

August 2024
(updated October 2024)

Prepared for: Engineers Canada
Prepared by: Futures of Engineering Accreditation Steering Committee
In partnership with: Coeuraj

Introduction letter

The Futures of Engineering Accreditation (FEA) Path Forward Report contains the 18 recommendations of the FEA project. The recommendations account for the needs of diverse interest holder groups, all of whom share an interest in a Canadian accreditation system that preserves what makes it exceptional while embracing new opportunities and addressing evolving realities within the Canadian engineering ecosystem.

The FEA Path Forward Report presents a case for change gathered from research and engagement with interest holders and proposes shifts to the accreditation system aimed at addressing the opportunities that were identified throughout these engagements. Readers of this Report will note that some recommendations propose changes to the engineering accreditation system itself, while others describe approaches to support lasting change or to institute baseline evolutions to enable success. By striking this balance, the FEA project aims to establish a way forward that is focused above all on achieving the right outcomes.

The Report's publication is the final deliverable in the Engineers Canada strategic priority 1.1 'Investigate and Validate the Purpose and Scope of Accreditation' and provides a template of possibilities for the move into the next Strategic Plan. Should the Engineers Canada Board decide to proceed by accepting all or some of the recommendations, work remains to develop the details of the proposals and determine how they could be implemented. This work would be carried out through further collaboration with interest holders.

Engineers Canada and the FEA Project Team, including the FEA Project Steering Committee, would like to thank all the people from across the Canadian engineering ecosystem who have contributed to this Report.

Sincerely,
The FEA Project Steering Committee

engineerscanada
ingénieurscanada

Table of Contents

Abbreviations and Acronyms

AinA	Accountability in Accreditation
APEC-EA	Asia-Pacific Economic Cooperation – Engineer Agreement
APEGA	The Association of Professional Engineers and Geoscientists of Alberta
AU	Accreditation Unit
CBA	Competency-based assessment
CEAB	Canadian Engineering Accreditation Board
CEQB	Canadian Engineering Qualifications Board
CPD	Continuing professional development
EDC	Engineering Deans Canada
EIT	Engineer-in-training
FEA	Futures of Engineering Accreditation
FSCP	Full Spectrum Competency Profile
GA	Graduate Attributes
HEI	Higher education institution
IEA	International Engineering Alliance
IPEA	International Professional Engineers Agreement
JTA	Job task analysis
MEL	Measurement, evaluation, and learning
NARL	National Academic Requirement for Licensure

Executive summary

The Futures of Engineering Accreditation (FEA) project is an initiative by Engineers Canada, and part of its 2022-2024 Strategic Plan. The objective of the FEA project is to leverage the insights, perspectives, and expertise of members of the Canadian engineering ecosystem to examine the current accreditation system, understand how it is serving contemporary needs, and consider how it can chart a new path for the future of the engineering profession in Canada.

A pivotal milestone in the FEA project, this Path Forward Report describes the work undertaken since 2021 to investigate and validate the purpose and scope of accreditation. Drawing on the research conducted by the Engineering Education and Benchmarking Task Forces, engagement with interest holders, insights from the Purpose Task Force and the Academic Requirement Task Force, and the Steering Committee's expertise, this Report presents recommendations to the Engineers Canada Board to guide the evolution of the accreditation system. It recommends actionable plans for closing the gaps between the current system and the envisioned future state.

This Path Forward Report is a strategic blueprint for the future of engineering accreditation. It proposes a revised purpose of accreditation and scope statement with associated parameters for a revitalized accreditation system, anchored in a recommendation to transition to a fully outcomes-focused model. The Report also recommends the development of a Full Spectrum Competency Profile (FSCP) to serve as a national framework for assessing all licensure applicants, a subset of which forms a National Academic Requirement for Licensure (NARL). The Report marks the beginning of a transformative journey, the ultimate effects of which remain to be determined. A clear vision has emerged through the years of the FEA project work, although many of the specific implementation details remain to be defined.

The Path Forward Report is broken down as follows:

- The first section includes a list of consolidated recommendations.
- About the FEA project introduces the project, including its objectives, development phases, and key milestones. It also details the collaborative (co-design) approach that has served as the guiding framework for this project. It unpacks five core principles behind this approach, including the concept that people love what they design and own what they create.
- What the future of engineering could look like envisions the potential future landscapes for the profession to prompt reflection on how the engineering ecosystem should evolve.
- Strengths of the current accreditation system explores how these can be leveraged and built upon to inform future system enhancements.
- Purpose of accreditation reflects the work of the Purpose Task Force. It covers the pressing challenges necessitating a system change and outlines the revised purpose and scope statements, as below:

  The purpose of accreditation

  > *Accreditation provides assurance that an engineering program is designed and delivered such that its graduates meet the academic requirements to be licensed as professional engineers in Canada.*

  The scope of accreditation

  > *The accreditation review process includes evaluation of the curriculum as well as those factors which enable the design and delivery of the program, including human and financial resources, the learning environment and facilities, and quality control mechanisms.*

  This section also emphasizes more balance among the three focuses of accreditation: engineering programs, students, and regulators. It proposes design parameters for the future accreditation system, integrates insights from project engagement and research to support the system changes, and provides recommendations for building the envisioned future accreditation system.
- The next section builds on the Academic Requirement Task Force's work to define the Full Spectrum Competency Profile (FSCP) and its potential to promote equitable access to the engineering profession. As a competency framework, the FSCP outlines the essential knowledge, skills, and attributes required for successful engineering practice throughout an engineer's career. Encompassing 34 competencies across eight domains, it spans the entirety of an engineer's career journey, from undergraduate studies through post-graduate experience to post-licensure. To illustrate the progressive nature of competency acquisition, the section also references Miller's Pyramid of Clinical Competence, which maps the learning journey from foundational knowledge ("knows") to expert-level application ("does").

- The National Academic Requirement for Licensure (NARL) focuses on a subset of competencies from the FSCP that engineering graduates should possess at the "knows-how" level of Miller's Pyramid upon program completion. The section includes insights from project engagement research supporting the FSCP, and outlines strategies for refining the FSCP to meet the needs of the accreditation and licensing systems.
- Developing a competency framework outlines how to advance the FSCP using a Job-Task Analysis (JTA) approach.
- The FSCP Pilot Study and its associated Terms of Reference describe a pilot study that will select a subset of the FSCP competencies, develop assessment processes, and make recommendations for future implementations of the FSCP and NARL. To ensure a well-rounded perspective, a diverse working group will be established.
- The implementation approach. This multifaceted section covers essential components to propel the project forward, including:
    - Change management: Strategies to effectively navigate the complexities of such a large-scale transformation.
    - Governance: Principles for evolving towards a more inclusive and accountable model.
    - Core values: To guide implementation of the recommendations in this Path Forward Report.
    - Short-term actions: For early 2025.
    - Long-term actions: For later in 2025 and beyond.

Consolidated recommendations

The complete recommendations appear below. Page references in square brackets indicate where the recommendations can be found in the report.

ACCREDITATION SYSTEM STRENGTHS

1. Identify and strategically integrate the system's current strengths into the future framework. [page 18]

PURPOSE AND SCOPE OF ACCREDITATION

2. Endorse the revised purpose and scope of accreditation statements. [page 23]

DESIGN PARAMETERS FOR THE FUTURE ACCREDITATION SYSTEM

3. Adopt the outlined design parameters as a fundamental framework for the future accreditation system. [page 27]

OUTCOMES

4. Mandate a shift to an outcomes-focused accreditation as a cornerstone for future system change. [page 29]
5. Remove criteria related to the measurement of curriculum content with Accreditation Units (AUs). Focus on Graduate Attributes until a transition to the Full Spectrum Competency Profile can be completed. [page 29]

MINIMUM PATH

6. Retire the concept of the "minimum path". [page 30]

FACULTY LICENSURE

7. Accept some of the recommendations presented by the Canadian Engineering Accreditation Board (CEAB) to address faculty license requirements, including:
    a. The CEAB should endorse the principle that engineering programs must have substantial and meaningful involvement of licensed professionals in the education of future professionals.
    b. The CEAB and visiting teams should interpret existing accreditation criteria related to the role of the professional engineer in the instruction of students in a manner that allows HEIs to have more flexibility with respect to mechanisms to facilitate

substantial and meaningful involvement of licensed professionals in the engineering education process.

c. The CEAB must require Higher Education Institutions (HEIs) to demonstrate that graduates have developed the expected level of understanding of, and commitment to, professionalism.
d. The CEAB remove the Specific AUs criteria and the requirement for the significant design experience to be conducted under the professional responsibility of licensed faculty. [page 31]

8. Explore the development of alternate ways for HEIs to demonstrate that students enrolled in engineering programs have substantial and meaningful involvement with licensed professionals. [page 32]

PROGRAM EXCHANGE

9. Formalize the CEAB's Temporary Exemption for Students Going on International Exchange by permanently integrating its core principles into accreditation policy. [page 33]

EDUCATIONAL CURRICULUM AND LEARNING ENVIRONMENT

10. Evaluate the feasibility of accepting HEI evaluations from provincial quality assurance bodies to streamline CEAB processes while maintaining compliance with the Washington Accord. [page 33]

RETURN ON INVESTMENT

11. Maximize the return on investment for all interest holders by incorporating new core values into the accreditation system, including co-design, collective stewardship, and more representative governance. [page 35]

FULL SPECTRUM COMPETENCY PROFILE (FSCP) PILOT STUDY

12. Initiate a pilot study to evaluate the feasibility of the FSCP according to the proposed Terms of Reference. [page 56]

SUBSTANTIAL EQUIVALENCE

13. Ensure that the FSCP, including the National Academic Requirement for Licensure (NARL), is substantially equivalent to the International Engineering Alliance (IEA) Graduate Attributes and Professional Competencies benchmark. [page 57]

CHANGE MANAGEMENT

14. Establish a dedicated task force to develop a change management plan for the strategic implementation of outcomes-focused accreditation. This plan should encompass the sequence of tactical steps to move from the current state to the desired state and address the potential emotional and psychological experience of change. [page 60]

GOVERNANCE

15. The Engineers Canada Board should establish two distinct bodies in accreditation: a policy body responsible for setting strategic direction, and an operational body focused on execution of policies. [page 61]
16. Establish a new dedicated oversight body for the FSCP. [page 61]

INDUSTRY ENGAGEMENT

17. Establish regular engagement opportunities with industry, leveraging existing mechanisms to gather ongoing feedback and insights. [page 63]

CORE VALUES

18. Adopt the outlined core values to guide implementation of these recommendations. [page 66]

1. About the Futures of Engineering Accreditation

The Futures of Engineering Accreditation (FEA) project is an initiative by Engineers Canada and is part of its 2022-2024 Strategic Plan, specifically to investigate and validate the purpose and scope of accreditation (Strategic Priority 1.1).

The objective of the FEA project is to leverage the insights, perspectives, and expertise of members of the Canadian engineering ecosystem to examine the current accreditation system, understand how it is serving contemporary needs, and consider how it can chart a new path for the future of the engineering profession in Canada.

The strategic priority aimed to bring together the diverse perspectives of the Canadian engineering ecosystem to create an accreditation system that moves everyone forward together. Expected project outcomes included:

1. All interest holders understand the **purpose of accreditation.**
2. Regulators have an **academic requirement for licensure**, applicable to all.
3. Engineers Canada, including the Canadian Engineering Accreditation Board (CEAB) and Canadian Engineering Qualifications Board (CEQB), have **direction to implement systems** aligned with the purpose and the academic requirement for licensure.

This project was undertaken in partnership with Coeuraj, a design and facilitation consultancy. The "project team" included Engineers Canada staff and Coeuraj personnel.

The FEA Steering Committee presents this Path Forward Report to capture the key learning from the project and offer recommendations to the Engineers Canada Board to shape the evolution of the accreditation system in 2025 and beyond.

Project participants

The FEA project engaged a dynamic group of volunteers from across Canada with a range of expertise. Both organized groups and individual contributors from the engineering ecosystem provided invaluable knowledge to inform and guide the project.

Organized groups included:

- Academic Requirement for Licensure Task Force
- Benchmarking Accreditation Task Force
- Engineering Education Task Force
- Purpose of Accreditation Task Force
- Regulator Advisory Group
- FEA Steering Committee

In addition to the organized groups, more than 700 interest holders participated in FEA activities through more than 35 engagements across Canada.[1] Each contributor brought a unique perspective to the project and strengthened the research and insights about the accreditation system.

Project journey

FEA was a multi-year project with different phases. Key activities included:

- Benchmarking the Canadian accreditation system and investigating a minimum academic requirement for licensure.
- Conducting a fundamental review of the current accreditation system and re-examining its purpose in the context of the overall licensure system.
- Gathering the different perspectives of the Canadian engineering ecosystem to shape future evolutions of accreditation to best meet society's needs.
- Delivering this Path Forward Report, which provides direction to Engineers Canada, including the CEAB and the CEQB, on implementing systems aligned with the purpose of accreditation and the academic requirement for licensure. This Report explains the future direction and presents recommendations to close the gaps between the current and envisioned future state.

Figure 1 is the FEA journey which graphically represents the project's progress since 2022. A version of this journey map expanding on the major activities, learnings, and decisions is in Appendix A**.**

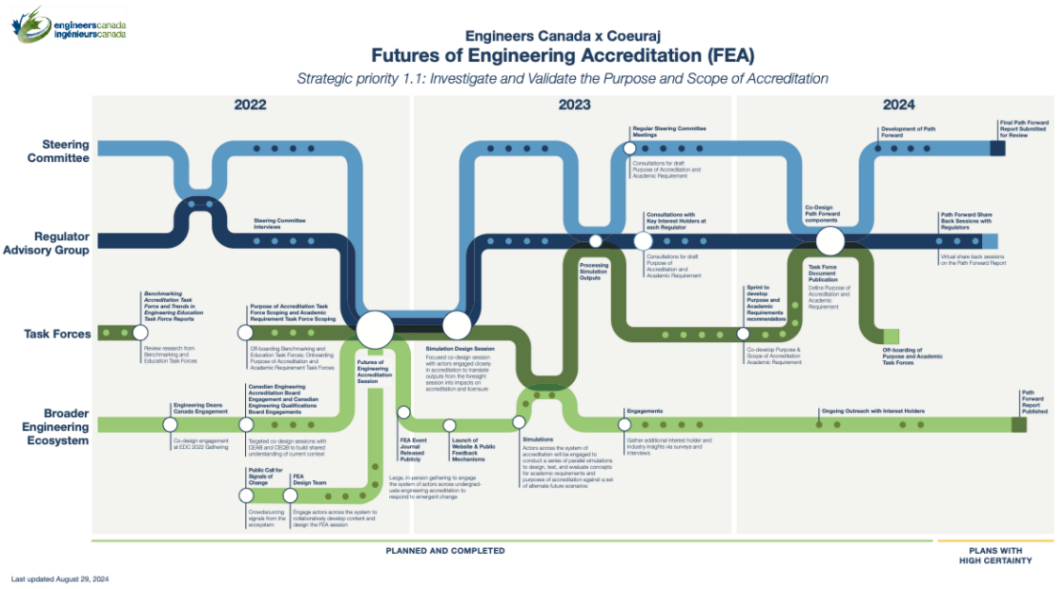

Figure 1: The FEA journey map representing project progress since 2022.

[1] The participation of more than 700 participants does not represent a unique count of individuals, as participants at one event may have participated in others.

The main phases of the project were as follows:

PHASE 1 – RESEARCH

In May 2021, Engineers Canada's members (the engineering regulators) approved a new strategic priority to investigate and validate the purpose and scope of accreditation. To begin this work, members of the engineering ecosystem gathered perspectives on the current context in which the accreditation system functions. The Benchmarking Accreditation Task Force was created to conduct research to compare the Canadian engineering accreditation system with national and international comparators. The Engineering Education Task Force was created to understand current and emerging trends in engineering education. In a workshop with educators and regulators, the current realities of engineering education were explored with those who experience them daily. The two task forces compiled their findings in their respective reports, Benchmarking the Canadian Engineering Accreditation System and Current and Emerging Practices in Engineering Education. The reports were published in March 2022 and subsequently discussed with regulators to set the context for all future work. This upfront work served as the foundation for the project pathway.

PHASE 2 – UNDERSTANDING THE EXISTING SYSTEM

Members of the Canadian engineering ecosystem were engaged to share their unique perspectives, including their experiences and expertise in the overall licensure process and accreditation system.

In May 2022, the project team facilitated a collaborative session with Engineering Deans Canada (EDC) to map out responses to four key questions pertaining to the purpose and scope of accreditation. In September 2022, the project team convened separate meetings with the CEAB and CEQB and collected their perspectives on the purpose and structure of the accreditation system.

In November 2022, the project team hosted more than 70 individuals from the engineering community at a two-day strategic foresight session to imagine "the engineer of the future" and the prerequisites for their success. One of the central messages emerging from the event, as documented in the Foresight Session Event Journal, is that "participants saw a need for engineers who are values-based leaders, who are technically excellent and actively collaborate across disciplines, are mindful of the future, and maintain curiosity and a desire for lifelong learning."

PHASE 3 – INTRODUCING NEW VOICES

Over six weeks during Spring 2023, the FEA project team led a series of virtual simulations, a structured form of brainstorming and exercises which invited 80 participants from the engineering community to explore the accreditation and licensure systems. The simulation experience was designed to bring together a variety of perspectives for envisioning who the engineer of the future is and what they need, and to understand how the systems might react to different purposes of

accreditation and to potential national academic requirements for licensure. The virtual simulations unlocked key learnings about the collective work needed to evolve the engineering accreditation system. The data synthesized from the simulations indicated that:

- Participants are aligned in thinking that accreditation should have a role in the engineering ecosystem to ensure quality control and professional integrity, but it needs significant change to be fit for purpose.
- There is value in having clearly defined, transparent standards for engineering knowledge and competence at a national level. The data also suggests that this requirement should address a general, baseline level of technical knowledge complemented with professional competencies and an understanding of the ethical responsibilities of an engineer.
- The relationship between accreditation and the academic requirement for licensure is not yet clear and requires further work.

The Purpose Task Force and the Academic Requirement Task Force used the data from the virtual simulations to build viable options for the future. In Fall 2023, the project team conducted 13 in-person consultations with regulators, the EDC, the CEAB, and the CEQB to discuss draft concepts for a renewed purpose of accreditation and a national academic requirement for licensure.

Also in late 2023, the project team conducted four interviews with leadership from Canadian accreditation and/or regulatory bodies for the professions of nursing, accounting, and architecture. The findings underscored the shared challenges and approaches among these professions in accrediting programs for interest holders with different needs and objectives, evaluating foreign-trained practitioners, and offering diverse pathways into the profession.

During the same timeframe, the FEA project team launched a survey aimed at actively engaging specific interest holders, including current and former students of CEAB-accredited programs, international engineering graduates, applicants for engineering licensure, and individuals with or without an engineering license working in engineering. Participants were asked to share their insights and experiences related to accreditation, competencies, and the process of obtaining an engineering license in Canada. The survey responses contributed to the ongoing work and validation around development of the purpose of accreditation and a national academic requirement for licensure.

CURRENT PHASE (PHASE 4) – NURTURING AN EMERGENT SYSTEM

Relying on data gathered in previous project phases, in early 2024 the Purpose Task Force and Academic Requirement Task Force worked to define the future purpose of accreditation and a national academic requirement for licensure and created two guiding documents. *The Purpose Task Force document* and *Academic Requirement document* produced in March 2024 served as a springboard for discussion, and the project has advanced significantly since then.

In April 2024, a two-day Path Forward Co-Design Session brought together more than 40 representatives from the CEAB, CEQB, EDC, the Regulator Advisory Group, Engineers Canada Board Directors, and other interest holders. This collaborative session explored the proposed concepts, insights, gaps, and recommendations from the Purpose and Academic Requirement

Task Forces as well as the work done to date. Participants strengthened their collective understanding of potential system changes and provided ideas and guidance to enable implementation.

The collaborative design (co-design) approach

Given how long aspects of the current system have been in place, the diverse individuals within the system, and the uneven success of previous changes to the system, a collaborative design (co-design) approach to transformation was purposely chosen as a methodology for engagement on this project.

Co-design offers a framework for people to come together, explore new ideas and possibilities, and design the solutions that reflect the diverse ways of knowing and being within the system in which they operate. Co-design is a tool that can be very useful in situations where there is a diverse set of perspectives and a requirement for alignment across a varied, and complex, system.

The co-design approach for the FEA project was based on five principles:

1. **People love what they design and own what they create.** Co-design does not rely on "buy-in", instead focusing on active collaboration to foster collective ownership that enables relationships and shared decision-making to have lasting impact.

2. **Requisite variety.** The principle of requisite variety is the notion that addressing complex challenges necessitates a diverse range of perspectives. A co-design approach seeks varied input by fostering collaboration among individuals with different experiences, worldviews, and knowledge systems. This inclusive process ensures that solutions are responsive to the system's complexity and effectively address its challenges.

3. **Design from the future state.** When looking back in time from a place of imagined success, it's easier to focus on what enabled it. When looking to the future from today, barriers tend to dominate the view. A co-design approach shifts the focus to an ideal future and then identifies the necessary steps to bridge the gap.

4. **Embrace conflicts and power differences.** Any group of people working together experience conflict, from families through to large organizations. All organizations have hierarchy, either implicitly or explicitly. Co-design creates a space for participants to embrace conflict and "be tough on the ideas, not on people". Surfacing and working through tension in the system increases trust and builds new relationships.

5. **A different kind of conversation creates different results.** A co-design process takes participants out of their daily contexts and invites them into a new dynamic of interaction. It creates conditions where participants can focus on common interests instead of differences. A scan-focus-act process invites participants to explore new ideas and possibilities without constraint, before refining options into potential solutions.

Throughout the FEA project, the co-design approach considered what the engineer of the future needs to know and do, and how to ensure today's system is moving toward supporting those engineers of the future. Consulting and listening to voices in the system, playing back what was heard, and moving new concepts forward through co-design have created new ways of working, building and re-building relationships in the engineering ecosystem.

THE NEXT PHASE – REALIZING ACCREDITATION AND ACADEMIC ASSESSMENTS IN 2025 AND BEYOND

The Path Forward Report marks a significant milestone in the FEA initiative outlined in Engineers Canada's 2022-2024 Strategic Plan. It is the culmination of more than three years of research, findings, and multiple interactions with diverse interest holders in the Canadian engineering profession and beyond. Drawing on the insights and expertise gleaned from these engagements, it serves as a strategic blueprint for implementing changes to the accreditation system, prioritizing timely and resource-efficient transformation. Leveraging the in-depth understanding of current challenges in the system, the Path Forward Report presents recommendations to chart a course towards the envisioned future state for Canadian engineering accreditation.

This is just the beginning of transformation for the accreditation system. The upcoming Engineers Canada 2025-2029 Strategic Plan includes a strategic direction "Realizing accreditation and academic assessments". Its implementation will employ a co-design approach and be guided by the FEA recommendations, including the definition of the specific steps required to transition the current accreditation system to an outcomes-focused one and exploration of the FSCP as a potential competency framework for the engineering profession.

2. What the future of engineering could look like

Envisioning potential future landscapes for the engineering profession was a critical step at the onset of the FEA project. The Foresight Session conducted in November 2022 was instrumental in developing a shared understanding of the current engineering ecosystem and encouraging critical and creative thinking to explore what the future of engineering in Canada might look like.

During the session, three unique, plausible scenarios for the future were presented. The three scenarios presented a variety of changes that could impact the environment in which engineering is taught, practiced, and regulated.

The first scenario depicted a relatively stable continuation of current trends in the engineering ecosystem, in which Canada remains increasingly urbanized, populous, and multicultural, with rapid technological advancement. The hiring landscape is primarily driven by reputation and skillset, mirroring the status quo. The second scenario presented an engineering ecosystem affected by continuous change, volatility, and instability in the broader environment, where self-regulation has been replaced by a national regulating board and the quality of engineering services has diminished. The third scenario projected a partial defunding of higher education, deregulation for many professions including engineering, and more migration towards northern Canada.

Overall, there was consensus that the engineer of the future would be operating in a complex world of constant and rapid change. The uncertainty and unpredictability of the future would create environmental, social, and political challenges that demand engineers to be:

- Ethical, inclusive, and values-based leaders
- Mindful and aware of their roles in shaping and contributing to the future of humanity
- Fostering collaboration across multidisciplinary teams
- Incurably curious, showing up with creativity and empathy
- Technically excellent and focused on their lifelong learning journeys

Drawing on insights from interest holders regarding future engineering needs, the engineering ecosystem must:

- Diversify pathways to becoming an engineer
- Foster continuous learning and technology adaptation
- Empower engineers to work seamlessly in diverse and multidisciplinary teams
- Engage in cross-disciplinary collaboration
- Instill a culture of collaboration, integrity, and ethical outcomes
- Balance innovation and risk in designs and projects
- Continue to safeguard the public and uphold safety measures

The scenarios and insights of the strategic foresight exercise are intended to help inform and clarify the design of the future engineering system to meet the demands of a rapidly changing world.

3. Strengths of the current accreditation system

Since its creation in 1965, the Canadian engineering education accreditation system has supported Canadian engineering regulators, been recognized as substantially equivalent under international mutual recognition agreements,[2] and has mentored accreditation bodies across the globe. Significant changes in engineering practice and engineering education have occurred over this same period. From technological advancements to the emergence of new and alternative educational delivery methods, the learning context for today's engineers is far different from that of the past.

The FEA project is an evolutionary step for the accreditation system, not a revolutionary overhaul. While the FEA project modernizes accreditation to meet the evolving education setting and profession, the core principles remain strong. Importantly, not everything requires change. The Canadian engineering accreditation system will continue to assess programs through external evaluation and ensure graduates of accredited programs are academically qualified to begin the process for licensure.

Building on the accreditation system's successes and progressive changes since 1965, the FEA project seeks to create a future-proof framework that aligns with evolving societal needs while maintaining the system's credibility. The transformative shift necessitates a deliberate approach.

[2] Specifically, the Washington Accord under the International Engineering Alliance.

A phased implementation can leverage the current system's strengths while seamlessly integrating essential improvements. It ensures a smooth transition that captures the best and maintain continuity of service.

> **Recommendation one for the future direction:**
> **Identify and strategically integrate the current accreditation system's strengths into the envisioned future framework.**

4. Purpose of accreditation

Mandate of the Purpose Task Force

For the accreditation system to successfully evolve, it is essential to critically examine its purpose and determine whether the rationale for accreditation remains valid in the context of emerging realities, or if it requires adaptation.

The Purpose Task Force was mandated to either validate the current purpose of accreditation or establish a revised purpose. The purpose statement is intended to be a foundational statement about why accreditation exists, what it must achieve, and for whom.

The need for change in accreditation

a. Education and pedagogy

Engineering education has changed significantly since accreditation was introduced in 1965. While there have been updates and adaptations since then, most notably with the introduction of Graduate Attributes in 2008, there are widely held perceptions that the accreditation system has not kept pace with the rapid changes in HEIs. As the Current and Emerging Trends in Engineering Education Report noted, trends affecting engineering education include advancements in pedagogical practices, available technologies for instruction (such as the internet and remote learning), ongoing impacts of the COVID-19 pandemic, experiential learning opportunities, and the emergence of new engineering disciplines, especially in niche areas.

b. Perceived rigidity in accreditation criteria

There is a perception that the current accreditation criteria impose a rigid framework which restricts program delivery, overly values outdated forms of teaching (e.g., lectures versus tutorials or laboratories over project-based learning or independent learning), limits instructors' pedagogical choices, and constrains students' ability to select courses of personal interest. This structured approach prioritizes the impartation of technical skills over the cultivation of lifelong skills such as teamwork and collaboration. Consequently, the emphasis on meeting accreditation criteria often

results in a narrow focus on technical proficiency, neglecting the holistic development of students as budding professionals who are charged with mastering their own learning following graduation. Rigid program structures, perceived to be a result of accreditation, make it more challenging to address timely societal issues such as Reconciliation, equity, diversity, and inclusion.

Compared to similar accreditation systems both within and outside of Canada, the engineering industry has less involvement in the Canadian engineering accreditation system. Yet, there is push from industry leaders and the broader engineering community to equip engineering graduates with interdisciplinary skills to keep up with changing engineering practices. These preparations are seen as essential for tackling more complex challenges of the future.

To address the evolving environments, industry demands, and societal impacts, engineering programs are striving to incorporate competencies, non-technical skills, and personalized program delivery paths. However, the current accreditation system was not originally designed to accommodate these changes and has been slower to keep pace with these needs, making it more challenging for HEIs to adjust effectively.

c. Accreditation workload

The Canadian engineering accreditation system is rigorous, and its specific requirements can lead to a demanding workload. The introduction of the Graduate Attributes (GA) criteria in 2008, which are mandatory requirements for Engineers Canada to remain part of the International Engineering Alliance's (IEA) Washington Accord, has increased the workload for the HEIs to prepare for and maintain accreditation, and for the volunteer visiting team members. Some HEIs assumed the introduction of the GA criteria would eliminate the need for input measures – currently measured in Accreditation Units (AUs) – and they continue to suggest that the input measures (AUs) should be de-emphasized or removed altogether. Currently, this results in parallel administrative processes for both input measures, quantified by AUs, and output measures like Graduate Attributes.

Statement of the purpose of accreditation

The Terms of Reference for the Purpose Task Force were to either "validate the current purpose of accreditation or establish a revised purpose".[3]

a. Validating the current purpose of accreditation

The current purpose of accreditation is to:

> *Identify to the member engineering regulators of Engineers Canada those engineering programs whose graduates are academically qualified to begin the process to be licensed as professional engineers in Canada*.[4]

[3] FEA Purpose Task Force Terms of Reference.

[4] Engineers Canada. CEAB 2023 Accreditation Criteria and Procedures, page 6.

The accreditation criteria examine the engineering curriculum (and the continual improvement thereof) as well as processes related to the admission, promotion and graduation, academic advising of students, as well as the overall environment in which the program is delivered.

For engineering regulators this means that graduates of accredited programs are not required to write confirmatory technical examinations; it is accepted that graduates of accredited programs meet the academic qualifications for licensure. This benefits graduates, reducing the time and financial impact of seeking licensure and benefits regulators by streamlining their licensure processes. Applicants seeking licensure without a degree from a CEAB-accredited program usually undergo confirmatory technical examinations.

The patterns of engineering licensure are changing in Canada. There is a declining number of graduates from CEAB-accredited programs who are applying for licensure, and an increasing number of applications from candidates who do not hold CEA-accredited degrees (non-CEAB applicants). The most recently published Membership Report from Engineers Canada estimates that only 44.3 per cent of recent graduates proceeded along the path to licensure.[5] In some Canadian jurisdictions, the number of non-CEAB applicants makes up more than 50 per cent of the applications received.

While regulators have traditionally been seen as the primary beneficiaries of the accreditation system, they now face an increasingly complex operation maintaining objective, transparent, equitable, and fair assessment procedures. Those responsible for delivering engineering programs and their students are also impacted by the accreditation system, yet they often perceive the system as prioritizing the interests of regulators above all others. From an HEI perspective, continuously investing time, energy, and resources into accreditation that ultimately serves fewer and fewer graduates is becoming an increasingly questionable "investment". The expansion of accreditation criteria over time, including areas such as learning environment, have increased workload and are perceived as more difficult to assess. Educators invest significant time, personnel, and dollars into accreditation, and they are wondering if the benefit is worth the cost.

The changing educational context in which accreditation operates, paired with the current narrow purpose statement and seemingly broad accreditation criteria, presents other challenges for HEIs. These challenges include, but are not limited to, recognizing alternative forms of teaching and learning and constraints imposed by the accreditation criteria on the engineering licence status of educators.

While accreditation has traditionally been perceived as a tool to support regulators, there is a growing need for these perceptions to evolve into a broader and more comprehensive framework that fosters co-design, collaboration, and open communication among the various groups within the engineering ecosystem. These genuine partnerships will be fundamental for adapting to the evolving landscape of accreditation and the future of the profession.

[5] Engineers Canada. 2023 National Membership Information, page 7.

Accreditation touches many parties, and their needs and constraints must be considered. In their report, the FEA Benchmarking Task Force identified that the purpose of accreditation statements of comparators included more interest holders and multiple objectives. That Task Force recommended reviewing and considering the breadth of Engineers Canada's current purpose of accreditation. In the Fall 2023 consultations on the potential focus of the purpose of accreditation, interest holders were clear that focusing on one interest holder (regulators or programs or students) is a non-viable option.

Based on findings from the foundational research conducted by the FEA Benchmarking and Engineering Education Task Forces and from consultations with nearly 170 interest holders about what they need and want from accreditation in the future, the Purpose Task Force was not able to validate the current purpose of accreditation.

b. Establishing a revised purpose of accreditation

To address the identified challenges and establish a solid foundation for the future accreditation system, the Purpose Task Force transitioned from validating the current purpose statement to establishing a revised one. The Steering Committee reviewed the revised statement carefully and accepted the following:

The purpose of accreditation

> *Accreditation provides assurance that an engineering program is designed and delivered such that its graduates meet the academic requirements to be licensed as professional engineers in Canada*.

It is important to understand two key points about the terminology in this statement:

1. Firstly, "engineering program" should be interpreted broadly to extend beyond the offerings of traditional undergraduate curricula at an HEI. The term denotes a framework that may include a diverse range of courses, activities, or experiences, strategically designed to achieve specific learning outcomes or objectives.
2. Secondly, the term "academic requirements" encompasses the various educational qualifications that serve as prerequisites for licensure and directly links to the NARL. The Steering Committee deliberately chose this because it reflects the established terminology used in relevant legislation outlining the educational prerequisites for engineers to be licensed.

The revised purpose statement embraces a new approach that recognizes the different needs of engineering programs, the students, and the regulators within the accreditation system and strives to balance their interests without prioritizing one group over another. It also maintains a linkage between accreditation and licensure.

It should be noted that, while the statement as worded has been recommended above for the reasons given, they also recognize that the continued evolution of the accreditation system because of future phases of the FEA project may require additional modifications. As such, the

statement can be reviewed when the Full Spectrum Competency Profile (FSCP) is fully implemented and periodically thereafter to ensure its continued relevance

c. Three focuses of the revised purpose of accreditation

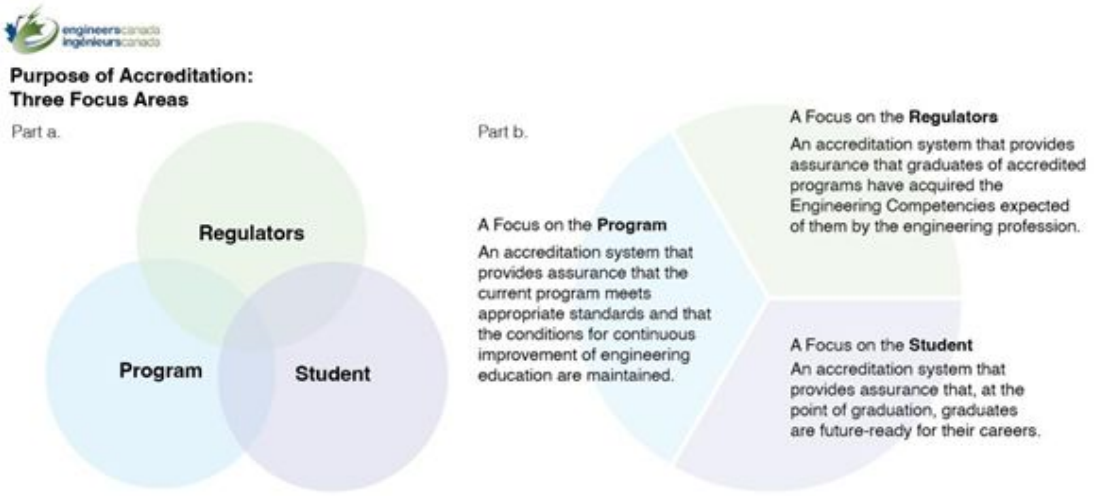

Figure 2: The three focuses of the revised purpose of accreditation.

Part a: Illustrative of the intersecting needs of the three distinct interest holders.
Part b: Illustrative of the equitable needs of the three distinct interest holders, originated from the 2022 Foresight Session and garnered support from regulators during the Fall 2023 consultations.

ENGINEERING PROGRAMS

Engineering programs seek accreditation based on the curriculum content they offer. The key verbs of "design" and "deliver" in the revised purpose statement imply support for flexibility and innovation. The program design ensures long-term efficacy, while program delivery focuses on the present, ensuring compliance with standards and preparing and evaluating current students.

The statement deliberately omits specifying that accreditation is solely for engineering programs at the undergraduate level. This flexibility allows for the definition to encompass existing accredited engineering programs while leaving space for potential future programs beyond the traditional undergraduate degree.

STUDENTS

While not every student will seek licensure after graduation, accreditation of engineering programs helps ensure graduates are (1) equipped with the necessary skills and knowledge to thrive in their future careers, and (2) have a clear path toward licensure, should they choose to pursue it. Accreditation is an acknowledgement that they have satisfactorily completed a program that has academically prepared them for the profession. For those who choose to pursue licensure, accreditation helps expedite the process.

REGULATORS

Regulators maintain confidence that graduates from CEAB-accredited programs have acquired the foundational knowledge and skills expected of them for entry into the profession. Accredited programs facilitate regulators' assessment of applicants' academic qualifications, which constitute just one of the five criteria typically examined by regulators for licensure.

d. The scope of accreditation

To clarify the scope of accreditation criteria, the Steering Committee recommends adding the following statement after the purpose of accreditation statement:

> *The accreditation review process includes evaluation of the curriculum as well as those factors which enable the design and delivery of the program, including human and financial resources, the learning environment and facilities, and quality control mechanisms.*

The Purpose Task Force's recommendation to address learning environments noted, "These factors should be subject to review, but they should not unduly influence the final accreditation decision unless they directly impact program outcomes."[6]

The influence of program environment on outcomes varies. An outcomes-focused approach can help identify the most impactful factors. Research suggests, for example, that learning environment, notably student engagement, has a positive impact on student learning.[7]

Additionally, Engineers Canada's commitment to the Washington Accord necessitates continuous evaluation of program learning environments to ensure compliance with the Accord's criteria.

Recommendation two for the future direction:
Endorse the revised purpose and scope of accreditation statements.

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[6] Purpose Task Force document, p.24

[7] Shernoff, D. J., Ruzek, E. A., & Sinha, S. (2016). The influence of the high school classroom environment on learning as mediated by student engagement. *School Psychology International*, *38*(2), 201–218. https://doi.org/10.1177/0143034316666413

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Cheng, L., Ritzhaupt, A. D., & Antonenko, P. (2018). Effects of the flipped classroom instructional strategy on students' learning outcomes: a meta-analysis. *Educational Technology Research and Development*, *67*(4), 793–824. https://doi.org/10.1007/s11423-018-9633-7

Design parameters for the future accreditation system

These design parameters to ensure the future accreditation system operates at an acceptable level were first developed by the Purpose Task Force and embraced by the Steering Committee.

i. The future accreditation system must be simple, flexible, and adaptable over time.

The rapid pace of change in engineering education (including knowledge and pedagogical practice), engineering practice, and societal trends underscores the importance of maintaining an agile and responsive accreditation system. The system must not only be able to prepare today's engineering graduates to perform as required in the engineering ecosystem but also stay abreast of dynamic shifts (both anticipated and emergent) to effectively prepare tomorrow's graduates. This approach to accreditation not only sustains the relevance and efficacy of CEAB-accredited programs in the present but also positions them at the forefront of engineering education, poised to effectively meet the evolving needs of the profession.

Simplicity, flexibility, and adaptability are essential to ensure the continued relevance of accreditation and to make space for innovation in education, with the goal of streamlining and enhancing the educational experience of students. Engineering programs must remain adaptable – both in program content and mode of delivery – to integrate emerging disciplines and methodologies into their curricula, and to equip graduates with the knowledge and skills required to address increasingly complex challenges. The accreditation system must also remain versatile enough to accommodate diverse and non-traditional pathways to knowledge acquisition.

ii. The future accreditation system must be outcomes-focused.

The 2022 reports, *Benchmarking the Canadian Engineering Accreditation System* and *Current and Emerging Practices in Engineering Education*, collected information about the practices and trends of accreditation and education for various professions and jurisdictions. The reports revealed that Engineers Canada's accreditation system relies heavily on inputs, including a 'minimum path' requirement and a time-length input requirement for degree duration. The findings suggest that the current Canadian engineering accreditation system does not align with global practices, which place stronger emphasis on outcomes.

The current combination of input (i.e. AUs) and outcome measures (i.e. Graduate Attributes) complicates assessments and contributes to perceptions that accreditation is burdensome for HEIs. Transitioning to a more outcomes-focused model would align Canadian accreditation practices more closely with the trends observed in other professions and jurisdictions, while also complementing the growing regulatory shift towards CBA licensure processes.

iii. **The future accreditation system must achieve alignment between the educational approach and the accreditation criteria.**

As education content and pedagogy evolve, accreditation must evolve as well. Accreditation criteria must be updated to align with the current trends in educational design and delivery. The accreditation system should not be seen to impede innovation in education but rather align with the principles of programmatic design and delivery outlined in the revised purpose statement.

iv. **The future accreditation system must consider the equity of application across all institutions, taking into consideration local context and different levels of access to resources.**

The accreditation criteria must be focused on assessing the core requirements of engineering programs and not serve as a comparative assessment of the HEIs' services, which will inevitably vary from institution to institution based on geographic, demographic, or resource constraints.

v. **The future accreditation system must value experiential learning.**

Experiential learning should be recognized as a valuable component of the educational preparation of students. This could be bolstered by a definitive statement emphasizing its value and allowing for the exploration and implementation of alternative forms of program delivery. Experiential learning includes, but is not limited to, project-based learning, interaction with practicing professionals, domestic and international student exchanges, and cooperative or internship experiences.

vi. **The future accreditation system must be based on defensible evaluation processes.**

Defensibility means that the accreditation criteria, methods, and resulting decisions are supported by evidence – whether it be quantitative or qualitative – and can be clearly justified, contributing to transparency and legitimacy within the process. These attributes promote trust in the accreditation process and its outcomes.

vii. **The future accreditation system must balance evolving criteria.**

As the accreditation system continues to evolve to remain current, new criteria will inevitably be introduced. However, to maintain the focus and alignment of accreditation's scope with its intended purposes, it is essential to remove outdated criteria. This proactive measure prevents the scope from expanding uncontrollably. Managing the criteria judiciously is key to maintaining feasibility, ensuring a favourable return on investment in terms of resources and costs incurred, and preventing programs from growing unnecessarily. A process that systematically and predictably reviews, revises, and deploys criteria must be developed to ensure stability and sustainability for all interest holders. Ad-hoc and piecemeal criteria revision must be avoided.

viii. **The future accreditation system must optimize the use of peers to conduct evaluations.**

Accreditation evaluations depend on peer-review processes, which involve experts from various fields, both academic and non-academic, to ensure a thorough assessment of programs' adherence to established standards. Engaging peers with varied backgrounds and expertise cultivates a diverse and inclusive perspective during evaluations. The accreditation criteria must be written such that programs can demonstrate compliance to a peer and a peer can evaluate compliance without requiring specific deep knowledge that is not broadly held by peer volunteers. These peers should undergo training and instruction to ensure that evaluations are conducted fairly and effectively, within the scope of accreditation, and meet the desired objectives.

ix. **The future accreditation system must incorporate and recognize content of 'feeder' programs.**

The statement on the purpose of accreditation emphasizes that engineering programs are "*designed and delivered*" such that its graduates [emphasis added] meet the academic requirements to be licensed as professional engineers in Canada." This implies that HEIs can demonstrate through the accreditation process that all graduates of their programs, regardless of their starting point, have either met or exceeded the established academic requirements for licensure.

x. **The future accreditation system must provide value to regulators and expedite the licensure process for graduates.**

Engineering regulators have confidence that graduates of CEAB-accredited programs are academically prepared for licensure, allowing them to streamline their academic review procedures accordingly.

Graduates have confidence in the quality of their program, knowing it has met rigorous standards that are nationally recognized. They benefit from expedited acceptance of their academic qualifications without the need for further confirmatory processes. The continued development of the FSCP, which defines all the competencies required of an engineer at the various points in their career development – from learner to graduate to licence holder – that is aligned with Graduate Attributes introduces students to Pan-Canadian Work Experience Competencies at an early stage. This early exposure offers a distinct advantage to graduates pursuing licensure.

xi. **The future accreditation system must avoid the duplication of other processes of evaluation of programs.**

The accreditation system must prioritize the distinctive aspects of engineering education and adhere to the standards outlined in the evaluation criteria, while avoiding redundancy with other program evaluation processes and quality standards assessments legislated and overseen by provincial governments and agencies. This will prevent unnecessary burdens and redundancies on HEIs.

Where possible, trusted third party reviews and approvals should be assessed with respect to whether they fulfill accreditation requirements for program environment, leadership, human and financial resources, progression, and other such criteria that do not require the specialized engineering education knowledge of peer reviewers.

xii. **The future accreditation system must prepare graduates to demonstrate their competencies and skills to employers.**

Accreditation ensures that prospective employers can have confidence in graduates from CEAB-accredited programs, knowing they possess the knowledge and skills expected of new entrants to the engineering profession.

xiii. **The future accreditation system must enable national and global mobility of students and graduates.**

Accreditation significantly enhances the mobility and portability of learning opportunities and the recognition of qualifications. By attesting to the reputational quality of a program, accreditation facilitates access to educational opportunities not available at students' home institutions, such as co-ops or national and international exchanges. As well, mutual recognition agreements, like the Washington Accord, enhance international credential recognition and promote the mobility of engineering professionals across borders.

xiv. **The future accreditation system must communicate its value and enhance public perception of undergraduate engineering education.**

The public must have confidence that graduates from accredited programs have received a high-quality education that prepares them to contribute effectively to society through their chosen profession.

> **Recommendation three for the future direction:**
> **Adopt the outlined design parameters as a fundamental framework for the future accreditation system.**

Insights from project engagement and research supporting the revised purpose and scope statements

i. Value of accreditation

A fundamental question for this project was whether accreditation retains its value for interest holders. Throughout the project, regulators, students, and engineering programs have affirmed that they derive substantial benefits from accreditation and recognize its enduring value. Regulators have confidence that the accreditation system ensures that graduates from CEAB-accredited programs possess the academic qualifications needed to initiate the licensing process. HEIs

uphold their reputation through the recognition and quality of their engineering programs. Students receive support in attaining their educational and career aspirations, along with streamlined licensing processes.

ii. Modernization

After confirming the value of the accreditation system, interest holders agree on the need for modernization to remain relevant amid the rapidly changing, complex world. This process starts by emphasizing equity among accreditation's interest holders and building stronger relationships to tackle the changes effectively.

iii. Skills and competencies of the engineering profession

Accreditation remains pivotal in preparing future engineers to navigate the complexities of a rapidly changing world. When FEA interest holders adopted a longer-term perspective, there was significant consensus on the future direction of the engineering profession. Engineers need to be values-based leaders, who are technically excellent and actively collaborate across disciplines, are mindful of the future, and maintain curiosity and a desire for lifelong learning. By instilling these qualities, accreditation ensures that graduates are not only technically adept but also equipped to handle ethical dilemmas, collaborate across disciplines, and contribute meaningfully to society's well-being.

iv. Program flexibility and adaptation

Currently, accreditation upholds the quality of engineering programs, but there is a perception that it does not keep pace with evolving pedagogical and student needs. Introducing greater flexibility and adaptability into the accreditation process would enrich the overall educational experience for students. A more dynamic system would support innovations and provide students with a broader range of learning opportunities. Administratively, enhanced flexibility and adaptability would reduce bureaucracy and barriers, leading to improved governance and a more streamlined and effective accreditation process.

v. Linkage to academic requirements and pathways to licensure

The future system must maintain the linkage between accreditation and an academic requirement for licensure. This entails developing an academic requirement that promotes more equitable access to the profession by ensuring fairness for all applicants and applying standards consistently, irrespective of their academic background or chosen pathway to licensure.

Building the envisioned future accreditation system

To align with a revised purpose and scope of accreditation and prepare for a resilient future system, the current accreditation system must undergo a transformative shift. There is perceived rigidity and inflexibility in the current system's structure and requirements. Accreditation needs to innovate

more, adapt efficiently, and stay relevant in a rapidly evolving landscape of engineering education and practice.

To shape the future and resolve the current gaps, the following recommendations are proposed:

i. Mixed inputs and outcomes measures

CURRENT GAP

The current accreditation system emphasizes the measurement of both program inputs and program outcomes.

The current accreditation system relies on a mix of inputs (i.e. AUs) and outcome measures (i.e. Graduate Attributes). An engineering program must meet certain minimums for different curriculum components, including mathematics, natural sciences, engineering science, engineering design, and complementary studies. The comprehensive nature of the required AUs is reported to restrict curricular flexibility, limiting both the range of subjects offered and students' elective choices.

Findings from the *Benchmarking the Canadian Engineering Accreditation System* and *Current and Emerging Practices in Engineering Education* reports suggest the Canadian engineering accreditation system does not align with global practices which place stronger emphasis on outcomes only.

> **Recommendation four for the future direction:**
> **Mandate a shift to an outcomes-focused accreditation as a cornerstone for future system change.**

> **Recommendation five for the future direction:**
> **Remove criteria related to the measurement of curriculum content with Accreditation Units. Focus on Graduate Attributes until a transition to the FSCP can be completed.**

RATIONALE

The CEAB accreditation system transitioned to include outcomes measurement via the Graduate Attributes starting in 2008. The accreditation system has evolved to a point where interest holders can have confidence in outcomes measurement as a way of fulfilling the revised purpose of accreditation.

Practical efficiencies and maintaining interest holders' confidence are critical gaps in the current system. Transitioning to an outcomes-focused approach has the potential to bridge these gaps by streamlining processes and fostering trust and will likely resolve many other interconnected issues in the system. For example, outcomes-focused accreditation can empower faculty to explore innovative teaching methods and students to explore diverse learning pathways, which fosters a more flexible and autonomous learning environment. This transition would also align Canadian

accreditation practices more closely with the trends observed in other professions and jurisdictions, while also complementing the growing regulatory shift towards Competency Based Assessment (CBA) licensure processes.

The transition to outcomes-focused accreditation, paired with the revised purpose of accreditation, provides a foundation upon which revised accreditation criteria can be built to maintain regulator confidence in the academic preparedness of graduates from accredited programs and provides flexibility to HEIs in curriculum design and delivery. Significant effort will need to be undertaken to revise the accreditation criteria, policies, and processes in support of an outcomes-focused accreditation system. Continuing to assess Graduate Attributes as a bridge until full implementation of the FSCP is a valuable stepping stone towards a completely outcomes-focused accreditation system.

ii. Minimum path

CURRENT GAP

In the current accreditation system, the "minimum path" identifies the set of courses in an undergraduate engineering program which provide the least number of AUs within each curriculum content category (math, natural science, engineering science, engineering design, and complementary studies). The minimum path ensures that every individual student is exposed to the minimum number of AUs in each curriculum category throughout their years of study. This is a key component of the input measurement of curriculum content of an engineering program.

> **Recommendation six for the future direction:**
> **Retire the concept of the "minimum path".**

RATIONALE

The "minimum path" principle is a tool of an input-based system. With the retirement of input-based measures, the "minimum path" concept can logically also be retired. This would then empower faculty to explore innovative teaching methods and students to explore diverse learning pathways, which fosters a more flexible and autonomous learning environment.

iii. Faculty licensure qualifications

CURRENT GAP

The current accreditation criteria require a portion of engineering science and/or engineering design to be delivered by faculty members holding or progressing toward professional engineering licensure. This restricts who can teach within these programs and limits the pool of potential educators.

In other countries, the licensure requirements for faculty in engineering education systems are less stringent. Metric 1.3.5 "Licensure requirement for faculty" in the Benchmarking the Canadian

Engineering Accreditation System highlights this variation.[8] It indicates that Australia, France, and Poland do not mandate licensure for faculty. In Malaysia, 30 per cent of actively teaching engineering faculty need to be registered.

Recommendation seven for the future direction:
Accept some of the recommendations presented by the CEAB to address faculty license requirements, including:

a. The CEAB should endorse the principle that engineering programs must have substantial and meaningful involvement of licensed professionals in the education of future professionals.
b. The CEAB and visiting teams should interpret existing accreditation criteria related to the role of the professional engineer in the instruction of students in a manner that allows HEIs to have more flexibility with respect to mechanisms to facilitate substantial and meaningful involvement of licensed professionals in the engineering education process.
c. The CEAB must require HEIs to demonstrate that graduates have developed the expected level of understanding of, and commitment to, professionalism.[9]
d. The CEAB remove the Specific AUs criteria[10] and the requirement for the significant design experience to be conducted under the professional responsibility of licensed faculty.[11]

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[8] Benchmarking the Canadian Engineering Accreditation System, page 13

[9] Professionalism is defined in the CEAB 2023 Accreditation Criteria and Procedures as "an understanding of the roles and responsibilities of the professional engineer in society, especially the primary role of protection of the public and the public interest." (page 8).

[10] The specific AUs criteria refers to accreditation criteria 3.4.4.1 and 3.4.4.4 of the CEAB 2023 Accreditation Criteria and Procedures.

3.4.4.1 A minimum of 600 AUs of a combination of engineering science and engineering design curriculum content in an engineering program shall be delivered by faculty members holding, or progressing toward, professional engineering licensure as specified in the Interpretive statement on licensure expectations and requirements.

3.4.4.4 A minimum of 225 AUs of engineering design curriculum content in an engineering program shall be delivered by faculty members holding professional engineering licensure as specified in the Interpretive statement on licensure expectations and requirements.

[11] The requirement for the significant design experience to be conducted under the professional responsibility of licensed faculty refers to accreditation criteria 3.4.4.6 of the CEAB 2023 Accreditation Criteria and Procedures:

The engineering curriculum must culminate in a significant design experience conducted under the professional responsibility of faculty licensed to practise engineering in Canada. The significant design experience is based on the knowledge and skills acquired in earlier work and it preferably gives students an involvement in team work and project management.

RATIONALE

The CEAB's thought paper, *Reconsideration of Specific AUs in the Assessment of Engineering Programs,* addresses the subject of faculty licensure (Appendix B).

Currently, the accreditation criteria require a specific number of AUs in engineering science and engineering design must be taught by faculty members holding or progressing towards a professional engineering licensure in Canada. These AUs are designated as "specified AUs".

The quantitative approach is not well-suited to accommodate the evolving pedagogies and learning environments. There are many challenges in recruiting faculty who meet the licensing requirements, one being the proliferation of emerging and interdisciplinary engineering fields. The requirements demanding exposure to Canadian professional engineers or engineers-in-training (EITs) hinders program exchanges and limits access to valuable global and emerging education opportunities.

As the CEAB's thought paper notes, cultivating professionalism in students does not have to be anchored in contact hours and could be achieved using different activities, indicators, and assessments. The transition away from input measures to an outcomes-focused system is not congruent with the specified AU criteria.

> **Recommendation eight for the future direction:**
> **Explore the development of alternate ways for HEIs to demonstrate that students enrolled in engineering programs have substantial and meaningful involvement with licensed professionals.**

RATIONALE

The CEAB's thought paper introduced this recommendation. The elimination of Specific AUs addresses the faculty licensure requirement, however defining and implementing "substantial and meaningful involvement with licensed professionals" still requires further development. The new policy group could be tasked with developing these concepts using a co-design approach beginning in early 2025.

iv. Experiential learning and program exchanges

CURRENT GAPS

There is a perception that the current accreditation system restricts the range of experiential learning opportunities available to students, and that it also restricts the range of domestic and international learning opportunities available to students and undervalues the significance of such experiences. Minimum curricular pathways and faculty licensing requirements can hinder program flexibility and limit students' opportunities for experiential learning and program exchanges.

Recommendation nine for the future direction:
Formalize the Temporary Exemption for Students Going on International Exchange[12] by permanently integrating its core principles into CEAB policy.

RATIONALE

Transitioning to an outcomes-focused accreditation system should expand and validate experiential learning opportunities. Revised accreditation criteria linked to the NARL should create a clear structure for assessing learning outcomes from these opportunities and can enhance recognition for the educational value they offer. Other countries have successfully integrated experiential learning into accreditation standards, as reported in *Benchmarking the Canadian Engineering Accreditation System*.[13]

Program exchanges are one specific type of experiential learning. Students gain exposure to different cultures, cultivating global mindsets and developing intercultural competencies that are essential for success in today's interconnected world. At the request of regulators, the CEAB implemented a temporary exemption policy to remove barriers for students going on international exchange in 2023. However, a permanent solution is necessary to ensure continued access to these educational experiences.

v. Educational curriculum and learning environments

CURRENT GAP

Compared to other accreditation systems, Engineers Canada's purpose of accreditation statement is narrower in scope. While learning environment factors are not formally included in the current purpose statement, aspects such as the quality of faculty, morale of students, and suitability of leaning facilities are evaluated. Evaluation of these aspects of the learning environment is a requirement of all signatories to the Washington Accord.

Recommendation 10 for the future direction:
Evaluate the feasibility of accepting HEI evaluations from provincial quality assurance bodies to streamline CEAB processes while maintaining compliance with the Washington Accord.

A comparative analysis between the CEAB accreditation criteria and those of the provincial quality assurance bodies should be undertaken as a means of determining the degree of overlap between assessments.

[12] Engineers Canada. CEAB 2023 Accreditation Criteria and Procedures, page 118.

[13] Benchmarking the Canadian Engineering Accreditation System, p.33

The methodology for such a comparative analysis involves the following steps:

1. **Data collection:** Gathering assessment criteria from relevant quality assurance bodies, such as the Ontario Universities Council on Quality Assurance (OUCQA).
2. **Criteria categorization:** Classifying and comparing the types of criteria and procedures across organizations.
3. **Coding and identification:** Assigning unique descriptive codes to each criterion and procedure for efficient analysis.
4. **Comparative analysis:** Identifying similarities and differences between the criteria and procedures across organizations.
5. **Data analysis:** Using thematic analysis to uncover patterns and trends.
6. Duplication identification: Counting instances of overlapping criteria and procedures.

The methodology will also consider the following:

1. There are various interpretations for key terminology across CEAB and the provincial quality assurance frameworks. This work aims to reduce confusion and develop a consistent understanding of that language.
2. The comparison can accommodate data for a specific criterion or procedure, even when it is categorized or structured differently. Reformatting might be necessary for accurate analysis.
3. There is diversity across Canadian HEIs and provincial quality assurance processes, so a representative sample of provincial quality assurance bodies will be selected to ensure an accurate assessment is made. If variety across the sample is substantial, all provincial quality assurance bodies will be included.
4. There are varying scopes of provincial quality assurance audits. This work aims to identify potential areas for overlap while respecting their distinct purposes.
5. This comparative analysis can be established as a cyclical occurrence (possibly aligned to the accreditation cycle) to monitor changes in provincial quality assurance practices over time.

The comparison of CEAB accreditation criteria with those of provincial bodies can help determine the extent of overlap between engineering accreditation and other quality assurance systems, replacing anecdotal evidence with data-driven insights.

If the comparative analysis uncovers duplication, the CEAB can take steps to prevent unnecessary burdens and redundancies on HEIs. Criteria adequately assessed by other quality assurance bodies and not requiring specialized engineering expertise may be either eliminated from CEAB's purview or accepted through external verification.

The Canadian engineering accreditation system will continue to gather information about students and the program environment to maintain Washington Accord signatory status. Non-curriculum criteria may be reframed to enhance alignment with an outcomes-focused approach. This may involve transitioning from quantitative counts to broader descriptive narratives, potentially drawing on models employed by organizations such as Engineers Australia.

RATIONALE

The review of non-curriculum accreditation criteria will address three key aspects:

- Ensuring that accreditation only evaluate the aspects of a program that impact its design and delivery as per the proposed purpose and scope statements.
- Enhancing efficiencies by reducing overlap with other quality assurance systems.
- Maintaining compliance with Washington Accord expectations for signatories to evaluate program environment elements in their accreditation processes.

vi. Return on investment

CURRENT GAP

Throughout the FEA project, interest holders strongly affirmed their support for the value of accreditation; however, their continued support hinges on perceiving a commensurate return on investment.

- HEIs are mindful that the considerable resources allocated to accreditation are diverted from other initiatives or priorities, which is especially problematic in their resource-constrained environments.
- Students desire a program that adequately prepares them for their future careers.
- Regulators' academic qualification processes may not be adequately equipped to handle the increasing demand from graduates of non-CEAB institutions, leading to potential inefficiencies and resource strain.

> **Recommendation 11 for the future direction:**
> **Maximize the return on investment for all interest holders by incorporating new core values into the accreditation system, including co-design, collective stewardship, and more representative governance.**

RATIONALE

As the Purpose Task Force document states, a modernized accreditation process should aim to strike a balance between rigorous standards and practical efficiencies. The system must retain its tangible benefits for all interest holders while avoiding excessive burdens. Reviewing existing accreditation criteria and transitioning to an outcomes-focused approach has the potential to significantly enhance the efficiencies and effectiveness of the system. The need to undertake this evaluation is supported the results of the annual CEAB *Accountability in Accreditation (AinA)* report which reveals a recurring concern about inefficiencies in the accreditation process.[14]

[14] Accountability in Accreditation. Annual evaluation results.

vii. Collective stewardship

CURRENT GAP

The current accreditation system is narrowly focused on meeting the needs of regulators. However, as the revised purpose statement aims to balance the needs of regulators with HEIs and students, it is imperative that the criteria reflect and respond to the needs of all interest holders.

> **Recommendation for the future direction**
> **Covered by recommendation 11: Maximize the return on investment for all interest holders by incorporating new core values into the accreditation system, including co-design, collective stewardship, and more representative governance.**

RATIONALE

To ensure that the future accreditation system truly represents those it serves, it is imperative that all interest holders actively participate in shaping its development and management. This involves acknowledging their input and establishing a formal method for their contributions across various aspects of the system, including shaping criteria, policies, and procedures. The contribution mechanism should embody the principles of co-design, collaboration, and open communication to foster a sense of stewardship and inclusivity among the involved parties.

5. The Full Spectrum Competency Profile (FSCP)

Mandate of the Academic Requirement Task Force

A critical foundation for the future accreditation system lies in transitioning to a competency-based system and establishing a clear definition of the academic requirements for licensure. The Academic Requirement Task Force was mandated to investigate the establishment of an academic requirement for licensure that applies to all applicants for engineering licensure.

The need for a National Academic Requirement for Licensure (NARL)

As a regulated and licensed profession, engineers must exhibit the requisite academic and experiential credentials to practise. Canada's 12 provincial and territorial engineering regulators are responsible for establishing admissions standards to the profession, which aim to safeguard the public by issuing licenses only to those deemed competent.

Academic qualifications are one of five criteria for licensure, with each regulator establishing and conducting its own processes for evaluating these qualifications. Currently, regulators rely on CEAB's accreditation framework to ascertain that graduates from CEAB-accredited programs meet the academic prerequisites. The CEAB's criteria encompass five broad input categories and twelve

Graduate Attributes, while leaving individual engineering programs to shape their own curricula and determine teaching content.[15]

Regulators rely on syllabi created by the CEQB as part of the assessment process for evaluating the academic credentials of applicants for licensure who have not graduated from a CEAB-accredited program (referred to herein as "non-CEAB applicants"). These syllabi are meticulously structured based on the curricula of accredited programs. Intended to serve as a benchmark to maintain consistency in academic standards, regulators use the syllabi as an indicator about whether non-CEAB applicants have had exposure to similar content and inputs as the graduates of CEAB-accredited programs.

While the accreditation system and syllabi endeavour to establish an academic standard, a significant risk persists due to the absence of a clear definition of the essential components of an academic requirement for licensure. This gap introduces vulnerabilities into both the accreditation and licensure systems, raising concerns about robustness and defensibility. Without a precise definition, the current system cannot transparently delineate the necessary knowledge for safe practice.

The Association of Professional Engineers and Geoscientists of Alberta (APEGA) commissioned a 2019 study, An Evaluation of Assessment Processes for Engineering Licensure in Alberta: Implications for a National Entry-to-Practice Examination, which strongly underscored the need to create and adopt a national engineering competency profile.[16] The report highlighted that establishing such a profile is the most important step for integrating the various phases of an engineer's professional journey by ensuring the quality and comprehensiveness of evaluation processes across all stages. A clear framework of the knowledge and abilities of a competent practitioner enhances the validity and transparency of evaluations and creates a standardized benchmark against which to assess foreign trained applicants. Furthermore, the adoption of this competency profile establishes the expectations for evaluations at every stage of an engineer's career, including defining content requirements for program accreditation, evaluating academic qualifications of graduates from non-accredited programs, evaluating work experience, and setting expectations for continuing professional development.

The implementation of a NARL has the potential to bolster the accreditation and licensure systems' defensibility and could foster greater consistency in the assessment of academic qualifications. It could promote greater accessibility to the profession by contributing to streamlined evaluation procedures that are less dependent on the origin of an applicant's education and facilitate professional mobility. It could also enhance the integrity of the engineering profession and inspire trust from provincial governments, fairness commissioners, and human rights tribunals.

[15] As described in the *CEAB's 2023 Accreditation Criteria and Procedures*

[16] Prepared for APEGA: Sadesky, G. (2019). An Evaluation of Assessment Processes for Engineering Licensure in Alberta: Implications for a National Entry-to-Practice Examination.

The significance of substantial equivalency

The need for substantial equivalency in the accreditation system is rooted in ensuring equitable access to the profession. With the growing number of internationally trained graduates and increased attention on government-led fairness reviews, it is essential to ensure the assessment of all CEAB and non-CEAB graduates are founded on similar standards that follow principles of equity and fairness.

The provincial/territorial regulators are responsible for ensuring only qualified applicants are granted licensure. However, the absence of a NARL means that they have adopted their own individual academic requirements. The lack of a common framework across all 12 Canadian engineering regulators can lead to confusion for applicants, industry groups, and the public, potentially influencing where applicants initially seek licensure.

In 2022, the CEQB released the *Feasibility Study: Methods of Academic Assessment for Non-CEAB Applicants for Licensure*. The report proposed "expanding the current Core Engineering Competencies into a full competency profile that covers academic and experience entry-to-practice requirements".[17] The full competency profile would provide increased flexibility and fairness for non-CEAB applicants for licensure, improving transparency and confidence that applicants are evaluated against a common entry-to-practice standard.

Implementing a NARL would promote substantial equivalency by providing a cohesive framework for the 12 provincial and territorial engineering regulators to conduct assessments, irrespective of applicants' academic backgrounds. It would satisfy the need to balance regulators' mandate to protect public safety while maintaining flexibility in licensing qualified applicants without subjecting them to unnecessary barriers.

The establishment of a NARL can support fundamental principles outlined in Engineers Canada's policy guideline, *Regulators Guideline on the Academic Assessment of Non-Canadian Engineering Accreditation Board Applicants*:[18]

1. Assessment processes must be individualized.
2. Assessment processes must be fair.
3. Education documents must be authenticated and verified.
4. Assessment of breadth and depth of education (of the program and institution) should be primarily quantitative and partly qualitative.
5. Confirmation of breadth and depth of education is a requirement for all applicants.
6. Flexibility should be allowed between breadth and depth, so long as a minimum threshold is met.

[17] Prepared for the CEQB: Johnson, K. and Johnson G. (2022). Feasibility Study: Methods Of Academic Assessment For Non-CEAB Applicants For Licensure. (p.34).

[18] Note this guideline is only accessible on the Engineers Canada website for members only.

Feedback in support of equitable access to the profession

FEA's 2023 Virtual Simulations brought together 80 participants for a multi-day, structured brainstorming session to explore potential directions for the future accreditation and licensing system.

During these simulations, participants indicated support for a NARL. They emphasized the value in having a national set of clearly defined and transparent standards for engineering knowledge and competence. Responses also suggested that this requirement should address a general, baseline level of technical knowledge complemented with professional competencies and an understanding of the ethical responsibilities of an engineer.

The participants carefully evaluated three distinct models of academic requirements, including Graduate Attributes, foundational technical and social competencies, and discipline-specific technical knowledge. However, there was no clear decision emerging regarding which model would be most appropriate. Regardless of how the academic requirement was defined, it seemed that it would continue to be difficult to evaluate internationally trained applicants' competencies.

Without consensus on a preferred model, the FEA project team explored developing a tailored academic benchmark to advance the participants' shared goal of improving equitable access to the profession for all applicants for engineering licensure.

What is a competency framework?

Competence is an individual's ability to perform a task, function, or role to a set of prescribed standards. Competence itself is not readily observable, but engineering competency is inferred from the engineer's activities. It encompasses the spectrum of knowledge, decisions, judgments, perceptions, procedures, and values that engineers employ while executing their duties.

Competency is an explanatory model that considers how engineers engage in their professional responsibilities, duties, and tasks. Competency is also a pragmatic notion: it demonstrates an engineer's aptitude to operate within a designated learning or work environment and leverage diverse resources to achieve desired outcomes. An engineer will draw on a combination of knowledge, skills, and attributes acquired through training and experience to adapt to changing, unforeseen, or constraining circumstances.

While attributes and competencies may seem interchangeable, they have distinct roles in describing an individual's readiness to practise. Attributes represent the desired qualities of a skilled professional. They are aspirational goals that focus on the characteristics (the "what") possessed by a well-rounded engineer. Competencies are how it is known the "what" has been attained (the "how").

Current national standards and documents, such as the CEAB Graduate Attributes, the Pan-Canadian Work Experience Competencies, and the benchmarks established by the International Engineering Alliance's Graduate Attribute and Professional Competencies Framework for engineering graduates and professionals, frame competencies as observable and demonstrable actions. This approach is intended to allow for their measurement and evaluation in a concrete manner.

A competency framework, while not an assessment tool on its own, helps define the standard against which the observable and demonstrable actions of all applicants can be measured and evaluated. This practice enhances transparency and ensures consistency throughout the assessment process and promotes greater accessibility to the profession for those with diverse backgrounds and experiences.

The activities of a competency framework are determined by a community of practitioners and serve as the benchmark against which other learning and work activities are assessed. This approach fosters the expectation that a competent engineer, within a specific context, would exhibit aptitudes akin to their peers at a similar stage of development. Consequently, evaluating a prospective engineer's competencies must be done in context of the knowledge, skills, and attributes acquisition phase, so that evaluators may ascertain if the prospective engineer "knows how" to accomplish the task and can "do" the task in the pre-licensure work environment.

Many regulated professions, including engineers, have adopted a competency framework to help harmonize admission requirements and facilitate enhanced labour mobility. It serves to anchor the profession's other core standards and can be used by regulators for a variety of purposes, including, but not limited to:

- Academic program approval/recognition/accreditation
- Assessment of internationally educated applicants
- Continuing competency requirements
- Input into the content and scope of entry-to-practice exams
- Policy and standard development and decision making
- Reference for professional conduct matters
- Public and employer information regarding the practice expectations of professional engineers

The Full Spectrum Competency Profile (FSCP)

The FSCP **(Figure 3)** is a working model of a competency framework with the potential to enhance the accreditation review processes and support engineering regulators in licensing professional engineers.

In the initial stages of the FSCP's development, the FEA project team aimed to identify a set of competencies that would be common to all engineers, regardless of discipline. The premise was that early in their careers, there is a strong emphasis on knowledge acquisition in academic settings. As they progress, engineers apply this knowledge and deepen it as they focus on a specific area of practice.

Based on prior research, the project team established a competency framework consisting of 34 competencies organized into eight domains: six for core competencies and two for cross-functional competencies.

Core competencies are common to all engineers regardless of disciplines and areas of practice. They are mandatory for all engineering graduates, newly licensed engineers, and experienced practitioners. The six domains for core competencies of the FSCP were compared to the IEA's Graduate Attributes and Professional Competencies Framework. There was alignment to all the Graduate Attributes, except with "tool usage", and among all professional competencies **(Figure 4)**.

The core competencies were also compared to the CEAB Graduate Attributes and Pan-Canadian Work Experience Competencies. Again, there was near complete alignment except with "use of engineering tools" from the CEAB Graduate Attributes and with "technical competence" in the Pan-Canadian Work Experience Competencies **(Figure 5)**.

Appendix C provides a single illustrative comparison of the FSCP to these established benchmarks.

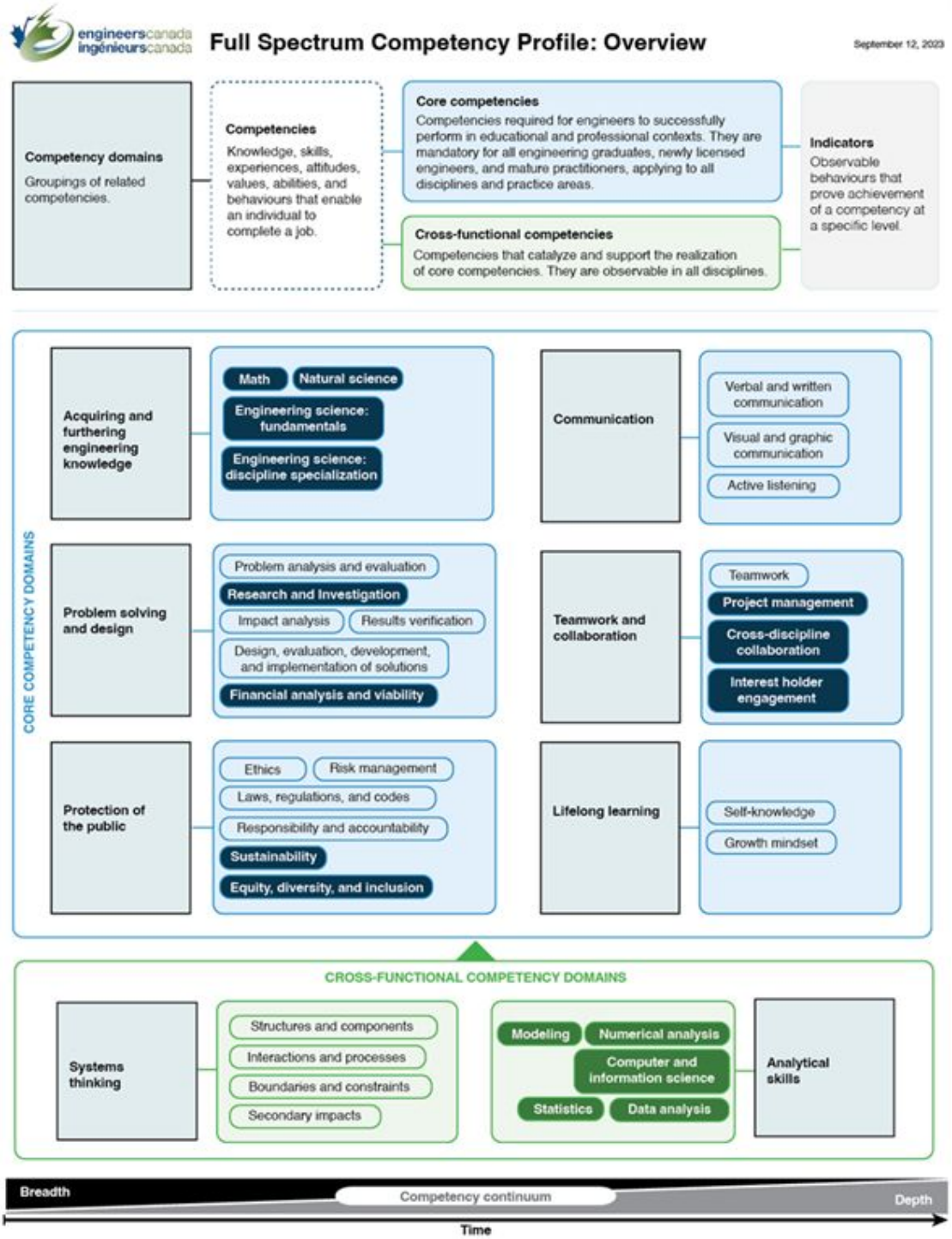

Figure 3: The FSCP competencies are organized into eight domains. The subset of competencies that constitute the proposed NARL are shaded in dark blue and dark green.

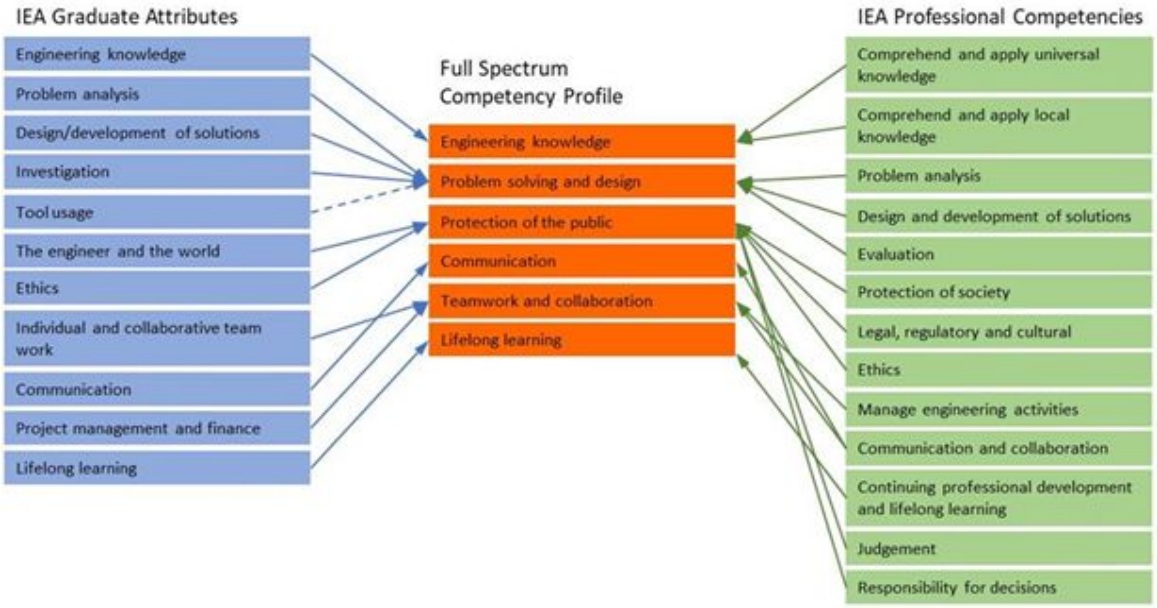

Figure 4: Mapping the FSCP Core Competencies to the IEA's Graduate Attributes and Professional Competencies Framework.

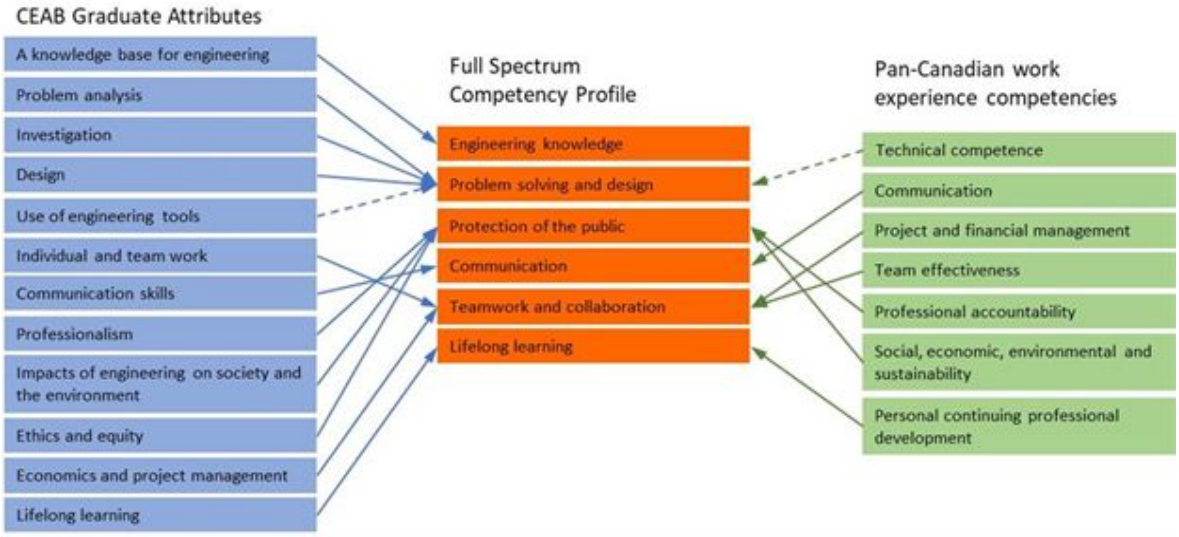

Figure 5: Mapping the FSCP Core Competencies to the CEAB Graduate Attributes and the Pan-Canadian Work Experience Competencies.

As a "full spectrum" competency framework, the FSCP is intended to identify the competencies that all engineers need to develop during their career journey on a continuum, from undergraduate education to post-graduation experiential learning to post-licensure practice **(Figure 6)**. In undergraduate education, competency development is foundational and emerging; in post-graduation and through experiential learning, the competency continues to develop and consolidate; and in post-licensure, the competency becomes more focused and refined.

While the current focus of FSCP development is on pre-licensure competencies, its ultimate scope could encompass the entire engineering career spectrum. The post-licensure stage involves continuing professional development (CPD). By aligning with CPD requirements, the FSCP can provide a structured approach to ongoing professional development, ensuring engineers maintain and enhance the competencies essential for safe and effective practice.

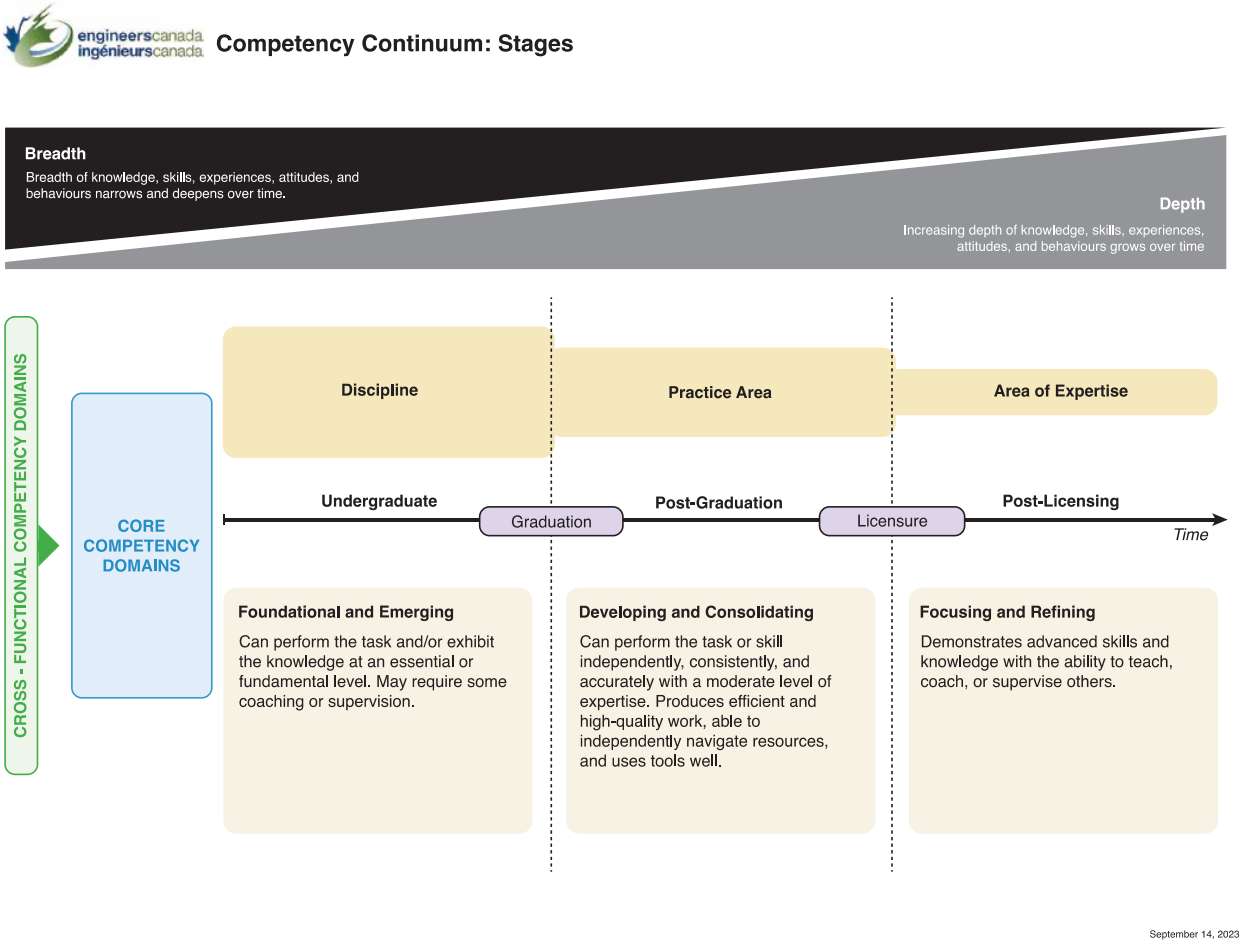

Figure 6: Competency stages. An engineer's journey from undergraduate through post-graduation and post-licensure.

The FSCP model is aligned to Miller's Pyramid of Clinical Competence **(Figure 7)**.[19] The pyramid was developed specifically for assessing the clinical competency of learners in health care settings. Influenced by concepts from Bloom's Taxonomy of Educational Objectives, Miller's Pyramid was

[19] Miller, G. E. (1990). The assessment of clinical skills/competence/performance. Academic Medicine, 65, S63-S67.

established in 1990 and has been used in medical education for nearly as long.[20] Like engineering, medicine is a high stakes regulated profession requiring rigorous evaluation.[21]

Miller's Pyramid aims to define education and training by outputs rather than inputs. Ultimately, it is focused on what learners can do, which is not the same as what they have been taught. The model's higher levels require greater professional and assessment authenticity.

The model is useful for assessing learning outcomes (competencies) at various stages of the learning process. The pyramid illustrates the expected learner progression from novice (bottom) to expert (top). Novice learners should be able to recall facts, but as their competency develops, they should be able to interpret and apply, demonstrate, and perform required knowledge, skills, and attitudes in authentic practice settings. Competency assessment should also evolve from recall-based multiple-choice questions to more authentic, workplace-based assessments.

Throughout the socialization and expert consultation of the FSCP, most of the feedback has focused on the implementation details and practical considerations, rather than questioning the core concept of the framework as a working competency model. Questions have revolved around issues like defining and interpreting competencies and ensuring applicability to non-CEAB graduates. This suggests strong initial validity of the FSCP, and further evidence will be necessary as the development progresses.

Figure 7: Miller's Pyramid of Clinical Competence

[20] Bloom, B. S. (1956). Taxonomy of educational objectives: Cognitive and affective domains. New York: David McKay.

[21] Norcini, J. J. (2003). ABC of learning and teaching in medicine: Work based assessment. *BMJ. British Medical Journal*, *326*(7392), 753–755. https://doi.org/10.1136/bmj.326.7392.753

6. The National Academic Requirement for Licensure (NARL)

What is the NARL?

Competency-based academic requirements are a key feature of outcomes-focused accreditation systems. This approach ensures graduates possess the essential competencies for safe engineering practice, regardless of their educational pathway. By assessing competencies instead of academic backgrounds, the system fosters a fairer and more flexible accreditation process.

The NARL has the potential for establishing a national standard of assessment for regulators and streamlining licensure for graduates of non-CEAB programs. However, the Path Forward Co-Design Session in April revealed participant concerns regarding certain aspects including:

- the process of selecting competencies and indicators;
- the optimal number of competencies;
- potential complexities of implementation;
- the defensibility of assessment strategies;
- potential methods to integrate the competency framework into accreditation criteria; and
- the applicability to non-CEAB graduates and alternative licensure pathways.

The Steering Committee acknowledges the importance of these concerns, recognizing that some solutions may only emerge as the FSCP Pilot Project and/or the actual implementation of the FSCP progresses.

NARL competencies

The Academic Requirement Task Force was tasked with identifying the specific competencies from the FSCP that graduating engineers would need to demonstrate at least at the "knows how" level upon completing their academic studies. In an iterative process over several weeks, the Academic Requirement Task Force proposed an initial subset of competencies which they expect to be acquired during academic training and which they further expect will be demonstrated at least at the "knows how" level upon completion of the engineering program **(Figure 8)**. This number was not predetermined but emerged organically through the process and is still subject to confirmation as this work proceeds

When used in the accreditation system, these competencies are expected to be developed and assessed by CEAB-accredited engineering programs, ensuring graduates can demonstrate them at the "knows-how" level of Miller's Pyramid by graduation. This "knows-how" level signifies the graduates' ability to apply their knowledge and skills in a practical setting. These competencies serve as the foundation of an engineer's career path and are expected to be further developed and honed to the "does" level of Miller's Pyramid during the post-graduate and post-licensure phases of their career **(Figure 7)**.

At the point of licensure, the applicant is assessed to determine if they:	KNOW	KNOW HOW	SHOW	DO
Acquiring and furthering engineering knowledge				
Math		✓		
Natural science		✓		
Engineering science: fundamentals		✓		
Engineering science: discipline specialization		✓		
Problem solving and design				
Problem analysis and evaluation				✓
Research and investigation		✓		
Impact analysis				✓
Results verification				✓
Design, evaluation, development and implementation of solutions				✓
Financial analysis and viability		✓		
Protection of the public				
Ethics				✓
Laws, regulations and codes				✓
Risk management				✓
Responsibility and accountability				✓
Sustainability		✓		
Equity, diversity and inclusiveness		✓		
Communication				
Verbal and written communication				✓
Visual and graphic communication				✓
Active listening				✓
Teamwork and collaboration				
Teamwork				✓
Project management		✓		
Cross-discipline collaboration		✓		
Stakeholder engagement		✓		
Lifelong learning				
Self-knowledge				✓
Growth mindset				✓
Systems thinking				
Structures and components				✓
Boundaries and constraints				✓
Interactions and processes				✓
Secondary impacts				✓
Analytical skills				
Numerical analysis		✓		
Data analysis		✓		
Statistics		✓		
Computer and information science		✓		
Modelling		✓		

Figure 8: The competencies of the NARL assessed at the "knows-how" level and the other competencies of the FSCP assessed at the "does" level for CEAB graduates. Applying this mapping to alternative licensure pathways requires further development that may be explored in the FSCP pilot study.

Focusing on exit-level competencies streamlines accreditation for HEIs and provides confidence to regulators that CEAB graduates are well-prepared for the next step towards licensure. The remaining competencies of the FSCP which do not comprise the NARL will be assessed by the regulator before an applicant is granted licensure. Applicants must demonstrate these competencies at the "does" level of Miller's Pyramid.

While accreditation focuses on developing and assessing NARL competencies, HEIs still have the autonomy and flexibility to go beyond these in their curriculum design. It is likely that HEIs will choose to offer courses that build foundational knowledge for the other competencies. HEIs may also evaluate all competencies of the FSCP at a level exceeding "knows" on Miller's Pyramid, if they choose to do so. This allows for program innovation and caters to specific industry needs or graduate specializations.

It is important to emphasize that the NARL, as proposed in this report, is a concept / working draft that is expected to evolve with further refinement, exploration, and development. If this initiative is to proceed, it is plausible that the number and selection of competencies which make up the NARL may change. For example, the design competency is part of the FSCP, although it is not included in the current NARL. While engineering programs may introduce students to design concepts ("knows"), the practical application ("doing") often occurs after graduation during the engineer-in-training period. However, design remains part of the IEA Graduate Attributes which must be met to achieve compliance with the Washington Accord. Additional studies will explore how to best integrate design considerations into the NARL or future accreditation processes to bridge this gap and maintain alignment with international expectations.

There may be opportunities to integrate other competencies not currently included in the NARL. The possibility of expanding HEI assessment beyond the initial NARL competencies may potentially reduce the regulators' assessment workloads. Although not in scope for the current proposed FSCP pilot study, further development of the NARL should examine the composition and optimal number of competencies, as well as appropriate levels of HEI assessment.

All these details will need to be determined at a later stage and clear communication of NARL competencies and assessment procedures will be essential for HEIs, students, accreditation visiting teams, and regulators.

Definitions of the proposed NARL competencies

DOMAIN: ACQUIRING AND FURTHERING ENGINEERING KNOWLEDGE

1. Math

Mathematics is an extension of language and is used to describe, analyze, and predict scientific and engineering principles and phenomena. It includes, but is not limited to, elements of linear algebra, differential and integral calculus, differential equations, probability, statistics, numerical analysis, and discrete mathematics.

2. Natural science

Natural sciences include the exploration of the interactions and processes of the natural world and the systematic observation and understanding of natural phenomena through analytical and/or experimental techniques.

3. Engineering science: fundamentals

Engineering science fundamentals involve the application of mathematics and natural science to practical problems. They lay the foundation for discipline specific engineering science while also providing a knowledge base to ensure an understanding of the broader scope of engineering practice. Engineering Fundamentals may include, but are not limited to, engineering mechanics, materials, fluid mechanics, thermodynamics, and basic electric circuits and power.

4. Engineering science: discipline specialization[22]

Engineering science subjects involve the application of mathematics and natural science to practical problems. Topics are determined by the specific discipline of specialization and will include the applied aspects of the essential science relevant to problem-solving within that discipline.

[22] It may be impossible to define Engineering Science: Discipline Specialization more precisely while still maintaining its generic applicability. As with all working definitions presented in this report, additional recommendations for refining this competency definition may be included in the Path Forward report and validated in subsequent stages of the project.

DOMAIN: PROBLEM SOLVING AND DESIGN

5. Research and investigation

An ability to identify, formulate, research, and conduct investigations of complex engineering problems, by methods that include appropriate experiments, analysis, and interpretation of data, and synthesis of information using principles of mathematics, natural science, and engineering science to reach substantiated conclusions.

6. Financial analysis and viability

An ability to appropriately use financial principles to determine the economic viability of proposed engineering projects and to select between independent alternatives. Engineering economic principles include the importance of finance in business decisions, project cash flows, time value of money, depreciation, present worth analysis, rate of return analysis, and risk analysis.

DOMAIN: PROTECTION OF THE PUBLIC

7. Sustainability

Sustainability is a long-term goal. Sustainable development is a strategy employed to meet the economic, environmental, and social needs of the present without compromising the ability of future generations to meet their own needs.[23] Sustainable engineering requires:

- consideration of economic efficiency and profitability for investors,
- navigating the tension between technical constraints and the need to broaden the design space to include ecological and environmental impact,
- meaningful consideration of design processes and outcomes that can preserve or improve social equity, and
- intergenerational equity, an emerging area for consideration, arising from non-Western knowledge systems that consider the impact of our actions seven generations into the future.

8. Equity, diversity, and inclusiveness

Equity is the promotion of fairness and justice for each individual that considers historical, social, systemic, and structural issues that impact experience and individual needs. Elevating equity in a good way removes barriers for the entire population.

Diversity is a measure of representation within a community or population that includes identity, background, lived experience, culture, disciplinary expertise, and many more.

[23] This definition is provided in part from the UN. https://www.un.org/en/academic-impact/sustainability

Inclusion is the creation of an environment where everyone shares a sense of belonging, is treated with respect, feels heard, and is empowered to participate.

It is important to note that while an inclusive group is by definition diverse, a diverse group is not always inclusive. An inclusive working environment or team strives for equity and respects, accepts, and values differences.[24]

DOMAIN: TEAMWORK AND COLLABORATION

9. Project management

Project management involves the comprehension of a project at various levels from full ownership at a coordination level to being knowledgeable about a project at a level of day-to-day tasks. Project management involves a set of principles that span the planning, implementing, and executing stages, and involves necessary attributes such as relationship building, budgeting, and resourcing, as well as considerations for safety, sustainability, and regulatory requirements.

10. Cross-discipline collaboration

An awareness of the importance of working effectively on projects that may involve collaboration across different disciplines and practice areas of engineering, including other professions.

11. Interest holder engagement

Interest holder engagement is the process by which an organization embarks on meaningful collaboration with key groups/individuals who may be impacted by actions and decisions being made. Meaningful engagement involves the recognition that all engineering work has an impact and that those affected should be provided with accessible and appropriate information and be given the opportunity to voice those concerns.

DOMAIN: ANALYTICAL SKILLS

12. Numerical analysis

The use of algorithms and numerical approximation techniques in mathematical analysis as applied to engineering problems. Topics include direct and iterative methods, conditioning and discretization, and generation and propagation of errors.

[24] This definition is from the University of Toronto. https://research.utoronto.ca/equity-diversity-inclusion/equity-diversity-inclusion

13. Data analysis

The knowledge and skills required to ask and answer a range of questions by analyzing data, including developing an analytical plan; selecting and using appropriate statistical techniques and tools; and interpreting, evaluating, and comparing results with other findings. An ability in data analysis implies knowledge in data awareness, cleaning, discovery, ethics, exploration, tools, and visualization.[25]

14. Statistics

Ability to use statistical principles to summarize data and draw conclusions from it. Important concepts include probability, frequency distributions, mean, standard deviation, propagation of errors, hypothesis testing, sample size determination, and regression.

15. Computer and information sciences

The knowledge and skills to use computer systems to store and manipulate large quantities of information. Topics include programming theory, computer system architecture, data repositories (e.g., databases, cloud storage, data lakes), and computation theory.

16. Modelling

Modelling is the purposeful development of an analytical, numerical, or empirical description of a real system. These models can be mathematical or physical in nature and are created with the specific intent of describing, analyzing, testing, demonstrating, and/or predicting behaviours, properties, or other characteristics of the system.

Insights from project engagement and research supporting the FSCP

i. Mapping the FSCP to existing benchmarks

As part of the analysis about the suitability of the FSCP, Engineers Canada conducted a mapping exercise to compare it with established benchmarks, including the CEAB's Graduate Attributes, the Pan-Canadian Work Experience Competencies, and the IEA's Graduate Attributes and Professional Competencies Framework. This mapping was presented to interest holders during the 2023 Fall Consultations to showcase the FSCP's alignment with the existing frameworks and bolster its credibility and reliability (Appendix C).

[25] This definition is provided from Statistics Canada. https://www.statcan.gc.ca/en/wtc/data-literacy/compentencies

ii. Alignment with competency-based assessment

The 2022 report *Current and Emerging Practices in Engineering Education* highlighted the increasing interest in CBA methods among educators. Most Canadian engineering regulators have already implemented CBA, comprising 34 competencies across seven different categories. The adoption of the FSCP represents a formalization of this assessment approach. Furthermore, competencies can be clearly defined, which facilitates transparent communication to interest holders regarding expectations for fulfillment and the evaluation processes.

Educators have also been expressing increased interest in CBA. Certain engineering programs have begun implementing CBA techniques, which enable students to effectively demonstrate their competencies on targeted tasks, facilitating their successful completion of courses.

iii. Alignment with other professions

In the 2022 report *Benchmarking the Canadian Engineering Accreditation System*, all eight of the accreditation systems under study, comprising five engineering and three other professions, are characterized as outcomes-focused accreditation systems. A combination of graduate attributes, experience examples, and competencies are used as part of the accreditation system measures of student outcomes.[26] Preparing the FSCP and its subset of competencies that comprise the NARL would be consistent with these established models of accreditation.

The 2023 interviews with leadership from the Canadian nursing, accounting, and architecture professions revealed a shared reliance on competency profiles. Notably, all academic programs within these professions follow a competency-based approach, alongside national exams for licensure/certification.

In the case of internationally trained applicants, nursing employs a competency-based review for assessing academic qualifications. As well, internationally trained architects with seven or more years of experience are not subjected to academic assessment; rather, their licensure process centers on a comprehensive competency review of their extensive professional experience.

iv. Versatility

The FSCP represents versatility, accommodating the varying timeframes that make up the engineer's career journey. Its competencies can be tailored to suit the needs of diverse user groups, ranging from undergraduate learners to post-graduation trainees and post-licence practitioners. The approach allows for seamless adjustments in measuring and evaluating proficiency in competencies at each stage, ensuring appropriate assessments of both breadth and depth based on the stage of development. Additionally, the competencies are not limited to a specific discipline and encompass all areas of engineering practice equally.

[26] See Metric 1.4, page 15.

v. Readiness for the future

During FEA's Foresight Session and virtual simulations, interest holders were invited to reflect on the anticipated future landscape of the engineering ecosystem. An emerging consensus suggests that engineers will operate in environments marked by heightened uncertainty and rapid change. Acknowledging this evolving reality, the FSCP provides a clear method for preparing tomorrow's engineers to effectively confront multifaceted and interdisciplinary challenges. The FSCP itself is intended to be adaptable, ensuring its continued relevance in an ever-changing professional environment. By encompassing not only technical knowledge and abilities but also analytical, interpersonal, and social skills, the FSCP offers a comprehensive framework to ensure that engineers emerge as well-rounded and adaptable professionals equipped to navigate diverse professional contexts.

vi. Engineering education

The FSCP encourages flexibility and innovation within engineering programs, aligning closely with the core purpose of accreditation. By embracing the FSCP, programs can tailor their educational offerings to meet the evolving needs of the engineering profession while maintaining the standards expected by accreditation bodies.

The FSCP also represents an outcomes-focused approach, which reflects the pedagogical practices of many other jurisdictions covered in the 2022 report, *Benchmarking the Canadian Engineering Accreditation System*. The use of outcomes-focused approaches bolsters the credibility and effectiveness of engineering education.

vii. Increased diversity and inclusion

The FSCP presents a significant opportunity to address diversity and foster inclusion within the engineering profession. By embracing the FSCP, engineering programs and regulators can adapt their approaches to accommodate diverse learning styles and offer multiple pathways to licensure. This inclusive approach ensures that individuals from various backgrounds and experiences have greater opportunities for access to, participation in, and success within the engineering field.

Refining the FSCP to meet the needs of the accreditation and licensing systems

The Academic Requirement Task Force identified key concerns related to FSCP and NARL that centered on maintaining momentum and interest holder engagement. Specifically, the task force highlighted:

i. Urgency to complete the NARL

CURRENT GAP

There is an urgent imperative to thoroughly develop and implement a NARL that is universally adopted by all regulators. This imperative contrasts with the longer development timelines needed to meticulously outline the FSCP. While the FSCP and NARL are complementary, the anticipated differences in their development timelines may complicate how they are received, adopted, and accepted.

> **Recommendation and Rationale:**
> **See An Imperative for National Adoption and resulting Recommendation 12 (p.56)**

ii. Continued development of the FSCP

CURRENT GAP

Interest holders must maintain their focus on the long-term development of the FSCP and actively work towards its widespread adoption across the entire system. Achieving a comprehensive assessment as intended by the FSCP would require significantly more effort from all involved parties, which may not align with regulators' current priorities. The ongoing government pressures to expedite applications for entry to practice stand in contrast to the requirement for heightened assessment efforts.

To foster adoption of the FSCP, it is essential to ensure that the FSCP:

- Is easily understood and applied.
- Enhances existing rigorous standards.
- Adopts efficient procedures to optimize outcomes.
- Emphasizes a comprehensive assessment of competencies, including public safety, accountability, and liability.
- Balances the evaluation of both academic and experiential competencies effectively.
- Supports diverse approaches to flexibility and innovation within the system.

> **Recommendation and rationale:**
> **See An Imperative for National Adoption and resulting Recommendation 12 (p.56)**

iii. An Imperative for National Adoption

CURRENT GAP

Historically, Canadian engineering regulators adopt new licensure approaches at different stages, influenced by a variety of regulator-specific factors. At the April 2024 Co-Design Session, regulator representatives were keen to collaborate on this initiative but identified considerations such as legislative realities, competing priorities, and change fatigue as potential barriers to synchronized national adoption. However, there is an emergent desire across all regulators to collaborate and harmonize. The 2024 signing of the National Statement of Collaboration is a tool that could be leveraged to catalyze on upcoming opportunities and achieve shared goals.

> **Recommendation 12 for the future direction:**
> **Initiate a pilot study to evaluate the feasibility of the FSCP according to the proposed Terms of Reference.**

RATIONALE

The urgency to complete the NARL and continue development of the FSCP, as well as an imperative for national adoption of both, are interrelated aspects which may be collectively addressed through initiating the FSCP pilot study.

Achieving nationwide adoption of the FSCP and NARL by all interest holders immediately is not realistic and, like other large-scale transformative initiatives, it would be more reasonable to expect regulators to adopt the initiative on a staggered approach. There will be early adopters who embrace the framework in its initial stages, followed by others who join later.

As part of the FEA project, it has been determined that Engineers Canada should initiate the FSCP pilot study to test and refine the concepts of the FSCP and its NARL subset. The system's rollout will likely unfold at a pace determined by the interest holders, and the pilot study will play a crucial role in assessing the FSCP and NARL's feasibility and demonstrating their value to interest holders, convincing them of the long-term viability and encouraging wider adoption.

iv. Substantial equivalence with IEA Graduate Attributes and Professional Competency Framework

CURRENT GAP

While the FSCP has been mapped onto existing frameworks such as CEAB's Graduate Attributes, the Pan-Canadian Work Experience Competencies, and the IEA's Graduate Attributes and Professional Competencies benchmarks, there are still gaps that need to be addressed to improve alignment with these models.

Recommendation 13 for the future direction:
Ensure that the FSCP, including the NARL, is substantially equivalent to the IEA Graduate Attributes and Professional Competencies benchmark.

RATIONALE

As a signatory to the Washington Accord and member of the APEC-EA and IPEA agreements, Engineers Canada must demonstrate that the competency framework applied to the accreditation system and the evaluation of work experience remains substantially equivalent to the IEA's Graduate Attributes and Professional Competencies Framework.

7. Developing a competency framework

To advance the FSCP development and address known gaps, further refinement of the competency framework is required. A Job-Task Analysis (JTA) approach may facilitate this process **(Figure 9)**. A JTA has three main tasks:

1. **Define the competency:**
    a. Develop **competency statements** that provides a wholesome description of the area of competence (for example, what is meant by 'math'?).
    b. Develop a **description** of what it means to be competent in the area (what does it mean to be competent in 'math'?) using a four-part structure:
        i. Performance of an action (verb)
        ii. The action to whom or what (the object of the verb)
        iii. To produce something (an expected outcome or why the action is necessary)
        iv. Using what tools, equipment, work aids, processes, standards.
2. **Validation Survey:** The fully articulated competencies need to be socialized and validated in the engineering ecosystem. The validation process solicits the opinions of a large, wide-ranging group of subject matter experts to rate each competency on two dimensions:
   (1) Frequency: How often does a practicing licensed engineer use this competency?
   (2) Criticality: How critical is the competency to safe practice? Typically, for each articulated competency, the "Frequency" rating is multiplied by the "Criticality" rating to produce a validation score. The higher the score, the greater the evidence of validity.
   In other words, the higher the score, the greater the evidence that the competency belongs in the FSCP as a sample of activities that all engineers do.
3. **Define indicators:** These are discrete, observable outcomes of actions that demonstrate competence. Each FSCP competency will need to be defined with indicators using Miller's Pyramid at both the "knows how" level for HEIs and at the "does" level for regulators assessing CEAB and non-CEAB applicants. The indicators should clearly outline how an individual demonstrates they "know how" to complete an action and how they demonstrate they can "do" the action.

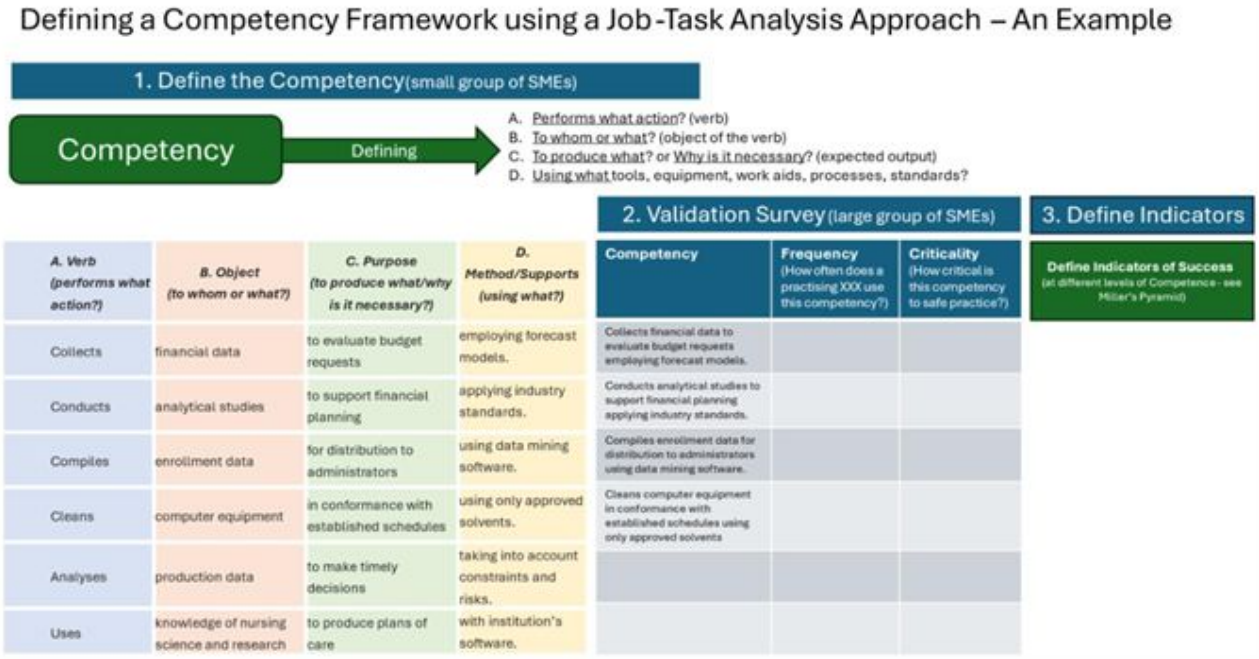

Figure 9: Defining a competency framework using a Job-Task Analysis Approach.[27]

8. Full Spectrum Competency Profile (FSCP) pilot study

At the Path Forward Co-Design Session, participants believed that a pilot study would be needed to demonstrate the feasibility of implementing the FSCP concepts across the engineering licensure and accreditation systems. It was suggested that the pilot study could involve selecting a small subset (3-5) of the FSCP competencies, developing the competencies and the associated indicators, and applying the resulting framework in both the accreditation and licensure environments. The pilot study should involve a range of interest holders, including engineering regulators and HEIs, and be advanced quickly. The pilot study could help inform the process of fully developing the NARL and the FSCP and demonstrate their applicability in the engineering ecosystem.

Following the session, Terms of Reference were drafted for an FSCP pilot study Working Group (Appendix D). A pilot study is a small-scale, short- to medium-term study that helps an organization learn how a large-scale project might work in practice. It is an opportunity to test the design, functionality, and feasibility of a solution before committing significant resources to a full-scale implementation.

[27] Prepared by Sid Ali, member of the FEA project team for Path Forward Co-Design Session in April 2024.

The purpose of the FSCP pilot study is to understand the effort required to define the FSCP competencies and explore the appropriate processes to assess them. It is intended to begin after the publication of this Path Forward Report and its acceptance by the Engineers Canada Board and is expected to conclude in late 2025 and is designed to provide initial insights into the application of the competency framework all licensure pathways.

The FSCP pilot study Working Group will have diverse representation, including members from Engineers Canada staff, the Academic Requirement Task Force and Purpose Task Force, the CEAB and CEQB, HEIs, engineering regulators, a psychometrician, and potentially industry and recent engineering graduates. The assessment of competencies within the pilot study will be conducted by both HEIs and engineering regulators to assess both CEAB and non-CEAB applicants across a geographic diversity of Canadian jurisdictions.

There are six objectives for the working group, including:

1. selecting the competencies to pilot,
2. defining the competencies and associated indicators such that they can be assessed in a defensible manner and in a way that establishes competence,
3. creating assessment processes,
4. developing a plan to pilot the selected competencies and processes,
5. overseeing the execution of the pilot study, and
6. reporting recommendations.

While the attendees of the Path Forward Co-Design Session originally suggested piloting 3-5 competencies, including at least one technical competency and one professional competency, it will be up to the working group to decide which subset of competencies to include in the pilot study. The aim is to include competencies which are highly relevant to all professional engineers (i.e. they are both used frequently and are critical to safe practice).

A follow-on task will be to apply learnings of the pilot to all FSCP competencies to define the competencies and associated indicators. The FSCP will then need to be fully validated.

> **Recommendation for the future direction:**
> **Covered by recommendation 12: Initiate a pilot study to evaluate the feasibility of the FSCP according to the proposed Terms of Reference.**

9. Implementation approach

The FEA project has been a multi-year initiative requiring sustained effort from a core team and input from hundreds of interest holders. Creating a shared vision for the future and fostering collaboration have been essential foundations for this work.

The next phase of the work will require ongoing broad support across the engineering ecosystem. A change management plan informed by diverse perspectives will be vital for navigating this complex transition, considering both operational and emotional factors. Appendix E provides detailed considerations and principles to guide future changes in the accreditation system and FSCP, along with a framework for measuring interest holder support during the changes.

> **Recommendation 14 for the future direction:**
> **Establish a dedicated task force to develop a change management plan for the strategic implementation of outcomes-focused accreditation. This plan should encompass the sequence of tactical steps to move from the current state to the desired state and address the potential emotional and psychological experience of change.**

Governance

The transformative shift towards outcomes-focused accreditation necessitates a revamped governance structure. Just as collaborative stewardship and co-design underpin this new accreditation model, these principles must permeate the governing body itself.

The new governance model should prioritize fairness, transparency, and increased equality for all interest holders – HEIs, accreditors, regulators, and students. By fostering a sense of collective involvement, interest holders are more likely to perceive a favourable return on their investment in the accreditation process.

The adoption of FSCP will also create a change in the roles and procedures of all interest holders. New protocols for communication, data sharing, and decision-making will be essential. Development of the new governance model should be centered on the key considerations detailed in the following recommendations and supporting information.

CEAB: Separate policy setting from operational delivery.

The current CEAB is responsible for both policy development, including oversight of accreditation criteria and procedures setting, as well as for the operational tasks of conducting site visits and issuing accreditation decisions.

The new governing model should separate these functions. The *Benchmarking the Canadian Engineering Accreditation System* report, explains that Poland and Australia have separated the

oversight body setting accreditation standards from the body that implements accreditation processes and makes accreditation decisions. In France, the accreditation body sets the standards and makes the initial decision, although the final decision is made by a government ministry.[28]

This separation could be achieved by establishing two separate committees, one of which would focus on the policy aspects (including establishing accreditation criteria) and the other would be operational. It should be noted that it was clear from all interest holders input that future policy development should be co-designed and, as such, a new policy committee should have this as a core foundational tenet. With the responsibility for policy development removed, the remaining operational committee would have a focus on the accreditation process itself, including visits and decisions.

> **Recommendation 15 for the future direction:**
> **The Engineers Canada Board should establish two distinct bodies in accreditation: a policy body responsible for setting strategic direction, and an operational body focused on execution of policies.**

> **Recommendation 16 for the future direction:**
> **Establish a new dedicated oversight body for the FSCP.**

The FSCP roll-out significantly impacts the roles and responsibilities of various interest holders within the entire engineering ecosystem in Canada. It will impact how HEIs teach students to prepare them for licensure, the eligibility of international applicants based on substantial equivalency, and how regulators assess applicants of any background.

This new landscape necessitates oversight of the FSCP and the subset of competencies which will comprise the NARL, ensuring it stays current and is applied effectively. This is an essential task that requires a dedicated body composed of individuals with the necessary expertise and representation to critically consider the full spectrum of competencies required by future engineers, encompassing both technical and non-technical skills.

The oversight committee's focus on the competency profile also intersects with various regulatory functions, including accreditation, entry-to-practice requirements, and post-licensure continued learning. To ensure a comprehensive perspective, the committee should be separate from other bodies and have diverse representation covering all these aspects.

CEQB: Continue to provide guidance on engineering issues.

The CEQB develops national guidelines, papers, and examination syllabi to serve the needs of the engineering community, including regulators, licence holders, and applicants for licensure.

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[28] *Benchmarking the Canadian Engineering Accreditation System*, p.18

The FSCP pilot study is intended to explore its applicability to non-CEAB graduates and may potentially reduce the reliance on input-based syllabi reviews. Nevertheless, the transition to the FSCP will significantly affect admissions processes, and CEQB's expertise remains instrumental for developing standards, processes, and criteria for non-CEAB applicants and alternative licensure pathways.

The CEQB should continue to provide guidance on practice issues and adapt its approach to admissions. To ensure their valuable insights continue to shape the future, the CEQB should actively participate in the new FSCP oversight committee.

Representation:

The new governance model should foster a more inclusive environment by incorporating a wider range of voices. This includes more equitable representation from regulators, HEIs, CEAB, CEQB, industry, and students. This diverse mix is crucial for capturing the perspectives of all interest holders and fosters a shared sense of ownership and responsibility for the system's outcomes.

Interest holders

Shifting to an outcomes-focused accreditation system will necessitate specific adjustments for some interest holders' roles and activities in the engineering ecosystem. The following assumptions will warrant further validation in future stages of work.

CEAB

CEAB will continue to lead the accreditation process, conducting visits and issuing decisions. It is suggested that policy and criteria development will be informed by a separate body comprised of diverse representation. The CEAB's established expertise in defining accreditation requirements will be represented on this new policy body, and future policy development should be co-designed.

The CEAB's expertise will be essential for the new FSCP oversight body to ensure alignment with accreditation criteria. The CEAB remains a key partner for equipping HEIs and regulators with the resources they need to understand accreditation. Applying lessons learned from the rollout of Graduate Attributes from 2008 to 2015 can help develop clear communications and a well-defined action plan to assist HEIs and regulators during transition.

CEQB

The implementation of the FSCP would necessitate a shift in the CEQB's role regarding admissions issues and syllabi reviews. The syllabi reviews may become redundant with the FSCP, but CEQB's expertise positions it well to contribute to the broader FSCP oversight process. In particular, CEQB's experience with issues encompassing the entire career continuum, from entry to practice to ongoing professional development, equips them to assess how effectively the FSCP aligns with the

"full spectrum" career journey it aims to cover. Additionally, the CEQB is well-suited to ensure the FSCP effectively addresses non-CEAB graduates and alternative licensure pathways.

Regulators

The NARL is intended to give regulators continued confidence in the quality of HEIs' programs while necessitating adjustments to their licensing practices. The implementation of standards-based assessments may contribute to expedited procedures and enhances the defensibility. Engineers Canada and the new FSCP oversight body will engage with each regulator directly to gauge their receptivity for the FSCP's evolving framework and to provide tailored support that would facilitate a smooth adoption process.

HEIs

Shifting from Accreditation Units (AUs) to outcomes-focused accreditation will provide greater flexibility and innovation in program design, particularly for emerging disciplines. This, in conjunction with clear guidance from CEAB, should allow HEIs to tailor their programs with a sharper focus on student success.

Students

By shifting to outcomes-focused accreditation, students may gain access to a wider range of learning opportunities through flexible and diverse educational pathways. Students can be confident that their engineering program is preparing them effectively to meet the licensure requirements and pursue successful engineering careers.

Industry

Historically, the Canadian engineering accreditation system has had less industry involvement as compared to other countries. As the Engineers Canada Board considers this report's recommendations, opportunities to continue to involve industry in its initiatives should be leveraged. industry expertise can support Engineers Canada by informing accreditation criteria and contributing to the development of competencies for applicants for licensure. The Terms of Reference for the FSCP pilot study recognize this potential and leaves room for industry participation for these very reasons.

> **Recommendation 17 for the future direction:**
> **Establish regular engagement opportunities with industry, leveraging existing mechanisms to gather ongoing feedback and insights.**

RATIONALE

The specific nature of industry engagement requires further refinement. Industry needs vary across sectors and geographic regions. While establishing a dedicated Engineers Canada industry group may not be necessary, leveraging the HEIs' existing industry advisory groups would be beneficial. Reconsidering previous industry polling methods and exploring additional engagement strategies will be crucial for effectively gathering industry input.

Engineering scholars

System changes present an opportunity to leverage the expertise of engineering scholars. Their years of dedicated research on accreditation and engineering practice can provide invaluable insights for a smooth transition and the development of a robust future system.

The public

The public may not notice the direct impact of changes from the FEA project. However, the goal to ensure graduates are equipped to practice safely and protect the public remains paramount. This indirect benefit to society must be preserved throughout any system adjustments and it behooves Engineers Canada and other interest holders to market the benefits achieved through these advancements within the engineering ecosystem.

Core values for implementation of the Path Forward recommendations

i. Co-design

The FEA project's progress exemplifies the power of co-design. By embracing a co-design approach, the project tapped into diverse perspectives and experiences, fostering the creation of innovative ideas and new possibilities that authentically reflect the complexities of the accreditation system.

This collaborative methodology, characterized by committed individuals, diverse viewpoints, a focus on shared goals, and a willingness to navigate conflicts, must become the cornerstone for the successful development and evolution of the future accreditation system and the development of the FSCP.

Accepting the core principles of co-design will bring tangible benefits to all interest holders. A more collaborative environment should increase efficiency, effectiveness, and a stronger sense of worthwhile investment from all parties involved. The future accreditation system relies on interest holders being willing to engage in authentic partnerships and embrace a vision that promotes shared goals and national alignment.

ii. Collective stewardship

Interest holders are empowered to contribute to and shape the accreditation system. Shared commitment, decision-making, and accountability fosters resilience, adaptability, and a strong sense of shared purpose. A refreshed governance model and other formal mechanisms for incorporating diverse perspectives will ensure the system remains responsive and relevant to the needs of all. This also contributes to an increase in efficiency, effectiveness, and a strong sense of worthwhile investment from all parties involved.

iii. Transformative change

Interest holders foster a culture of continuous transformation and are active agents of innovation. They must be agile and adaptive to respond to the rapidly evolving engineering landscape. By embracing experimentation, learning, and a willingness to explore new approaches, interest holders can guide the system to evolve and improve over time, building on its strengths while effectively addressing emerging challenges.

iv. Outcomes-focused

Interest holders are committed to an outcomes-focused accreditation system. Decision-making focuses on ensuring that graduates possess the competencies required to begin the licensing process, while maintaining the balance between rigorous standards and practical relevance.

v. Proactive support

Interest holders have the necessary resources, guidance, and support to fulfill their roles effectively. This includes clearly defined responsibilities, comprehensive training, and ongoing support mechanisms to facilitate meaningful contributions to the system's success.

vi. Fairness

Interest holders must uphold fairness and equity for all system participants. This includes equitable treatment of programs in the design and application of accreditation criteria. There should be particular attention to ensuring fairness for those engaged in the FSCP Pilot Study and other initiatives undertaken to build the future system, recognizing their contributions and mitigating any potential risks or disadvantages for their involvement.

vii. Communication

Transparent and inclusive communication is vital for aligning all interest holders with the future system’s opportunities. By proactively sharing information, actively seeking and listening to feedback, and using diverse communications channels, interest holders can foster a shared understanding that drives collaboration and innovation to create a system that effectively meets evolving needs.

Recommendation 18 for the future direction:
Adopt the outlined core values to guide implementation of these recommendations.

Short-term actions: Early 2025

Contingent upon approval by the Engineers Canada Board of the direction laid out in the Path Forward Report and the accompanying recommendations, Engineers Canada should swiftly launch some early initiatives in early 2025 to sustain momentum and pave the way for later implementation stages. Early initiatives include:

i. Commit to outcomes-focused accreditation by eliminating AUs and minimum path.

The first step towards an outcomes-focused accreditation system is to remove use of the current input measures of curriculum content. This includes removing the use of AUs and transitioning to a temporary period relying on Graduate Attributes exclusively, until such time as the NARL is ready to take over completely.

The Graduate Attributes profile lacks specific definitions and expectations for foundational knowledge in mathematics, natural sciences, and engineering sciences. In the short-term, this gap can be addressed by building on the current definition of Graduate Attribute 1: Knowledge Base by using the existing definitions of these concepts as described in the CEAB Accreditation Criteria and Procedures book.

In the longer term, accreditation criteria related to Students (Section 3.3.) and Program environment (Section 3.5) must be reframed to focus less on inputs and more on desired outcomes. Engineers Australia, who emphasize outcomes and institutional flexibility to achieve compliance, provides a potential model.

Transitioning away from AUs may require meticulous planning and engagement with HEIs and regulators to ensure a smooth transition that maintains their trust in the accreditation system.

ii. Remove the faculty licensing requirements.

The removal of all AUs includes specified AUs, which removes the need for licensed engineers to teach engineering science and engineering design. HEIs can be given flexibility regarding the development of alternate ways for students to gain substantial and meaningful involvement with licensed professionals.

iii. Separate CEAB's policy-making functions from operational activities.

In keeping with best practices as well as bringing us in line with other jurisdictions, the policy and operational functions of the CEAB should be separated. A new policy committee should be created

with a mandate to co-design all future policy as strongly promoted throughout the FEA project. The remaining operational taskings should be maintained by a separate committee.

iv. Initiate a pilot study to evaluate how interest holders can leverage FSCP.

There was strong support for the concept of a pilot study from interest holders during the April Path Forward Co-Design Session. Engineers Canada should launch the FSCP pilot study in a timely and prudent manner to demonstrate the feasibility of integrating FSCP and NARL concepts within the accreditation and licensure systems for both CEAB and non-CEAB graduates. Guided by the FSCP Pilot Study Working Group Terms of Reference, the pilot study will evaluate various scenarios to inform the full development and implementation of the FSCP and NARL within the engineering ecosystem.

v. Create a co-design policy to guide transformation in the accreditation system.

To capitalize on the success of the co-design approach in advancing the FEA project, Engineers Canada should codify it into a formal policy. This policy would define the ongoing collaboration norms for interest holders, ensuring a consistent and inclusive approach moving forward.

The next steps of the project will require substantial planning. Detailed workplans for the other recommendations for system advancement will be developed starting in early 2025.

Long-term actions: 2025 and beyond

The Path Forward Report is not the end of the FEA initiative. In fact, it sets up the next phase of work to transition the accreditation system in 2025 and beyond. The Engineers Canada 2025-2029 Strategic Plan sets this work up under the strategic direction of:

> **Realizing accreditation and academic assessments**
> As part of the 2025-2029 strategic plan, we will support regulators in implementing a new national academic requirement for licensure. We will also transition Engineers Canada's associated tools as required. We will work with key interest holders to build an improved accreditation system that is flexible, adaptable, and valued by regulators, educators, students, and accreditation volunteers. In collaboration with regulators, we will develop a business case for a national intake and academic assessment process for internationally educated applicants for licensure.[29]

A high-level operational plan with key milestones was prepared in May 2024. This plan will become more detailed with specific tasks and timelines starting in early 2025.

[29] Engineers Canada, 2025-2029 Strategic Plan

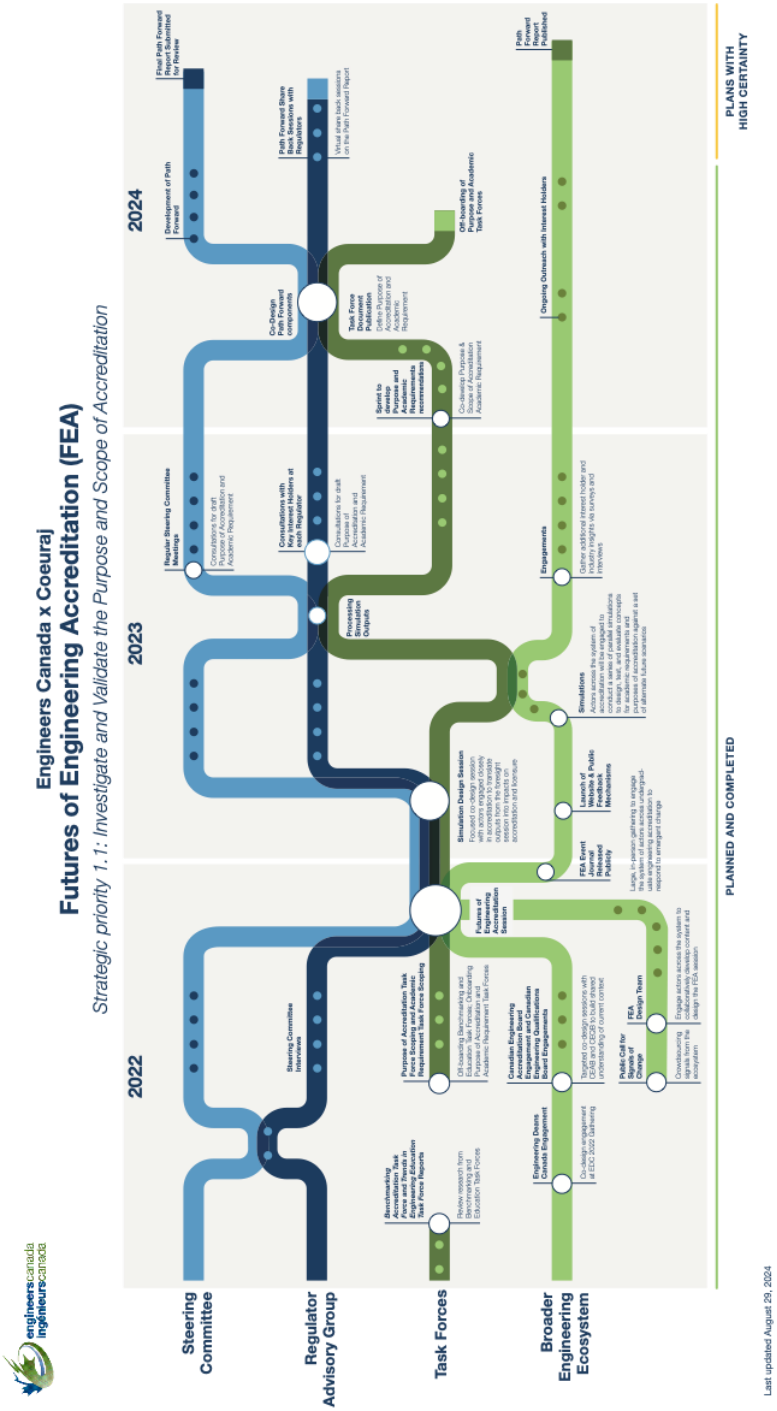
Glossary

Accreditation Unit (AU)	An academic credit granted for activities in which the associated number of hours corresponds to the actual contact time between the student and the faculty members, or designated alternates, responsible for delivering the program.
Co-Design	A framework and tool for situations where there is a diverse set of perspectives and a requirement for alignment across a varied, and complex, system. Encompasses five core principles, including the concept that people love what they design and own what they create. Also referred to as Collaborative Design.
Competence	The ability to perform a task, function, or role to a set of prescribed standards. Competence itself is not readily observable; it is inferred from the engineer's activities.
Competency	A demonstration of the knowledge, skills, experience, attitudes, values, abilities, and behaviours that enable an individual to complete a task.
Competency-based assessment	A methodology used to assess an applicant's readiness for engineering licensure. Applicants must demonstrate they have progressed to a professional level of competency in their field through engineering work experience.
Competency framework	An explanatory model that considers how engineers engage in their professional responsibilities, duties, and tasks. While not an assessment tool on its own, it helps define the standard against which the observable and demonstrable actions of all applicants can be measured and evaluated.
Engineering program	A framework strategically designed to provide students with the knowledge and competencies required to begin the process to be licensed as professional engineers in Canada, which may include a diverse range of courses, activities, or experiences. It is not exclusive to traditional undergraduate curricula at HEIs.
Experiential learning	An educational approach that emphasizes learning through direct experience and reflection. It involves actively engaging learners in real-world activities, challenges, and problem-solving to develop practical skills, knowledge, and critical thinking abilities.

	Experiential learning in engineering includes, but is not limited to, project-based learning, interactions with practising professionals, student exchange programs, and cooperative or internship experiences.
Full Spectrum Competency Profile (FSCP)	A competency framework with the potential to enhance Engineers Canada's accreditation review processes and support regulators in licensing professional engineers.
Iterative change	A process involving breaking down projects and goals into small steps and using repeated cycles of planning, implementation, evaluation, and adaptation to contribute to the cumulative outcome.
National Academic Requirement for Licensure (NARL)	A subset of competencies in the FSCP which CEAB graduates are expected to demonstrate upon completion of their programs.
Outcomes-focused accreditation	A quality assurance process that evaluates engineering education programs based on their demonstrated ability to produce graduates with specific competencies.
Peer Review	A quality assurance process that depends on experienced professionals to evaluate an engineering program against established standards. These peers provide complementary expertise to thoroughly assess the program's adherence to accreditation criteria. The process involves rigorous reviews, site visits, and feedback to promote continuous improvement and ensure the program meets the expectations for accreditation.
Program environment	The overall conditions, resources, and cultural factors that enable the quality of an engineering program. It encompasses elements such as faculty qualifications and morale, student engagement, administrative support, facilities, curriculum design, and pedagogical approaches.
Specified Accreditation Unit (AU)	Undergraduate engineering curriculum content that must be delivered by faculty members holding, or progressing toward, licensure as a professional engineer in Canada.
Standards-based assessments	An assessment method that evaluates applicants against predetermined standards and criteria. Note: This is not the same as "standardized assessment" which uses a consistent format, administration, scoring, and interpretation according to a specified plan.

Student exchange program	Engineering students enrolled at a CEAB-accredited HEI may complete a portion of their degree requirements at another institution.
Substantial equivalency	Achieving outcomes that whilst not individually identical to those of the standard or exemplar of that standard, taken cumulatively achieve the same overall outcome.
Transformative change	A dynamic, ongoing process that fundamentally restructures a system by building upon existing strengths and incorporating innovation. It involves an evolution driven by continuous adaptation and improvement, ultimately leading to more resilience, sustainability, and effectiveness. This process necessitates a departure from the status quo and demands a profound shift in mindset, values, and behaviours across the entire system.

Appendix A: FEA project journey map with milestones



Appendix B: CEAB thought paper – Reconsideration of specific AUs in the assessment of engineering programs

May 10, 2024

Annette Bergeron
Steering Committee Chair
Futures of Engineering Accreditation
via email: annettebergeron@gmail.com

Dear Annette,

RE: CEAB Thought Paper – Reconsideration of Specific Accreditation Units (AUs) in the Assessment of Engineering Programs

On behalf of the Canadian Engineering Accreditation Board (CEAB), I submit to the Futures of Engineering Accreditation (FEA) Steering Committee a thought paper titled "Reconsideration of Specific AUs in the Assessment of Engineering Programs" for consideration. The Paper was approved at the CEAB's April 13th meeting and was supported in principle by members of Engineering Deans Canada's (EDC) Deans' Liaison Committee (DLC) at their April 28th meeting.

EDC, a major interest holder in the accreditation system, has pointed to the specific AU criteria - the accreditation criteria requiring a minimum amount of curriculum content in Engineering Science and Engineering Design be instructed by licensed faculty - as a problematic constraint on curriculum design and delivery. Additionally, in their final report to the FEA Steering Committee, FEA's Benchmarking Task Force highlighted key differences between the Canadian undergraduate engineering accreditation system and the selected comparators. The Task Force concluded that other systems are less restrictive regarding licensure requirements of faculty and suggested that the necessity and reasoning for faculty licensure in accredited undergraduate engineering education be reviewed. Furthermore, FEA's Purpose of Accreditation Task Force identified 'Faculty qualifications' as a known gap between the current accreditation system and the desired future system under the revised purpose of accreditation and associated design parameters (Purpose of Accreditation Task Force document, pgs. 24-25). This issue was also explored at the April 17-18 Path Forward Report Co-Design session which I, along with other members of the CEAB Executive Committee, attended.

While the CEAB has paused all major accreditation policy-related work while the FEA initiative is underway to not duplicate efforts, the CEAB submits the Thought Paper to the Steering Committee as a potential way forward in the short-, medium-, and long-term as the project's final Path Forward Report is developed. The CEAB undertook this work in the absence of clear indication from the engineering regulators as to whether the importance of the interaction between engineering students and licensed faculty is still a relevant principle nor is there a clear understanding as to the outcome(s) that these interactions seek to achieve. Given the collective experience of CEAB members in evaluating engineering programs, applying criteria, and discussing the challenges experienced by interest holders in the system, members felt they were in a position to contribute to a reasonable and sustainable solution to this particular issue.

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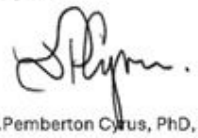
Please do not hesitate to contact me should you have any questions or wish to discuss the Thought Paper's contents and recommendations.

Regards,



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Attachment: Thought paper- Reconsideration of Specific AUs in the Assessment of Engineering Programs

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RECONSIDERATION OF SPECIFIC AUs IN THE ASSESSMENT OF ENGINEERING PROGRAMS

CURRENT SITUATION

Accreditation Criteria

The current accreditation criteria (Criterion 3.4.4) require a minimum of 900 AUs combined of Engineering Science (ES) and Engineering Design (ED). Of these 900 AUs, 600 AUs must be taught by instructors holding a license (P.Eng., LL) or pursuing licensure (EIT), as per criterion 3.4.4.1. Of these 600 AUs, a minimum of 225 AUs of ED must be taught by instructors who are licensed (P.Eng., LL) as per criterion 3.4.4.1. The AUs that must be taught by instructors holding, or progressing toward, a license are referred to as Specific AUs.

The minimum path criteria noted above have existed for many years, albeit with some refinements over time. The requirement for licensed instructors to teach ES and ED predates the introduction of the Graduate Attributes and Continual Improvement criteria (criteria 3.1.and 3.2), in particular the Professionalism graduate attribute which is defined as

> *Professionalism: An understanding of the roles and responsibilities of the professional engineer in society, especially the primary role of protection of the public and the public interest.*

While all instructors teaching ES and ED do not need to be licensed, in terms of Specific AU requirements, roughly 2/3 of the instructors need to be licensed (or pursing licensure) to meet current accreditation criteria. No Specific AUs are counted for courses that do not include ES and ED taught by individuals holding, or progressing toward, licensure, including courses that may discuss engineering Professionalism in a complementary studies course. Criterion 3.4.4.6 requires that the capstone design experience be completed under the supervision of a licensed project supervisor.

The HEI is given considerable latitude in defining Indicators and Assessment Tools that they will use to guide the development and assessment of the Professionalism graduate attribute.

Approaches to Teaching and Learning and the Role of Professional Engineer

The COVID pandemic accelerated innovations in approaches to teaching and learning, and the pandemic has significantly shifted thinking about traditional modes of teaching and learning, leading to questions about the continued use of instructor-student classroom and lab hours as an appropriate quantitative basis for curriculum content assessment. The Specific AUs follow from the traditional contact-hour based quantitative approach.

While not stated in the criteria nor in any official CEAB materials, one perspective advanced when the concept of Specific AUs is challenged is that by prescribing a set number of contact hours (on which AUs are based) between a professional engineer and student in the context of courses, that the students will develop a greater understanding of professional engineering and they will have a more professional outlook upon graduation.

If this perspective about the rationale for Specific AUs is reasonable, interactions between the licensed engineers and the students, in the context of the innovative approaches to teaching and learning, could be achieved in different ways, rather than relying on a measure that is anchored around contact hours. For example, an HEI could approach the Professionalism graduate attribute, with appropriate activities, indicators and assessment tools to ensure that a program is effective in developing the expected level of understanding of professional engineering among students and developing a culture of Professionalism among graduates.

Emerging Disciplines and Licensure

For some institutions, the nature of some of their programs, particularly those associated with emerging disciplines, does not align with conventional or more established engineering disciplines where licensure uptake is significant. In emerging disciplines, or in disciplines that intersect significantly with other professional disciplines, the individuals who can offer students the best education in areas that the CEAB considers engineering science and engineering design may be from disciplines for which licensure is difficult or impossible. The requirement that the instructors of capstone project courses be licensed (P.Eng., LL) may not lead to students having the most appropriate capstone project supervisor who may be an expert from an adjacent discipline.

This issue is likely to become more significant since major contemporary technological challenges (e.g., artificial intelligence, climate change, energy transition) and their technology solutions are multidisciplinary and beyond the traditional focus of engineering regulators.

Provincial Variations in Licensure of Faculty Members

Section 4.a of the Interpretative Statement on engineering licensure expectations and requirements (Appendix 3 of the Criteria and Procedures) states:

> *Faculty members who fall under criteria 3.4.4.1 and 3.4.4.4, and are within five years of their initial appointment to a faculty position at an academic institution in Canada are expected to:*
>
> *• Initiate an application for professional engineering licensure, or engineer-in-training/ing. jr. status, upon starting their faculty position.*
>
> *• Demonstrate continuing progress in meeting any conditions associated with achieving professional licensure (completing assessed examinations, obtaining experience, etc.).*

In some provinces, the teaching of engineering and university-based engineering research isn't considered to be the practice of engineering. As a result, faculty members who join HEIs in these jurisdictions directly from their Ph.D. studies or from outside of Canada face challenges in getting licensed. While some jurisdictions provide mechanisms for faculty members in disciplines adjacent to engineering to obtain a LL which qualifies them to teach Specified AUs in ES and ED, some jurisdictions do not provide for the LL designation.

Ontario, which has 17 HEIs offering accredited engineering programs, has discontinued using the EIT mechanism. Applications for licensure can only be initiated once the applicant has 4 years of professional experience. This precludes the faculty from teaching engineering science content during the time that they are acquiring the required professional experience. In addition, regardless of post graduate education or experience, only applicants with an undergraduate degree in engineering are eligible to apply for licensure which may preclude many faculty from ever being able to obtain licensure.

The accreditation criteria allow for faculty members to be licensed in any provincial jurisdiction. Professional engineering licensure in Canada, however, does not allow for practice across jurisdictions and doing so could lead to intervention by the regulator and potentially discipline of the individual practicing in a province without a license from the provincial regulator. Engineers Canada, through the CEAB Criteria, does not apply such a restriction or expectation in terms of licensure of faculty members. While there were reasons why such language was adopted in the criteria, having criteria that allow faculty members to register outside of their provinces to meet accreditation criteria, including for HEIs in provinces with regulators that consider the teaching of engineering to be the practice of engineering, is an odd provision to be promoted by Engineers Canada on behalf of the regulators. If part of the motivation for the criteria related to licensure is to have faculty model professional behaviour through licensure, it sets up a "do as I say, not as I do" type of role modelling.

Faculty members who unwillingly become licensed or who seek licensure outside of jurisdiction in which their HEI is located because of challenges in getting registered in their province, are unlikely to be evangelists for professional licensure in their interactions with students. In such cases, the issue of professional licensure likely works against the assumed objective of the existing criteria to develop a level of understanding of professional engineering among students and developing a culture of Professionalism among graduates.

The regulators asked the CEAB to affect changes in the accreditation process to facilitate international exchanges. These changes resulted in a pause on considering the students on international exchange as part of the minimum path assessment for the criteria related to Specific AUs. In effect, the licensure status of faculty members teaching students ES and ED on international exchanges was not an appreciable risk factor from the perspective of the regulators. If the temporary exemption is successful in terms of the measures used to assess the effectiveness of the exemption (i.e., the number of students going on international exchange significantly increases), a growing number of students in accredited programs will not

have the previous levels of interaction with licensed faculty members. Furthermore, internationally educated applicants for licensure are not educated in the context of Specific AUs.

Accuracy of Visiting Team Assessments of Specific AUs

The tools provided to HEIs to present their case for accreditation do not effectively deal with the matter of Specific AUs in a way that is consistent with the criteria. As a result, the visiting teams do not get an accurate accounting of the Specific AUs.

Section 7 of the Interpretative Statement on engineering licensure expectations and requirements (Appendix 3 of the Criteria and Procedures) states:

> *For duplicate sections all instructors must meet the licensure requirements in order for the AU to be counted. If the course is team-taught then it must be clear that the engineering science and engineering design components are delivered by faculty holding professional engineering licensure. In some cases, for team-taught courses, a fraction of the total AU could be claimed.*

The instructions to institutions with respect to the individuals to list in the CIS forms, which drives all other tables in the accreditation documentation, states *"Please list the most appropriate instructor to act as course contact"* and the licensure status of this instructor is taken to determine whether the ES and ED AUs for the course will be considered to be Specific AUs. All other instructors are listed below the course contact but the Specific AU columns in the data tables are generated solely based on the licensure status of course contact without regard for the licensure status of these other instructors, even when these other instructors are considered to be teaching on the minimum path (i.e., they have their own dedicated sections of the course and the students in their section have no involvement with a licensed instructor).

In order to reflect the accurate minimum path, the HEI needs to list the unlicensed instructor as the *"most appropriate instructor"*. Furthermore, in the case of team-taught courses (as per Section 7), there isn't a mechanism for the HEI to apportion the ES and ED AUs among licensed and unlicensed instructors.

These limitations will not be addressed in the new Tandem implementation. While work-arounds may present a more accurate accounting of Specific AUs, these work-arounds are time consuming for the HEIs. Also, the verification of individual ES and ED course instructor's status, is not a good use of program visitor time for an issue that does not appear to be an appreciable risk factor for the regulators.

Finally, the drop down box on the CIS which registers the licensure 'status' only provides the following options: P.Eng., EIT, ing, ingJr, LL, P.Geo, and None. No option is available to indicate and demonstrate that progress toward licensure is taking place. If the regulator database is checked, which would identify individuals who have some form of license, individuals who have applications in process would not appear. In short, the HEI cannot generate and the visiting

teams cannot assess AU tables that reflect individuals who are progressing toward licensure except where they hold EIT status.

As a result of these issues with tools provided to the HEI, inaccurate AU tables are being generated and reviewed by the visiting teams and the conclusions drawn about compliance with Specific AUs criteria are not reliable. While a visiting team can cross-validate the AU tables (i.e., verify the Specific AUs using Sheet 4.1 in Spreadsheet 6C), this is a time-consuming process that brings a visiting team into conflict with an HEI which has prepared the materials in accordance with the instructions and using tools provided. For example, visiting teams often encounter the misperception that as long as the capstone course coordinator, who may have no involvement with students, is licensed, the licensure status of the project supervisors does not matter. When the HEI prepares a CIS for the capstone course and indicates the licensed faculty member as the "course contact", the Specific AUs for that course are automatically populated on the overall AU tables in Spreadsheet 6C counting the AUs as Specific AU. In doing so, the HEI is following the instructions provided. If the work of the visiting team determines that the named course instructor on the CIS for the capstone was merely 'coordinating' the course and not interacting with the students in a manner that supported the Specific AUs claim there would need to be manual adjustments to the AU tables at the visit.

LOOKING FORWARD

In light of the current situation, reconsideration of the Specific AUs as a means to measure exposure to professional engineers is appropriate. The CEAB should endorse the principle that engineering programs must have substantial and meaningful involvement of licensed professionals in the education of future professionals.

Given the confluence of factors that are working against the status quo for Specific AUs, namely changes at regulators with respect to pathways for licensure of faculty members who are educated outside of Canada, the lack of recognition of faculty members' research and teaching as engineering practice, new programs that are outside of the conventional disciplines where there is a culture of licensure, a lack of understanding of the regulation of emerging disciplines, and innovations in approaches to teaching and learning that have been accelerated by the pandemic, the existing accreditation criteria related to the role of the professional engineer in the instruction of student should be interpreted by visiting teams and the CEAB in a manner that allows HEIs to have more flexibility with respect to mechanisms to facilitate substantial and meaningful involvement of licensed professionals in the engineering education process.

The HEIs should be given an opportunity to be creative and innovative in how they use this flexibility on a minimum-path basis for their programs. The onus would be on the HEI to provide convincing evidence of the outcome to visiting teams. Such mechanisms must be auditable by visiting teams and demonstrate, on a minimum path basis, that the graduates have developed the expected level of understanding of, and commitment to, Professionalism.

Given the issues outlined above with respect to increased challenges for faculty members to achieve licensure, as well as the limitations of the accreditation tools for the presentation and assessment of Specific AUs in the context of accreditation visits, enforcement of the Specific AUs criteria and the requirement for the capstone experience to be supervised by a licensed instructor should be temporarily suspended. These criteria could be reconsidered when there is clarity from the FEA process with respect to the role of the licensed engineer in the education of students and when the visit materials are adjusted to address known deficiencies.

RECOMMENDATIONS TO THE CEAB

(1) The CEAB should endorse the principle that engineering programs must have substantial and meaningful involvement of licensed professionals in the education of future professionals.

(2) The CEAB and visiting teams should interpret existing accreditation criteria related to the role of the professional engineer in the instruction of student in a manner that allows HEIs to have more flexibility with respect to mechanisms to facilitate substantial and meaningful involvement of licensed professionals in the engineering education process.

(3) The CEAB must require HEIs, on a minimum path basis that is auditable by visiting teams, to demonstrate that graduates have developed the expected level of understanding of, and commitment to, Professionalism. The current criteria Specific AUs criteria (3.4.4.1, 3.4.4.4, 3.4.4.6) is one way to achieve this requirement.

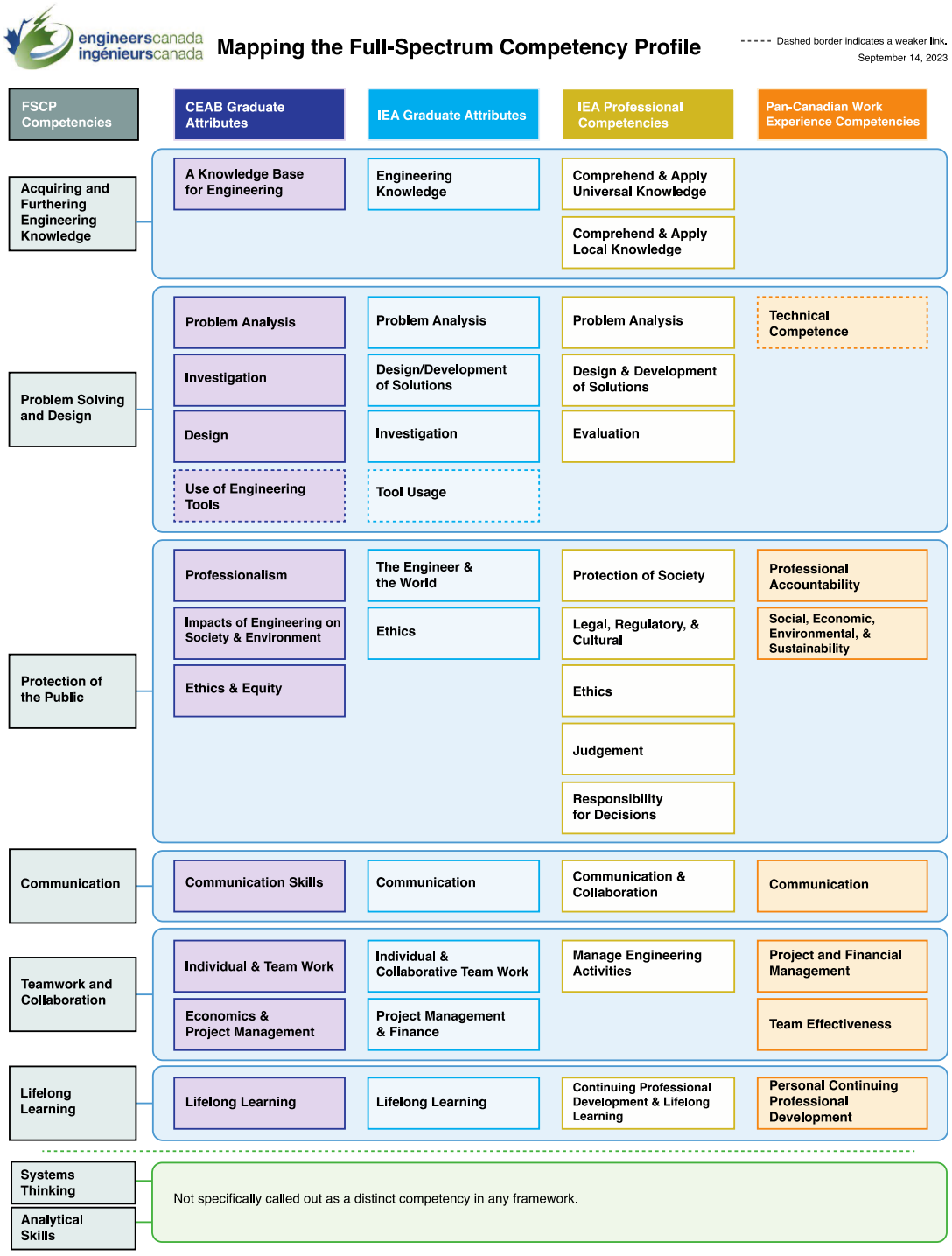
(4) The CEAB should temporarily suspend enforcement of Specific AUs criteria (3.4.4.1 and 3.4.4.4) and the requirement for the significant design experience to be conducted under the professional responsibility of licensed faculty (3.4.4.6).

(5) The CEAB should recommend to the FEA Steering Committee that the Committee include recommendations in their Path Forward Report regarding the license requirements of faculty in criteria 3.4.4.1, 3.4.4.4, and 3.4.4.6, and regarding the development of alternate ways for HEIs to demonstrate that students enrolled in engineering programs have substantial and meaningful involvement with licensed professionals.

(6) The CEAB will re-evaluate recommendations 2, 3 and 4 by June 2027 with a view to making a recommendation on its future status to the Engineers Canada Board, unless otherwise instructed to do so at an earlier date. Any re-evaluation will take into consideration the outcomes of Engineers Canada's 2022-2024 Strategic Priority 1.1.

Endorsed by the CEAB: April 13, 2024

Appendix C: Mapping the FSCP



Appendix D: Terms of Reference - Full Spectrum Competency Profile Pilot Study Working Group

Draft Terms of Reference - Full Spectrum Competency Profile Pilot Study Working Group

Mandate

The Mandate of the Full Spectrum Competency Profile (FSCP) Pilot Study Working Group will be to complete a pilot study examining a subset of the competencies from the proposed FSCP, including some from the National Academic Requirement for Licensure (NARL). The pilot is being proposed as one of the next steps in the Futures of Engineering Accreditation (FEA) project, and these Terms of Reference will be included in the FEA Path Forward Report.

For context, a pilot is a small-scale, short- to medium-term study that helps an organization learn how a large-scale project might work in practice. It is an opportunity to test the design, functionality, and feasibility of a solution before committing significant resources to a full-scale implementation. The results of a pilot study are used to identify any adjustments needed to improve the project's efficiency and feasibility at full-scale implementation. It's a crucial step in project management to ensure the success of the larger, full-scale project.

Purpose

The purpose of the pilot study will be to:

- Understand the effort required to the define FSCP competencies,
- Explore appropriate process(es) to assess the FSCP competencies, and
- Document learnings and recommendations for future full-scale implementation of the NARL and FSCP.

Working Group Objectives

1. **Identify** a subset of competencies from the proposed FSCP to be further defined and piloted through implementation. Competencies shall be selected across the core competency domains, and at least one of the identified competencies should fall outside of the sixteen competencies proposed within the NARL. It is suggested that the working group make use of tools such as a Job-Task Analysis Approach to select competencies that are highly relevant to all professional engineers (i.e. – they are both used frequently and are critical to safe practice). Document and report the rationale used in selecting the competencies.

2. **Define** the identified competencies such that they can be assessed in a fair and defensible manner and in a way that meets the needs of the engineering practice in Canada, as proposed by the FSCP. Each identified competency will need to be defined such that it can be assessed according to Miller's Pyramid of Assessing Competence, per Figure 1:

Figure 1: Miller's Pyramid of Assessing Competence[1]

The following steps will be used in defining each identified competency:

- First, develop a **competency statement** that provides a wholesome description of the area of competence (for example, what is meant by 'math'?).
- Next, develop a **description** of what it means to be competent in the area (what does it mean to be competent in 'math'?).
- Thirdly, develop a list of **indicators**: discrete, observable outcomes of actions that demonstrate competence (how will an individual demonstrate competence at each of the 'knows how' and 'does' levels?).

Document and report the considerations made in defining the competencies and provide an overview of the level of effort and amount of time required to complete the definition of each competency.

3. **Create** assessment process(es) for the selected competencies. The process(es) must be clear, output-based and must be implementable by higher education institutions (HEIs) and engineering regulators to assess an individual at both the 'knows how' and 'does' level of Miller's Pyramid of Assessing Competence. The process(es) must include what information is to be provided by applicants for assessment. Demonstrate how the process(es) establish that the individual is ready for practice (if assessing at the 'knows how' level) and licensure (if assessing at the 'does' level). Document and rationalize the considerations undertaken in establishing the assessment process(es) and describe the level of effort required to develop the process(es).

4. **Build** a plan to pilot the identified competencies and indicators in a manner that:
   - will assess both CEAB and non-CEAB applicants,
   - will be conducted by both HEIs and engineering regulators (as applicable),
   - assesses enough applicants to enable outcomes testing, and
   - includes geographical diversity across Canadian jurisdictions.

[1] Miller, G. E. (1990). The assessment of clinical skills/competence/performance. Academic Medicine, 65, S63-S67.

- The plan must also include an estimate of resources required to complete the pilot project.

Document and rationalize the considerations made in designing the pilot study, the parameters of individuals to be considered for assessment, how the selection of the test population enables the testing of outcomes, describe how outcomes are to be tested, summarize the level of effort required to design the pilot, and make a prediction of how much effort would be required to develop a full-scale trial for a given Canadian jurisdiction.

5. **Oversee** the execution of the pilot study. Ensure that it is completed such that objectives 1-4 can be met. Ensure that the amount of time and level of effort required to assess the selected competencies used is documented.

6. **Report** the pilot findings. Provide a Pilot Study Report to the FEA steering committee (or its successor), using the following format:
   - Part 1: Introduction and Background
   - Part 2: Selection of Competencies for Piloting (see objective 1)
   - Part 3: Defining the Competencies (see objective 2, include the definitions of the selected competencies and indicators as an appendix)
   - Part 4: Assessment process(es) (see objective 3, the processes for both engineering regulators and HEIs shall be included as an appendix)
   - Part 5: Pilot design (see objective 4)
   - Part 6: Results of Outcomes Testing
   - Part 7: Analysis and Findings
   - Part 8: Recommendations
   - Part 9: Conclusions

Authority and Decision-Making

In fulfilling its mandate, the Working Group is tasked with the six objectives defined above. In completing their objectives, the Working Group will be required to make decisions in:
- selecting the competencies to pilot,
- defining the competencies and associated indicators such that they can be assessed in a defensible manner and in a way that establishes competence,
- creating assessment processes, developing a plan to pilot the selected competencies and processes,
- overseeing the execution of the pilot study, and
- reporting recommendations.

To assist in decision-making, the following levels of responsibility will be assigned:
- The FSCP Pilot Study Working Group is deemed to be **responsible** to make decisions on the above topics while rationalizing and documenting their considerations.
- The FEA Steering Committee (or its successor) is **accountable** for the pilot study. As such, the FSCP Pilot Study Working Group is accountable to the FEA Steering Committee (or its successor). When the working group proposes that an objective has been completed, it

shall report to the FEA Steering Committee (or its successor) for approval prior to documentation being disseminated to interest holders.

- However, additional interest holders may be **consulted** at the discretion of the working group in achieving their objectives.
- Engineers Canada leadership, the Canadian Engineering Accreditation Board (CEAB), the Canadian Engineering Qualifications Board (CEQB), and the Canadian engineering regulators will be kept **informed** of the pilot progress throughout the project.

Working Group Membership

The composition of the FSCP Pilot Study Working Group is intended to encompass the majority of interest holders of the FEA project but remain limited in size so as not to slow progress. Therefore, the following members will be engaged in the FSCP Pilot Study Working Group:

- Engineers Canada Staff
- At least one representative from the FEA Academic Requirement Task Force
- At least one representative from the FEA Purpose of Accreditation Task Force
- A psychometrician
- One representative from each of the CEAB and the CEQB
- If not already represented through the task forces and boards, a minimum of two representatives from HEIs must be included
- If not already represented through the task forces and boards, a minimum of two representatives from engineering regulators must be included
- If possible, at least one Industry representative
- Optional: a representative of recent engineering graduates

Time Commitment

It is expected that the work of the FSCP Pilot Study Working Group will begin after the publication of the Path Forward report and will conclude in **late 2025**. During this period, the working group will be required to meet at least monthly and be asked to review materials between meetings. The working group will participate in its own meetings, ongoing communications, and discrete events. Requests for additional resources or time extensions will be communicated as early as possible.

Appendix E: Change management considerations

What is change management?

Change management is the intentional process through which an individual or group shepherds a system through the experience of change in service of a specific intended outcome. Change management tools and principles can be applied both in the context of planned change (e.g., restructuring an organization or rolling out a new technology platform) or more emergent change (e.g., responding to external shifts in a market or operating environment). Change management is a broad field of practice with a diverse range of perspectives, strategies, approaches, and tools suited for different kinds of organizational and change contexts.

Focus of change management: Operational processes and human processes

There are two main areas that require focus and investment during a change process—the sequence of tactical steps that **move from the current state to the desired future** state (e.g., design and deployment of new policies and procedures, design and roll-out of new roles), and the **emotional and psychological experience of change**. Effective change processes must simultaneously engage in both aspects to achieve meaningful and sustainable results.

Moving toward the desired future state: This aspect of change management is the most familiar to many people. It entails considering the operational aspects of the planned change, which can begin by answering a series of basic questions **(Figure 2)**. Many change management models, like Prosci's ADKAR model, are designed to support this aspect of a change process.

PLANNING FOR OPERATIONAL CHANGE

1. What is the vision of the future we seek to achieve, and what impact will it have on our system?
2. What steps will we take, and in what order?
3. Who is responsible for what?
4. What resources do we need?
5. How will we know we are on the right track?
6. How will we adapt and pivot as the work unfolds?
7. What do we need to learn as the process unfolds?
8. What do we need to learn as the process unfolds, and how will those learnings be applied?
9. Who are the different interest holder groups who are affected by this change? How will we engage them and communicate with them?

Figure 2: Questions to plan for operational change[2]

[2] Developed by Julia Monaghan, Coeuraj.

Managing the emotional and psychological experience of change

Equally important to managing change effectively is recognizing and supporting the individual emotional and psychological experiences of change that will occur throughout your system. People within a system exhibit varying tolerances for and responses to change. Ignoring these individual experiences is a major driver of resistance and ultimately undermines change efforts. The William Bridges Transitions model addresses the human experience of change by acknowledging and respecting the spectrum of emotions it can trigger, including grief, loss, anxiety, uncertainty, confusion, fear, hope, and excitement.

Doing this work effectively requires a different approach and skillset than managing the operational aspects of change. Instead, this work requires organizational and change leaders to demonstrate empathy, vulnerability, and openness, and be willing to create space for open dialogue and acknowledgment of the real human impacts of change as the work unfolds.

Principles for effectively managing the change ahead

Building on the co-design process used during the FEA project, the following are a series of core principles that can underpin the change management work that will come next.

i. Participation, shared ownership, and individual agency

One of the five core principles of a co-design approach is that people love what they design and own what they create. This concept is as relevant for the change management process as it has been for the co-design process. Having a highly participatory change management process where interest holders from across the engineering ecosystem can meaningfully influence change processes and outcomes means:

- The people closest to the work and who know it best can inform how the change unfolds, leading to more responsive solutions.
- Individuals can influence the changes that impact them, resulting in less change resistance, anxiety, and ambiguity.
- Contributors are building shared ownership in the outcomes of the work, fostering more effective implementation and sustained success.

ii. Equity and inclusion

Many of the systems and structures that exist today do not serve all interest holder groups equitably—either by design, or because key voices (e.g., Indigenous Peoples, other people of color, members of the LGBTQ community) were not engaged in their development. Large-scale systemic changes, like the one the Canadian engineering ecosystem is about to embark on, are an important opportunity to address these imbalances and create systems that serve everyone. As part of a change process, it is therefore important to understand the ways that current systems and

structures uphold or perpetrate harm, and to be intentional about inviting voices that have been underserved or marginalized to be part of shaping how the work unfolds.

iii. Ongoing, open, and transparent communication

In the absence of information, the human brain will create its own narratives to fill in knowledge gaps. Often, these narratives are more reflective of fears and anxieties than hopes and aspirations—meaning that lack of information can be a key driver in escalating change resistance. Consistent, transparent, and robust communication about what is being done, and why, results in:

- Overall awareness and engagement: When considering how to move different cohorts of interest holders along the FEA Commitment Framework **(Figure 2)**, effective communication is an important way to ensure various groups are primed to engage in their piece of the change process.
- Reduced anxiety due to ambiguity: Greater certainty by change leaders about the process strengthens resilience in the face of other, more uncertain aspects of the work.
- Trust in decisions: Understanding the rationale behind a decision, even if it differs from personal preferences, can foster acceptance and support.

iv. Iteration, adaptation, and measurement, evaluation, and learning

Any change effort can benefit from an iterative approach, and this is even more critical for large-scale, system-wide changes like the one ahead of the engineering ecosystem in Canada. Such transformative change requires continuous adaptation and evolution to account for the interplay of various system components. Working iteratively is also one way to build momentum in a change process by delivering early successes to interest holders.

No matter how meticulous and inclusive the planning process, unforeseen challenges and complexities are inevitable when implementing new processes, policies, or roles. Working in cycles or sprints, piloting ideas before rolling them out at scale, and gathering feedback along the way is critical to ensuring that the change effort achieves its intended outcomes by creating space to learn and adapt.

Using measurement, evaluation, and learning (MEL) processes in complex, multi-interest holder projects provide a structured approach to tracking progress, identifying areas for improvement, and fostering collaboration. Effectively measuring, evaluating, and learning from interest holders throughout each phase of a project is imperative to success because it ensures that all perspectives are considered and addressed. Relationships, knowledge, and support between interest holders in complex projects are not linear and therefore require flexibility and adaptability. Ongoing observation and evaluation of qualitative aspects, such as an interest holder's knowledge, attitude, and position, can offer nuanced insights into their perspectives. This enables the project team to be responsive and shift plans and activities accordingly, ensuring interest holders are included and consulted throughout a project's journey. Measurement and evaluation can assess what has been done, what still needs to be done, and how to do it better. By maintaining strong,

adaptive relationships and continuously integrating interest holder feedback, MEL supports long-term adoption of change and helps to build the trust and cooperation necessary for sustained success.

Measurement, evaluation, and learning for FEA

The engineering ecosystem comprises diverse interest holders, and the FEA project engaged hundreds of participants, each with unique perspectives on engineering education, accreditation, and licensure.

The FEA's 2022-2024 Commitment Framework **(Figure 3)** guided ongoing observational analysis and data collection processes throughout the project stages until now, facilitating continuous learning and evaluation. This framework was developed by the project team to:

- determine if engagement activities and efforts were being directed efficiently and in alignment with the engagement strategy.
- assess how an interest holder might have moved up or down the commitment framework.
- identify any changes to the current project strategy and inform the detailed designs for engagements with specific interest holders.

A new framework will need to be developed to measure progress based on what the work in 2025 and beyond will need to achieve. A similar commitment framework will be critical for understanding interest holder support as the Path Forward Report's recommendations are implemented. The commitment levels and corresponding indicators will need to be updated based on the needs of the project team and their metrics for success.

FEA's 2022-2024 Commitment Framework

Commitment Statement: Each stage of the commitment framework represents an Interest holder's evolving sentiment with the respect to the following statements:

1. We believe that a national academic requirement is necessary for licensure as a professional engineer.
2. We acknowledge that the current system of establishing academic qualifications requires change to appropriately reflect needs of engineers of the future.
3. We recognize the need for the purpose of accreditation to evolve, reflecting the alignment of all interest holders.
4. We are ready to co-create, and take ownership of, practical recommendations for changes to the system of establishing academic qualifications.

COMMITMENT LEVEL	DESCRIPTION	EXAMPLE INDICATORS
Introduction "Something is happening"	Interest holder has been reached out to and communication is established. They are introduced to the existence of the project but do not understand much about its aims or scope.	• Initial meetings with interest holder is requested and accepted. • Interest holder groups have received information concerning the project through appropriate channels and a corresponding increase in website traffic is observed.
Awareness "I get what is happening"	Interest holder is aware that a project is underway to examine and consider the role of academic requirement in licensure for professional engineers.	• Interest holder has attended introductory engagement and shows interest in further conversations/meetings. • Interest holder is reaching out via the website survey, contact email, or other channels. • Increase in subscriptions for "Accreditation Matters"
Understanding "I understand the change and the impacts for myself and others"	Interest holder is aware of the project's aims and scope, that it may result in changes to the current system of accreditation, and how those changes may impact their work.	• Interest holder can speak to their understanding of key elements of the project scope and goals. • Interest holder does not require much "context setting" discussions at this point • Interest holder (via appropriate channels) is asking "probing" questions regarding the project's aims and process, e.g. asking questions that refer to specific messages and statements in our communications. • Asking questions that question assumptions or ask about "roles and responsibilities" or "workloads" • "how will that work", "who will do it", "what's in it for us", etc.
Attraction "I like this idea"	Interest holder sees potential benefits for themselves, and/or others. Their perception of the project and process is open and positive.	• Interest holder can speak to a value proposition they see within the project and often appear to focus on it. • Interest holder advocates for the project and process in conversations with other interest holders. • Interest holder is eager to provide time/resources to participate with the project engagements.
Intent "I support this"	Interest holder has expressed alignment with the project goals and express a desire to contribute towards the development and implementation of path forward recommendations.	• Refer to and express support of the process and/or the Path Forward recommendations in their own documents and meetings (i.e., not "project" meetings)
Partnership "We will make this happen"	The interest holder is working in collaboration with other groups to co-develop policies and processes to implement on path forward recommendations.	• Interest holder is independently reaching out to other groups to arrange meetings and discuss ideas related to the project and implementation of the Path Forward report.

Figure 3: FEA's 2022-2024 Commitment Framework. It will be refreshed for the work in 2025 and beyond.

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Appendix A2

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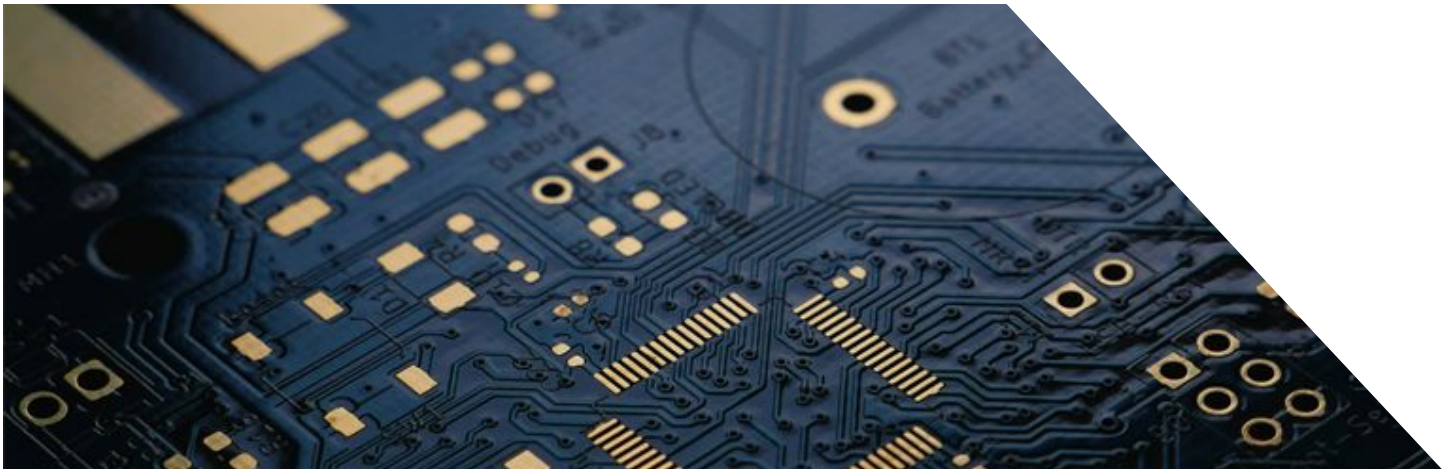
accreditation

Academic Requirement document

Futures of Engineering Accreditation



March 2024

Prepared for: Engineers Canada

Prepared by: FEA Academic Requirement Task Force

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Contents

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About this document

We are pleased to share this document outlining the Futures of Engineering Accreditation (FEA) project's draft concept for a Full Spectrum Competency Profile (FSCP) and a National Academic Requirement for Licensure. This document was written by FEA's Academic Requirement Task Force and represents ideas and feedback the project has collected from its research and engagement with interest holders over the past two years.

The project team is grateful for the enthusiasm shown by interest holders across the engineering ecosystem and for their invaluable contributions.

This document, together with its counterpart: the Purpose of Accreditation document, provides a comprehensive overview of the draft FEA concepts at their current stage of development. This document and its contents represent work in progress.

In April 2024, a collaborative design session was held with members of the CEAB Executive Committee, CEQB Executive Committee, the FEA project Steering Committee and Regulator Advisory Group (RAG), Engineering Deans Canada (EDC), and other colleagues to review the draft concepts presented in this document and the Purpose of Accreditation document and discuss how their implementation would impact the engineering ecosystem.

The concepts will see future iterations based on continued engagement with interest holders. This work will be reflected in the final Path Forward Report, which will present the concepts in more detail and recommend approaches for their implementation.

As always, if you would like to get in touch with the FEA project team, please email fea@engineerscanada.ca. For comments or ideas about the project, please use this submission form, available for the project's duration. Submissions are reviewed by the project team and collected as valuable feedback.

Sincerely,
The FEA Project Team

Executive summary

The Futures of Engineering Accreditation (FEA) is an initiative by Engineers Canada, and part of its 2022-2024 Strategic Plan. The objective of the FEA is to leverage the insights, perspectives, and expertise of members of the Canadian engineering ecosystem to examine the current accreditation system, understand how it is serving contemporary needs, and consider how it can chart a new path for the future of the engineering profession.

Since its creation in 1965, the Canadian engineering education accreditation system has supported Canadian engineering regulators, been recognized as substantially equivalent under international mutual recognition agreements and has mentored accreditation bodies across the globe. Significant changes in engineering practice and engineering education have occurred over this same period, prompting the timely need to consider implementing a standard academic requirement that is appropriate and feasible for all graduates pursuing licensure in the profession.

Part 1 of this document introduces the Mandate of the FEA Academic Requirement Task Force to investigate the establishment of an academic requirement for licensure that applies to all applicants.

Parts 2 and 3 explain the Need for Change in the Accreditation System and the Significance of Substantial Equivalency. There are pressing challenges due to the different approaches for assessing Canadian Engineering Accreditation Board (CEAB) and non-CEAB graduates, and risks to the fairness and equivalency of the processes.

Parts 4 and 5 introduce the Full Spectrum Competency Profile (FSCP) and how it functions as an assessment framework. An FSCP specifies the knowledge, skills, and attributes required for proficient practice within a profession. The proposed FSCP for engineering in Canada encompasses 34 competencies divided into eight domains and is designed to span the entirety of an engineer's career journey, from undergraduate studies to post-licensure practice. Appendix A features an image providing an overview of the eight competency domains and the 34 competencies.

Part 6 refines the 34 competencies of the FSCP into a subset of 16 essential competencies that comprise the proposed National Academic Requirement for Licensure (NARL). These are intended to be acquired through an engineer's academic training and determined by the point of graduation, serving as foundational skills necessary for advancement into post-graduate stages of professional development. Appendix A delineates the specific 16 competencies that constitute the national academic requirement.

Part 7 encompasses the Insights from Project Engagement and Research to provide the necessary support for the formulation and implementation of both the FSCP and the NARL.

Part 8 identifies the Gaps that could hinder support for the FSCP and NARL and provides Recommendations for resolving them.

Part 9 summarizes the Next Steps of the project and explains how the information presented in this document will guide the next phase of work, including the development of the Path Forward Report.

1. Mandate of the Academic Requirement Task Force

The Futures of Engineering Accreditation (FEA) is a multi-year strategic priority in Engineers Canada's 2022-2024 Strategic Plan, encompassing several distinct phases of activity. Refer to Appendix C for a comprehensive overview of the project.

In the current phase of the project, two separate task forces are working concurrently. The Purpose Task Force is focused on either validating the current purpose of accreditation or establishing a revised purpose.

Meanwhile, the Academic Requirement Task Force has been mandated to investigate the establishment of an academic requirement for licensure that applies to all applicants.

The efforts of both task forces are complementary and will contribute to determining the path forward for accreditation.

Members of the Academic Requirement Task Force as of March 2024:

A. Sidiq Ali, MEd PhD CE, contributing psychometrician
Michel Couturier, PhD, FEC, P.Eng.
Gary Faulkner, PhD, P. Eng.
Suzanne Kresta, P.Eng., FEC, FCAE
John Newhook, Ph.D., P.Eng., FCAE, FCSSE, FCSCE
Jason Ong, visiting contributor on behalf of the Regulator Advisory Group
Dennis Peters, Ph.D., P.Eng., FEC, SMIEEE (Chair)
Aaron Phoenix, P.Eng., visiting contributor on behalf of the Regulator Advisory Group
Malcolm Reeves, FEC, P.Eng., P.Geo, FGC, FCSSE, CGeol
Christopher Yip, PhD, P.Eng, F.AAAS, FEIC
André Zaccarin, ing., Ph.D.

2. The need for change

As a regulated and licensed profession, engineers must exhibit the requisite academic and experiential credentials to practise. Canada's twelve provincial and territorial engineering regulators are responsible for establishing admissions standards to the profession, which aim to safeguard the public by issuing licenses only to those deemed competent.

Academic qualifications are one of five criteria for licensure yet there is no defined standard, let alone one that is nationally agreed upon by all twelve engineering regulators.

Currently, regulators lean on the Canadian Engineering Accreditation Board's (CEAB) accreditation framework to ascertain that graduates from accredited programs meet the academic prerequisites. The CEAB's criteria encompass five broad input categories and twelve graduate attributes, while leaving individual engineering programs to shape their own curricula and determine teaching content.[1]

Regulators rely on syllabi created by the Canadian Engineering Qualifications Board (CEQB) as part of the assessment process for evaluating the academic credentials of non-CEAB applicants. These syllabi are meticulously structured based on the curricula of accredited programs. Intended to serve as a benchmark to maintain consistency in academic standards, regulators use the syllabi as an indicator about whether non-CEAB applicants have had exposure to similar content and inputs as the graduates of CEAB-accredited programs.

While the accreditation system and syllabi endeavour to establish an academic standard, a significant risk persists due to the absence of a clear definition of the essential components of an academic requirement for licensure. This gap introduces vulnerabilities into both the accreditation and licensure systems, raising concerns about the robustness and defensibility. Without a precise definition, the current system cannot delineate the necessary knowledge for safe practice and fails to provide assurance that applicants from different academic backgrounds all fulfill the safety expectations.

APEGA's 2019 study, *An Evaluation of Assessment Processes for Engineering Licensure in Alberta: Implications for a National Entry-to-Practice Examination,* strongly underscored the need to create and adopt a national engineering competency profile.[2] The report highlighted that establishing such a profile is the most important step for integrating the various phases of an engineer's professional journey by ensuring the quality and comprehensiveness of evaluation processes across all stages. A clear framework of the knowledge and abilities of a competent practitioner enhances the validity and transparency of evaluations and creates a standardized benchmark against which to assess foreign trained applicants. Furthermore, the adoption of this competency profile establishes the expectations for evaluations at every stage of an engineer's career, including defining

[1] As described in the *CEAB's 2023 Accreditation Criteria and Procedures* https://engineerscanada.ca/sites/default/files/2023-12/Accreditation_Criteria_Procedures_2023.pdf

[2] Prepared for APEGA: Sadesky, G. (2019). An Evaluation of Assessment Processes for Engineering Licensure in Alberta: Implications for a National Entry-to-Practice Examination.

content requirements for program accreditation, evaluating work experience, conducting national examinations, and setting expectations for continuing professional development.

The implementation of a new NARL would bolster the accreditation and licensure systems' defensibility, fostering greater consistency in academic qualifications. It would promote greater accessibility to the profession by contributing to streamlined evaluation procedures that are less dependent on the origin of an applicant's education and facilitate professional mobility. It would also enhance the integrity of the engineering profession and inspire public trust by showcasing a dedicated commitment to excellence and competency.

3. The significance of substantial equivalency

The need for substantial equivalency in the system is rooted in ensuring equitable access to the profession. With the growing number of internationally trained graduates and increased attention on government-led fairness reviews, it is essential to ensure the assessment of all CEAB and non-CEAB graduates are founded on similar standards and procedures that follow principles of equity and fairness. The current system poses risks for transparency, timeliness, reliability, and consistency.

The provincial/territorial regulators are responsible for ensuring only qualified applicants are granted licensure. However, the absence of a NARL means that they have adopted their own individual assessment methods. Although many jurisdictions have moved towards Competency Based Assessment (CBA) systems, there is still a substantial gap in the harmonization and consistency of assessment practices domestically across Canada. These disparities not only create confusion for applicants, industry groups, and the public, but they also affect the mobility of professional engineers between regions and present opportunities for fairness challenges.

In 2022, in support of the need for substantial equivalency, the CEQB released the *Feasibility Study: Methods of Academic Assessment for Non-CEAB Applicants for Licensure*. The report proposed "expanding the current Core Engineering Competencies into a full competency profile that covers academic and experience entry-to-practice requirements".[3] The full competency profile would provide increased flexibility and fairness for non-CEAB applicants for licensure, improving transparency and confidence that applicants are evaluated against a common entry-to-practice standard.

[3] Prepared for the CEQB: Johnson, K. and Johnson G. (2022). Feasibility Study: Methods Of Academic Assessment For Non-CEAB Applicants For Licensure. (p.34).

Implementing a NARL would promote substantial equivalency by providing a cohesive framework for the twelve provincial and territorial engineering regulators to conduct assessments, irrespective of applicants' academic backgrounds. It would satisfy the need to balance regulators' mandate to protect public safety while maintaining flexibility in licensing qualified applicants without subjecting them to unnecessary barriers.

The establishment of a NARL can support fundamental principles outlined in Engineers Canada's policy guideline, *Regulators Guideline on the Academic Assessment of Non-Canadian Engineering Accreditation Board Applicants*:

1. Assessment processes must be individualized.
2. Assessment processes must be fair.
3. Education documents must be authenticated and verified.
4. Assessment of breadth and depth of education (of the program and institution) should be partly quantitative and partly qualitative.
5. Confirmation of breadth and depth of education is a requirement for all applicants.
6. Flexibility should be allowed between breadth and depth, so long as a minimum threshold is met.

4. The Full Spectrum Competency Profile

The FSCP is a comprehensive framework that specifies the knowledge, skills, and attributes required for proficient practice within a profession. When applied in an engineering context, the FSCP defines all the competencies required of an engineer at the various points in their development – from engineering graduates to point of licensure to mature/experienced professionals – and across all disciplines.

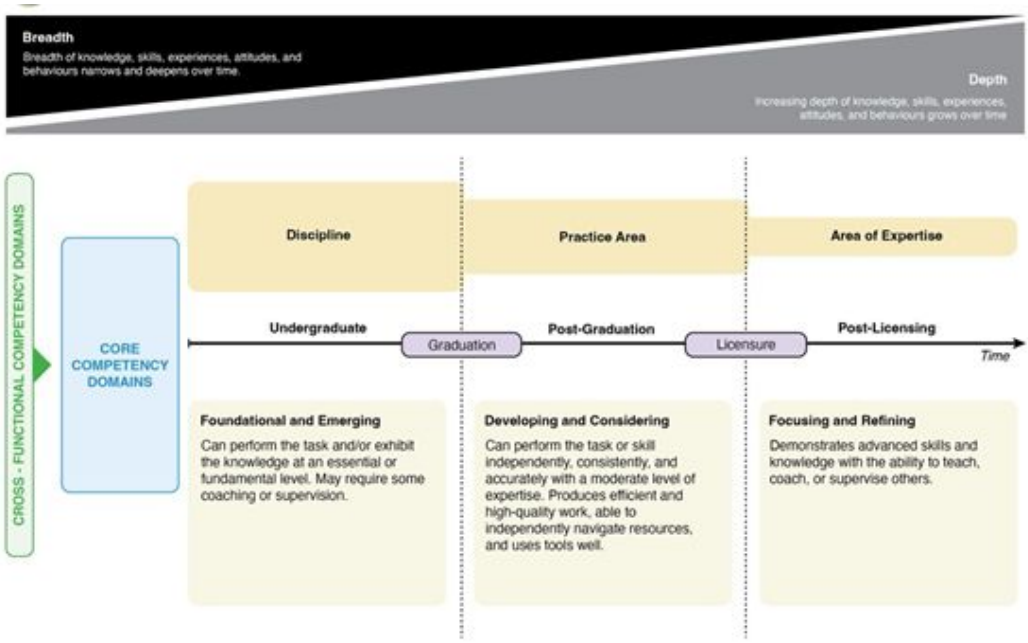

Figure 1: Competency stages. An engineer's journey from undergraduate through post-graduation and post-licensure.

The FSCP encompasses 34 competencies designed to span the entirety of an engineer's career journey, from undergraduate studies to post-licensure practice. Of these, 16 competencies have been specifically identified by the Academic Requirement Task Force in its proposal to establish a NARL. These competencies are intended to be acquired through an engineer's academic training and determined by the point of graduation, serving as foundational skills necessary for advancement into post-graduate stages of professional development.

FEA's November 2022 Foresight Session focused on the question, "What will the engineer of the future need to do?" Throughout the session, as perspectives were shared, a greater shared understanding emerged regarding the future skills and competencies required of engineers. Through a series of future scenarios, the participants identified a combination of technical and social skills and competencies essential to engineers of the future.

The *Foresight Session Event Journal* documented that "participants saw a need for engineers who are values-based leaders, who are technically excellent and actively collaborate across disciplines, are mindful of the future and maintain curiosity and a desire for lifelong learning." Beyond technical proficiency, engineers must embody a diverse range of competencies to tackle modern challenges. This includes environmental and social awareness, interdisciplinary problem-solving skills, a strong sense of public duty, and a commitment to lifelong learning. By instilling these qualities, accreditation ensures that

engineers are not only technically adept but also equipped to handle ethical dilemmas, collaborate across disciplines, and contribute meaningfully to society's well-being.

During FEA simulations held in spring 2023, participants indicated support for a NARL. They emphasized the value in having clearly defined, transparent standards for engineering knowledge and competence at a national level. Responses also suggested that this requirement should address a general, baseline level of technical knowledge complemented with professional competencies and an understanding of the ethical responsibilities of an engineer.

The participants carefully evaluated three distinct models of academic requirements, including graduate attributes, foundational technical and social competencies, and discipline-specific technical knowledge. There was no clear decision emerging regarding which model would be most appropriate. Regardless of how the academic requirement was defined, it seemed that it would continue to be difficult to evaluate internationally trained applicants' competencies.

Despite the lack of consensus for a preferred model, and the agreement on the challenges of assessing internationally trained applicants, the primary objective remains focused on improving equitable access to the profession.

With this objective in mind, consideration to the FSCP model began following these events. The project team explored how to develop a tailored academic benchmark to align with the participants' vision of improving access to the profession irrespective of educational background.

The FSCP model is comprised of five components[4]:

- **Competency domains** – Groupings of related competencies. There are six core competency domains and two cross-functional domains.
- **Competencies** – The knowledge, skills, experience, attitudes, values, abilities, and behaviours that enable an individual to complete a task. Competencies can be categorized as either **core competencies or cross-functional competencies**.
- **Core competencies** – Common to all engineers, and thus mandatory for all engineering graduates, newly-licensed engineers, and mature practitioners and apply to all disciplines and areas of practice.

[4] Refer to Appendix A: FSCP Overview for a visual representation of these components.

- **Cross-functional competencies** – Catalyze core competencies. They support the engineer's ability to reduce or eliminate silo thinking and silo management practices and differentiate an engineer's proficiency of the core competencies.
- **Indicators** – Describe and define the competency, what is expected to demonstrate proficiency, and how to assess the competency.

At this stage of the work, the competency domains for core and cross-functional competencies are proposed along with definitions of the competencies. Defining competence in each competency and indicators at each level of proficiency (i.e., learner, graduate, license holder) will be developed at a subsequent stage, as that work is outside the scope of this project.

Competence is the engineer's ability to perform a task, function, or role to a set of prescribed standards. Competency is an explanatory model that considers how engineers engage in their professional responsibilities, duties, and tasks. Competence itself is not readily observable, but competency is inferred from the engineer's activities. It encompasses the spectrum of knowledge, decisions, judgments, perceptions, procedures, and values that engineers employ while executing their duties.[5]

Competency is also a pragmatic notion: it demonstrates an engineer's aptitude to operate within a designated learning or work environment and leverage diverse resources to achieve desired outcomes. An engineer will draw on a combination of knowledge, skills, and attributes acquired through training and experience to adapt to changing, unforeseen, or constraining circumstances.

5. How competency profiles function

Current national standards and documents, such as the CEAB Graduate Attributes, the pan-Canadian work experience competencies, and the benchmarks established by the *International Engineering Alliances Graduate Attribute and Professional Competencies Framework* for engineering graduates and professionals, frame competencies as observable and demonstrable actions. This approach is intended to allow for their measurement and evaluation in a concrete manner.

A competency profile, while not an assessment tool on its own, helps define the standard against which the observable and demonstrable actions of all applicants can be measured

[5] Henderson, J. P. (Ed.). (2019). Certification: The ICE Handbook. The Institute for Credentialing Excellence.

and evaluated. This practice enhances transparency and ensures consistency throughout the assessment process and promotes greater accessibility to the profession for those with diverse backgrounds and experiences.

The activities of a competency profile are determined by a community of practitioners and serve as the benchmark against which other learning and work activities are assessed. This approach fosters the expectation that a competent engineer, within a specific context, would exhibit aptitudes akin to their peers at a similar stage of development. Consequently, evaluating engineers' competencies must be done in context of the knowledge, skills, and attitudes acquisition phase, so that evaluators may ascertain if the prospective engineer 'knows how' to accomplish the task and can 'do' the task in the pre-licensure work environment.

Many regulated professions, including engineers, have adopted a competency profile to help harmonize admission requirements and facilitate enhanced labour mobility. It serves to anchor the profession's other core standards and can be used by regulators for a variety of purposes, including, but not limited to:

- Academic program approval/recognition/accreditation
- Assessment of internationally educated applicants
- Continuing competency requirements
- Input into the content and scope of entry-to-practice exams
- Policy and standard development and decision making
- Reference for professional conduct matters
- Public and employer information regarding the practice expectations of professional engineers

6. List and definitions of competencies in the proposed academic requirement for licensure

The FSCP model is aligned to *Miller's Pyramid of Clinical Competence*.[6] The pyramid was developed specifically for assessing the clinical competency of learners in health care settings. It is useful for assessing learning outcomes (competencies) at various stages of the

[6] Miller, G. E. (1990). The assessment of clinical skills/competence/performance. Academic Medicine, 65, S63-S67.

learning process. The pyramid illustrates the expected learner progression from novice (bottom) to expert (top). Novice learners should be able to recall facts, but as their competency develops, they should be able to interpret and apply, demonstrate, and perform required knowledge, skills, and attitudes in authentic practice settings. Competency assessment should also evolve from recall-based multiple-choice to more authentic, workplace-based assessments.

Figure 2: Miller's Pyramid of Clinical Competence

The complete FSCP comprises 34 competencies that are progressively acquired over the course of an engineer's professional journey. Within this framework, a subset of 16 competencies constitutes the NARL. These competencies are expected to be acquired during academic training and demonstrated upon completion of the engineering program. They serve as the foundation of an engineer's career path and are expected to be further developed and honed during the post-graduate and post-licensure phases of their career. See Appendix A for a delineation of the 16 competencies of the NARL from the comprehensive 34 competencies of the FSCP.

Below are the 16 Proposed Competencies of the NARL with working definitions. The Path Forward Report should offer recommendations on further refining these working definitions, with validation expected to occur following the report's completion.

Domain: Acquiring and furthering engineering knowledge

1. Math

Mathematics is an extension of language and is used to describe, analyze and predict scientific and engineering principles and phenomena. It includes, but is not limited to,

elements of linear algebra, differential and integral calculus, differential equations, probability, statistics, numerical analysis, and discrete mathematics.

2. Natural science

Natural sciences include the exploration of the interactions and processes of the natural world and the systematic observation and understanding of natural phenomena through analytical and/or experimental techniques.

3. Engineering science: fundamentals

Engineering science fundamentals involve the application of mathematics and natural science to practical problems. They lay the foundation for discipline specific engineering science while also providing a knowledge base to ensure an understanding of the broader scope of engineering practice. Engineering Fundamentals may include, but are not limited to, engineering mechanics, materials, fluid mechanics, thermodynamics, and basic electric circuits and power.

4. Engineering science: discipline specialization[7]

Engineering science subjects involve the application of mathematics and natural science to practical problems. Topics are determined by the specific discipline of specialization and will include the applied aspects of the essential science relevant to problem-solving within that discipline.

Domain: Problem solving and design

5. Research and investigation

An ability to identify, formulate, research, and conduct investigations of complex engineering problems, by methods that include appropriate experiments, analysis, and interpretation of data, and synthesis of information, using principles of mathematics, natural science, and engineering science to reach substantiated conclusions.

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[7] It may be impossible to define Engineering Science: Discipline Specialization more precisely while still maintaining its generic applicability. As with all working definitions presented in this report, additional recommendations for refining this competency definition may be included in the Path Forward report and validated in subsequent stages of the project.

6. Financial analysis and viability

An ability to appropriately use financial principles to determine the economic viability of proposed engineering projects and to select between independent alternatives. Engineering economic principles include the importance of finance in business decisions, project cash flows, time value of money, depreciation, present worth analysis, rate of return analysis, and risk analysis.

Domain: Protection of the public

7. Sustainability

Sustainability is a long-term goal. Sustainable development is a strategy employed to meet the economic, environmental, and social needs of the present without compromising the ability of future generations to meet their own needs.[8] Sustainable engineering requires:

- consideration of economic efficiency and profitability for investors,
- navigating the tension between technical constraints and the need to broaden the design space to include ecological and environmental impact,
- meaningful consideration of design processes and outcomes that can preserve or improve social equity, and
- intergenerational equity, an emerging area for consideration, arises from non-Western knowledge systems that consider the impact of our actions seven generations into the future.

8. Equity, diversity, and inclusiveness

Equity is the promotion of fairness and justice for each individual that considers historical, social, systemic, and structural issues that impact experience and individual needs. Elevating equity in a good way removes barriers for the entire population.

Diversity is a measure of representation within a community or population that includes identity, background, lived experience, culture, disciplinary expertise, and many more.

Inclusion is the creation of an environment where everyone shares a sense of belonging, is treated with respect, feels heard, and is empowered to participate.

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[8] This definition is provided in part from the UN. https://www.un.org/en/academic-impact/sustainability

It is important to note that while an inclusive group is by definition diverse, a diverse group is not always inclusive. An inclusive working environment or team strives for equity and respects, accepts, and values differences.[9]

Domain: Teamwork and collaboration

9. Project management

Project management involves the comprehension of a project at various levels from full ownership at a coordination level to being knowledgeable about a project at a level of day-to-day tasks. Project management involves a set of principles that span the planning, implementing, and executing stages, and involves necessary attributes such as relationship building, budgeting, and resourcing, as well as considerations for safety, sustainability, and regulatory requirements.

10. Cross-discipline collaboration

An awareness of the importance of working effectively on projects that may involve collaboration across different disciplines and practice areas of engineering including other professions.

11. Interest holder engagement

Interest holder engagement is the process by which an organization embarks on meaningful collaboration with key groups/individuals who may be impacted by actions and decisions being made. Meaningful engagement involves the recognition that all engineering work has an impact and that those affected should be provided with accessible and appropriate information and be given the opportunity to voice those concerns.

[9] This definition is from the University of Toronto. https://research.utoronto.ca/equity-diversity-inclusion/equity-diversity-inclusion

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Domain: Analytical Skills

12. Numerical analysis

The use of algorithms and numerical approximation techniques in mathematical analysis as applied to engineering problems. Topics include direct and iterative methods, conditioning and discretization, and generation and propagation of errors.

13. Data analysis

The knowledge and skills required to ask and answer a range of questions by analyzing data including developing an analytical plan; selecting and using appropriate statistical techniques and tools; and interpreting, evaluating, and comparing results with other findings. An ability in data analysis implies knowledge in data awareness, cleaning, discovery, ethics, exploration, tools, and visualization.[10]

14. Statistics

Ability to use statistical principles to summarize data and draw conclusions from it. Important concepts include probability, frequency distributions, mean, standard deviation, propagation of errors, hypothesis testing, sample size determination, and regression.

15. Computer and information sciences

The knowledge and skills to use computer systems to store and manipulate large quantities of information. Topics include programming theory, computer system architecture, data repositories (e.g., databases, cloud storage, data lakes), and computation theory.

16. Modelling

Modelling is the purposeful development of an analytical, numerical, or empirical description of a real system. These models can be mathematical or physical in nature and are created with the specific intent of describing, analyzing, testing, demonstrating, and/or predicting behaviours, properties, or other characteristics of the system.

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[10] This definition is provided from Statistics Canada. https://www.statcan.gc.ca/en/wtc/data-literacy/compentencies

7. Insights from project engagement and research supporting the NARL

i. Mapping the FSCP to existing benchmarks

As part of the analysis about the suitability of the FSCP, Engineers Canada conducted a mapping exercise to compare it with established benchmarks, including the CEAB's Graduate Attributes, the pan-Canadian work experience competencies, and the International Engineering Alliance's (IEA) Graduate Attributes and Professional Competencies Framework. This mapping was presented to interest holders during the 2023 Fall Consultations to showcase that FSCP's alignment with the existing frameworks and bolster its credibility and reliability. Refer to Appendix B for the mapping of the FSCP to other benchmarks.

ii. Alignment with competency based assessment

The 2022 report *Current and Emerging Practices in Engineering Education* highlighted the increasing interest in CBA methods among educators. Most Canadian engineering regulators have already implemented CBA, comprising 34 competencies across seven different categories. The adoption of the FSCP represents a formalization of this assessment approach and supports the delineation of the NARL. Furthermore, competencies can be clearly defined, which facilitates transparent communication to interest holders regarding expectations for fulfillment and the evaluation processes.

Educators have also been expressing increased interest in CBA. Certain engineering programs have begun implementing CBA techniques, which enable students to effectively demonstrate their competencies on targeted tasks, facilitating their successful completion of courses.

iii. Alignment with other professions

In the 2022 report *Benchmarking the Canadian Engineering Accreditation System*, all eight of the accreditation systems under study, comprising five engineering and three other professions, are characterized as outcomes-based accreditation systems. A combination of graduate attributes, experience examples, and competencies are used as part of the accreditation system measures of student outcomes.[11] Preparing the FSCP and

[11] See Metric 1.4, page 15.

its subset of competencies that comprise the NARL would be consistent with these established models of accreditation.

The 2023 interviews with leadership from the Canadian nursing, accounting, and architecture professions revealed a shared reliance on competency profiles. Notably, all academic programs within these professions follow a competency-based approach, alongside national exams for licensure/certification.

In the case of internationally trained applicants, nursing employs a competency-based review for assessing academic qualifications. Internationally trained architects with seven or more years of experience are not subjected to academic assessment; rather, their licensure process centers on a comprehensive competency review of their extensive professional experience.

iv. Versatility

The FSCP represents versatility, accommodating the varying timeframes that make up the engineer's career journey. Its competencies can be tailored to suit the needs of diverse user groups, ranging from undergraduate learners to post-graduation trainees and post-licence practitioners. The approach allows for seamless adjustments in measuring and evaluating proficiency in competencies at each stage, ensuring appropriate assessments of both breadth and depth based on the stage of development. Additionally, the competencies are not limited to a specific discipline and encompass all areas of engineering practice equally.

v. Readiness for the future

During FEA's Foresight Session and virtual simulations, interest holders were invited to reflect on the anticipated future landscape of the engineering ecosystem. An emerging consensus suggests that engineers will operate in environments marked by heightened uncertainty and rapid change. Acknowledging this evolving reality, the FSCP becomes crucial in preparing tomorrow's engineers to effectively confront multifaceted and interdisciplinary challenges. By encompassing not only technical knowledge and abilities but also analytical, interpersonal, and social skills, the FSCP offers a comprehensive framework to ensure that engineers emerge as well-rounded and adaptable professionals equipped to navigate diverse professional contexts.

vi. Engineering education

The FSCP encourages flexibility and innovation within engineering programs, aligning closely with the core purpose of accreditation. By embracing the FSCP, programs can tailor

their educational offerings to meet the evolving needs of the engineering profession while maintaining the standards expected by accreditation bodies.

The FSCP also represents an outcomes-based approach, which reflects the pedagogical practices of many other jurisdictions covered in the 2022 report *Benchmarking the Canadian Engineering Accreditation System*. The use of outcomes-based approaches bolsters the credibility and effectiveness of engineering education.

vii. Increased diversity and inclusion

The FSCP presents a significant opportunity to address diversity and foster inclusion within the engineering profession. By embracing the FSCP, engineering programs can adapt their approaches to accommodate diverse learning styles and offer multiple pathways to licensure. This inclusive approach ensures that individuals from various backgrounds and experiences have greater opportunities for access to, participation in, and success within the engineering field.

8. Known gaps and actionable recommendations for the path forward

There are known gaps that could potentially impact the successful adoption and implementation of the FSCP and the NARL. Many of the known gaps will require further exploration and collaboration in the next phase of the FEA project.

i. Urgency to complete the NARL

Known gap: There is an urgent imperative to thoroughly develop and implement a NARL that is universally adopted by all regulators. This imperative contrasts with the longer development timelines needed to meticulously outline the FSCP. While the FSCP and NARL are complementary, their differing timelines may complicate how they are received, adopted, and accepted.

Recommendation: Prioritize the finalization and implementation of the NARL.

It must be seamlessly integrated into the entire accreditation system, encompassing accreditation processes and all academic assessments conducted by regulators. The next phase of the project should:

- Engage with employers, as outlined in one of the unfulfilled mandates of this Task Force, to gather valuable insights.
- Undertake refinement of the competencies, definitions of competence for each competency and subsequent development of indicators of competence, through assessment experts' structured and guided consultation with the engineers in academia and industry.
- Undertake refinement of the competencies and subsequent development of indicators.

Additionally, the completion and adoption of the FSCP should remain a longer-term goal.

ii. Continued development of the FSCP

Known gap: Accreditation system participants must maintain their focus on the long-term development of the FSCP and actively work towards its widespread adoption across the entire system. Achieving a comprehensive assessment as intended by the FSCP would require significantly more effort from all involved parties, which may not align with regulators' current priorities. The ongoing government pressures to expedite applications and entry to practice stand in contrast to the requirement for heightened assessment efforts.

A widespread acceptance of the FSCP lies in challenging certain patterns of thought and underlying beliefs. These include perceptions that the FSCP:

- Is overly complicated and difficult to clarify without criticism
- Is diminishing the current rigorous standards instead of enhancing them
- Limits assessments to a predefined set of competencies, overlooking critical attributes such as public safety, accountability, and liability
- Makes it challenging to strike a balance between evaluating academic and experiential competencies
- Constrains the flexibility, diversity, and innovation for the system's interest holders

Other assumptions erroneously suggest that the heightened workload and meticulous attention to assessment details inherent in the FSCP will invariably lead to improved outcomes and heightened public protection. There is an implicit, albeit not necessarily completely warranted, trust in the thoroughness of the FSCP assessment process.

Recommendation: Continue to develop the FSCP competency definitions and indicators to achieve a comprehensive assessment framework.

Prioritizing and promoting the implementation of the NARL will generate momentum and drive success for the broader adoption of the FSCP. This focused effort will establish the foundational aspect necessary for a robust framework of ongoing system enhancements. Moreover, leveraging the interest holders' familiarity with the significant efforts required to transition to CBA can further encourage their embrace of the FSCP.

iii. Substantial equivalence with IEA Graduate Attributes and Professional Competency Framework

Known gap: While the FSCP has been mapped onto existing frameworks such as CEAB's Graduate Attributes, the pan-Canadian work experience competencies, and the IEA's Graduate Attributes and Professional Competencies benchmarks, there are still gaps that need to be addressed to improve alignment with these models.

Recommendation: Maintain FSCP and NARL's alignment with the IEA's Graduate Attributes and Professional Competencies Framework.

Ensuring the substantial equivalence of the FSCP and NARL with the graduate attribute and professional competency profiles of the IEA is paramount, since maintaining signatory status in the Washington Accord, the International Professional Engineering Agreement (IPEA), and the Asia-Pacific Economic Cooperation (APEC) Agreement is a priority for Engineers Canada. A steadfast focus on compatibility between the frameworks is crucial to sustain alignment with global standards.

iv. An Imperative for National Adoption

Known gap: There is a significant risk that not all regulators will be willing to endorse the NARL. Without universal support, disparities in accreditation standards and licensing outcomes for engineering graduates in different Canadian jurisdictions will persist. Moreover, this lack of consensus will hinder the engineering community's ability to address the current issues surrounding perceived differences between CEAB and non-CEAB applicants, further exacerbating existing challenges related to fairness and equity in the accreditation process.

Recommendation: Strive to achieve national adoption of the NARL across all Canadian jurisdictions.

A collaborative approach grounded in shared principles will be essential. Interest holders must engage in ongoing dialogue and co-design sessions to develop a collective understanding of the NARL and its benefits. Allowing all parties to contribute their perspectives and work towards consensus can foster alignment and ensure successful

adoption of the NARL across the system. This approach is crucial for addressing disparities in licensing outcomes and ensuring equitable access to the profession.

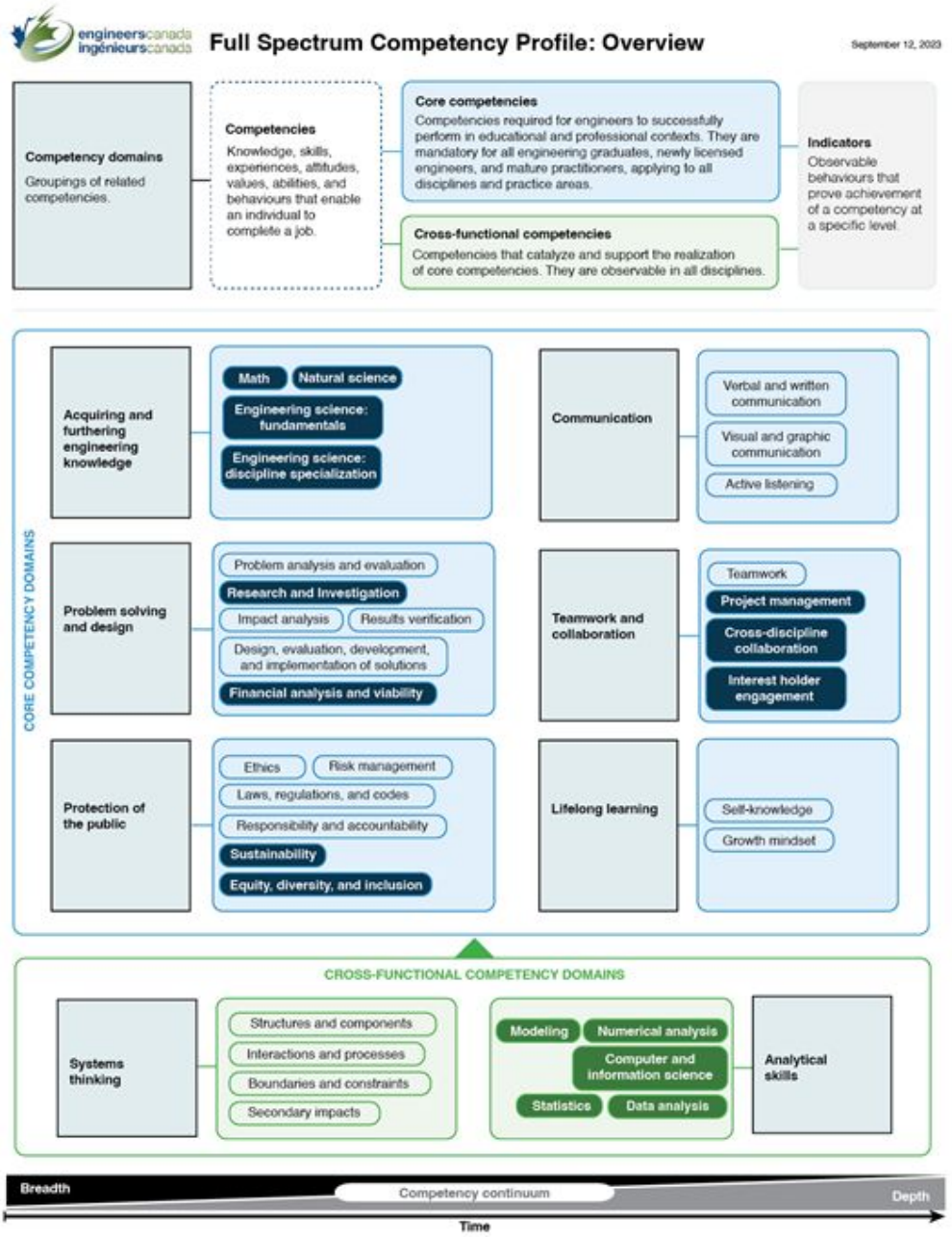
9. Next steps

The information and recommendations in this document will serve as foundational inputs for the discussions and preparations of the Co-Design Session scheduled for April 2024. This session, with participation from key interest holders, including the project Steering Committee, the CEAB, CEQB, Engineering Deans Canada (EDC), and the Regulator Advisory Group, will concentrate on the contents of this document and the accompanying document from the Academic Requirement Task Force.

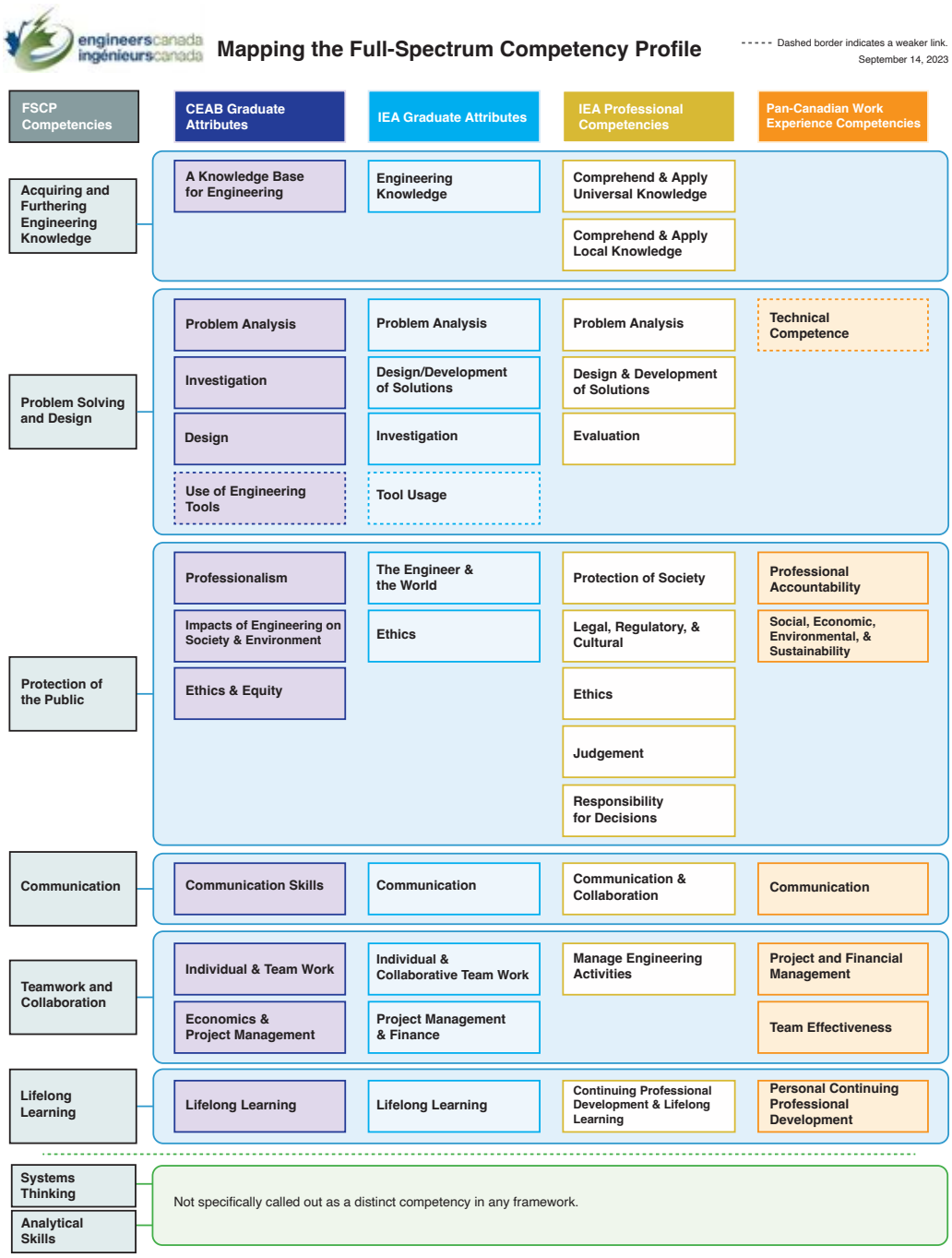
During the Co-Design Session, the participants will prioritize addressing how to tackle the identified gaps and recommendations. After the session, the conclusions drawn from these discussions will shape the contents of the Path Forward Report. This report will outline the direction of accreditation and propose implementation strategies aimed at achieving the envisioned future system.

Appendix A: FSCP Overview

The FSCP consists of 34 competencies organized into eight domains. The subset of 16 competencies that constitute the proposed NARL are shaded in dark blue and green.



Appendix B: Mapping the FSCP



Appendix C: Project background

a. About the Futures of Engineering Accreditation

The FEA is an initiative by Engineers Canada, and part of its 2022-2024 Strategic Plan. The objective of the FEA is to leverage the insights, perspectives, and expertise of members of the Canadian engineering ecosystem to examine the current accreditation system, understand how it is serving contemporary needs, and consider how it can chart a new path for the future of the engineering profession. The strategic priority aims to bring together the diverse perspectives of the Canadian engineering ecosystem to create an accreditation system that moves everyone forward together. Expected project outcomes include:

1. All interest holders understand the purpose of accreditation.
2. Regulators have an academic requirement for licensure, applicable to all.
3. Engineers Canada, including the CEAB and CEQB, have direction to implement systems aligned with the purpose and the academic requirement for licensure.

This project is done in partnership with Coeuraj, a design and facilitation consultancy. The "project team" includes Engineers Canada staff and Coeuraj personnel.

b. Adapting accreditation: The evolution and importance to Canadian engineering

Since its creation in 1965, the Canadian engineering education accreditation system has supported Canadian engineering regulators, been recognized as substantially equivalent under international mutual recognition agreements, and has mentored accreditation bodies across the globe. Significant changes in engineering practice and engineering education have occurred over this same period. From technological advancements to the emergence of new and alternative educational delivery methods, the learning context for today's engineers is far different from that of the past.

The skill set required of a modern engineer is continually shifting. Engineers Canada wants to ensure that accreditation still provides value while remaining contextually relevant by adapting to the changing educational and professional environments.

c. Project journey

This is a multi-year project with different phases. The key activities include:

- Benchmarking the Canadian accreditation system and investigating a minimum academic requirement for licensure.
- Conducting a fundamental review of the current accreditation system and re-examining its purpose in the context of the overall licensure system.
- Gathering the different perspectives of the Canadian engineering ecosystem to shape future evolutions of accreditation to best meet society's needs.
- Delivering a Path Forward report which provides direction to Engineers Canada, including the CEAB and the Canadian Engineering Qualifications Board (CEQB), with direction to implement systems aligned with the purpose of accreditation and the academic requirement for licensure. The report will explain future direction, and present recommendations to close the gaps between the current and envisioned future state.

There are four main phases of the project which have spanned from 2021 until the present. They are as follows:

Phase 1 – Research

In May 2021, the engineering regulators approved a new strategic priority to investigate and validate the purpose and scope of accreditation. To begin this work, members of the engineering ecosystem gathered perspectives on the current context in which the accreditation system functions. The Benchmarking Accreditation Task Force was created to conduct research to compare the Canadian engineering accreditation system with national and international comparators. The Engineering Education Task Force was created to understand current and emerging trends in engineering education. In a workshop with educators and regulators, the current realities of engineering education were explored with those who experience them daily. The two task forces compiled their findings in their respective reports, *Benchmarking the Canadian Engineering Accreditation System* and *Current and Emerging Practices in Engineering Education*. The reports were published in March 2022 and subsequently discussed with regulators to set the context for all future work. This upfront work served as the foundation for the project pathway.

Phase 2 – Understanding the existing system

Members of the Canadian engineering ecosystem were engaged to share their unique perspectives, including their experiences and expertise in the overall licensure process and accreditation system.

In May 2022, the project team facilitated a collaborative session with EDC to map out responses to four key questions pertaining to the purpose and scope of accreditation. In September 2022, the project team convened separate meetings with the CEAB and CEQB and collected their perspectives on the purpose and structure of the accreditation system.

In November 2022, the project team hosted more than 70 individuals from the engineering community at a strategic foresight session to imagine "the engineer of the future" and the prerequisites for their success. One of the central messages emerging from the event, as documented in the Foresight Session Event Journal, is that "participants saw a need for engineers who are values-based leaders, who are technically excellent and actively collaborate across disciplines, are mindful of the future and maintain curiosity and a desire for lifelong learning."

Phase 3 – Introducing new voices

Over six weeks during Spring 2023, the project team led a series of virtual simulations, a structured form of brainstorming and exercises which invited 80 participants from the engineering community to explore the accreditation and licensure systems. The simulation experience was designed to bring together a variety of perspectives for envisioning who the engineer of the future is and what they need, and to understand how the systems might react to different purposes of accreditation and to potential national academic requirements for licensure. The virtual simulations unlocked key learnings about the collective work needed to evolve the engineering accreditation system. The data synthesized from the simulations indicated that:

- Participants are aligned that accreditation should have a role in the engineering ecosystem to ensure quality control and professional integrity, but it needs significant change to be fit for purpose.
- There is value in having clearly defined, transparent standards for engineering knowledge and competence at a national level. The data also suggest that this requirement should address a general, baseline level of technical knowledge complemented with professional competencies and an understanding of the ethical responsibilities of an engineer.
- The relationship between accreditation and the academic requirement for licensure is not yet clear and requires further work.

The Purpose Task Force and the Academic Requirement Task Force used the data from the virtual simulations to build viable options for the future. In Fall 2023, the project team conducted 13 in-person consultations with regulators, the EDC, the CEAB, and the CEQB to

discuss draft concepts for a renewed purpose of accreditation and a national academic requirement for licensure.

Also in late 2023, the project team conducted four interviews with leadership from Canadian accreditation and/or regulatory bodies for the professions of nursing, accounting, and architecture. The findings underscore the shared challenges and approaches among these professions in accrediting programs for interest holders with different needs and objectives, evaluating foreign-trained practitioners, and offering diverse pathways into the profession.

During the same timeframe, the project team launched a survey aimed at actively engaging specific interest holders, including current and former students of CEAB-accredited programs, international engineering graduates, applicants for engineering licensure, and people with or without an engineering license working in engineering. Participants were asked to share their insights and experiences related to accreditation, competencies, and the process of obtaining an engineering license in Canada. The survey responses contributed to the ongoing work and validation around development of the purpose of accreditation and a national academic requirement for licensure.

Current Phase (Phase 4) – Nurturing an emergent system

The Purpose Task Force and the Academic Requirement Task Force relied on data collected during the previous phases of the project to inform and define the future purpose and scope of accreditation and a national academic requirement for licensure. Recommendations from the task forces will become the foundation for shaping the future of the accreditation system, which will be documented in the Path Forward report for release later in 2024.

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Appendix B

The Path Forward

Futures of Engineering Accreditation (FEA) recommendations

Fall 2024

INTRODUCTION

Agenda

1. Project overview & why we're here
2. Recommendations 1-18
3. Q&A on Recommendations 1-18
4. Closing

INTRODUCTION

Engineers Canada's Strategic Priority 1.1

Investigate and validate the purpose and scope of accreditation:

1. All interest holders understand the purpose of accreditation.
2. Regulators have an academic requirement for licensure, applicable to all.
3. Engineers Canada, including the Canadian Engineering Accreditation Board (CEAB) and Canadian Engineering Qualifications Board (CEQB), have direction to implement systems aligned with the purpose and the academic requirement for licensure.

PART 1: BACKGROUND

The Path Forward Report

The Path Forward Report is based on research conducted by the FEA project's volunteer groups and Task Forces and the insights of interest holders from across the engineering ecosystem.

The Report:

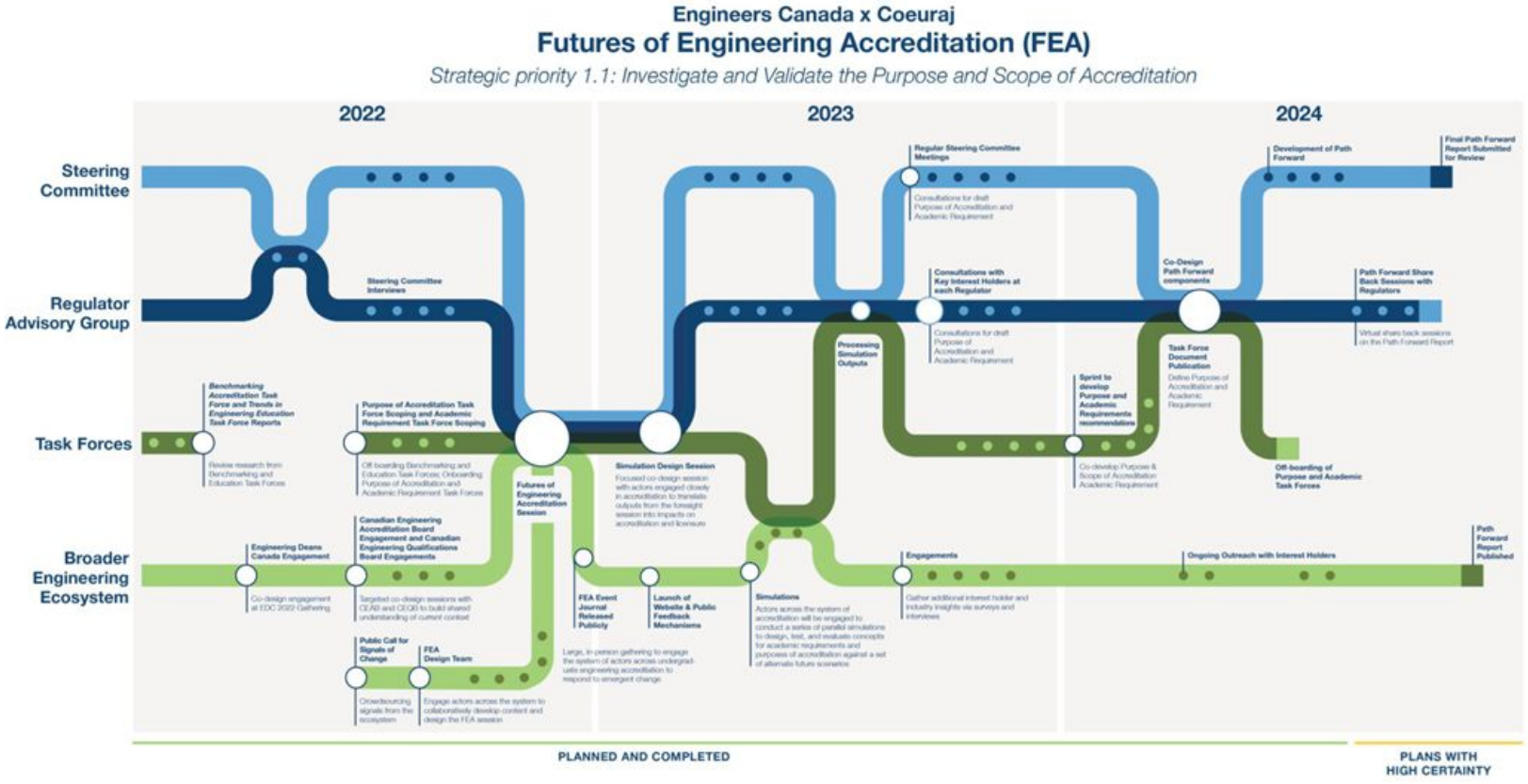
- Is a strategic blueprint for the future of engineering accreditation in Canada.
- Calls for the beginning of a transformative journey for the accreditation system.

It proposes:

- Revised purpose and scope of accreditation statements.
- The transition to a fully outcomes-focused accreditation model.
- The development of a Full Spectrum Competency Profile (FSCP) and National Academic Requirement for Licensure (NARL).

INTRODUCTION

Journey map



Last updated August 29, 2024

PART 1: BACKGROUND

Futures of Engineering Accreditation: Why we're here

- The context of engineering practice and education has radically changed since 1965.
- Engineers Canada wants to ensure that accreditation still provides value and is not only fit for purpose but also fit for context.
- Substantial equivalence between the various pathways to licensure (CEAB and non-CEAB) is necessary.
  - A national academic requirement for licensure has not been defined by regulators.

PART 1: BACKGROUND

Accreditation system learnings and research

- Accreditation is valued and should continue to contribute to the engineering licensure system – but needs to change.
- The Canadian accreditation system is similar to others, but key differences present opportunities for change:
  - Re-think program inputs such as time-based measures, faculty licensure requirements, and a 'minimum path' requirement.
  - Leverage outcomes-focused accreditation, aligning with the educational environment.
  - Stated purpose of accreditation is narrow (benefit for regulators only) yet the cost of accreditation is borne by both educators and regulators. Focusing on one actor in the system is a non-viable option.

PART 1: BACKGROUND

The engineer of the future

Early on, interest holders worked together to define the "engineer of the future."

Engineers of the future are:

- Ethical, inclusive, and values-based leaders.
- Mindful and aware of their roles in shaping and contributing to the future of humanity.
- Fostering collaboration across multidisciplinary teams.
- Incurably curious, showing up with creativity and empathy.
- Technically excellent and focused on their lifelong learning journeys.

PART 2: THE PURPOSE OF ACCREDITATION

Recommendation 2: The purpose of accreditation statement

Balancing the needs of programs, students, and regulators:

> **"Accreditation provides assurance that an engineering program is designed and delivered such that its graduates meet the academic requirements to be licensed as professional engineers in Canada."**

Recommendation 2: The scope of accreditation

The scope of accreditation is defined as:

> **" The accreditation review process includes evaluation of the curriculum as well as those factors which enable the design and delivery of the program, including human and financial resources, the learning environment and facilities, and quality control mechanisms. "**

PART 2: THE PURPOSE OF ACCREDITATION

Recommendation 3: Accreditation system design parameters

1. Be simple, flexible, and adaptable over time.
2. **Be outcomes-focused.**
3. Achieve alignment between the educational approach and the accreditation criteria.
4. Consider the equity of application across all institutions, taking into consideration local context and different levels of access to resources.
5. Value experiential learning.
6. Be based on defensible evaluation processes.
7. Balance evolving criteria.
8. Optimize the use of peers to conduct evaluations.
9. Incorporate and recognize content of 'feeder' programs.
10. Provide value to regulators and expedite the licensure process for graduates.
11. Avoid the duplication of other processes of evaluation of programs.
12. Prepare graduates to demonstrate their competencies and skills to employers.
13. Enable national and global mobility of students and graduates.
14. The future accreditation system must communicate its value and enhance public perception of undergraduate engineering education.

PART 2: THE PURPOSE OF ACCREDITATION

Recommendation 4: Outcomes-focused accreditation

Recommendation 4: Mandate a shift to an outcomes-focused accreditation as a cornerstone for future system change.

Recommendation 5: Remove criteria related to the measurement of curriculum content with Accreditation Units. Focus on Graduate Attributes until a transition to the Full Spectrum Competency Profile can be completed.

Recommendation 6: Retire the concept of the “minimum path”.

Recommendation 9: Formalize the Temporary Exemption for Students Going on International Exchange by permanently integrating its core principles into CEAB policy.

PART 2: THE PURPOSE OF ACCREDITATION

Recommendation 4: Outcomes-focused accreditation (cont.)

Recommendation 7: Accept some of the recommendations presented by the CEAB to address faculty license requirements, including:

a. Endorse the principle that engineering programs must have substantial and meaningful involvement of licensed professionals in the education of future professionals.

b. Interpret existing accreditation criteria related to the role of the professional engineer in the instruction of students in a manner that allows HEIs to have more flexibility with respect to mechanisms to facilitate substantial and meaningful involvement of licensed professionals in the engineering education process.

c. Require HEIs to demonstrate that graduates have developed the expected level of understanding of, and commitment to, Professionalism.

d. Remove the Specific AUs criteria and the requirement for the significant design experience to be conducted under the professional responsibility of licensed faculty.

Recommendation 8: Explore the development of alternate ways for HEIs to demonstrate that students enrolled in engineering programs have substantial and meaningful involvement with licensed professionals.

PART 2: THE PURPOSE OF ACCREDITATION

Additional recommendations

Recommendation 1: Identify and strategically integrate the system's current strengths into the future framework.

Recommendation 10: Evaluate the feasibility of accepting HEI evaluations from provincial quality assurance bodies to streamline CEAB processes while maintaining compliance with the Washington Accord.

Recommendation 11: Maximize the return on investment for all interest holders by incorporating new core values into the accreditation system, including:

- Co-design
- Collective stewardship
- More representative governance

PART 3: DISCUSSION

Questions for discussion

1. What are the biggest opportunities you're seeing for the project to keep momentum going?

2. Is there anything unclear about what the project is proposing?

3. Are there any challenges that will either:
   - Prevent the Engineers Canada Board from making a decision in December, or;
   - Need to be considered for the implementation phase(s) in 2025 and beyond.

4. When considering opportunities and possible barriers, are there certain recommendations that should be prioritized over others? If so, why?

PART 4: THE FSCP AND NARL

A Full Spectrum Competency Profile (FSCP) and National Academic Requirement for Licensure (NARL)

The FSCP:

- Defines competencies required of an engineer at various parts of their development – from engineering graduates to the point of licensure.
- Applies to all engineers, regardless of discipline.
- Directly ties education to licensure.
- Provides the foundation for the National Academic Requirement for Licensure for all applicants for licensure.
    - Can be applied in the accreditation process and to academic assessment of non-CEAB applicants.

FSCP & NARL cont.

What, at the point of licensure, does an applicant need to ***know*** and what do they need to be able ***to do?*** (Miller's Pyramid)

Assumptions:

- Regulators are looking for efficiencies in their systems without sacrificing a high standard and public safety.
- Competencies need only be assessed once for licensure purposes.
- If the applicant must demonstrate that they can *do* something, they must already have the *knowledge*.
- Competencies that are evaluated through work experience are NOT the academic requirement for licensure.
- The accreditation has a role to play in the assessment of the National Academic Requirement for Licensure and in the development of work-experience competencies in the educational setting.

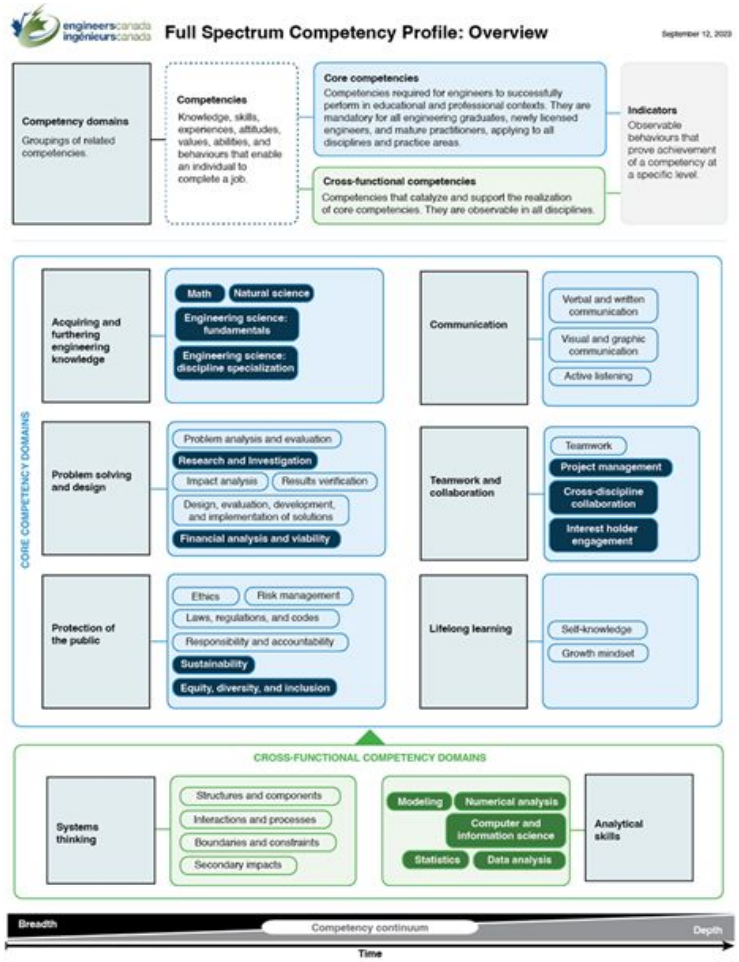
PART 4: THE FSCP AND NARL

Structure of the FSCP

The FSCP consists of 34 competencies organized into eight domains: six for core competencies and two for cross-functional competencies.

At this stage, **details of the FSCP are incomplete.** The FSCP should be taken as a starting point for further discussion and development through the next stages of the project, including the FSCP Pilot.

Recommendation 13: Ensure that the FSCP, including the NARL, is substantially equivalent to the International Engineering Alliance (IEA) Graduate Attributes and Professional Competencies Framework.

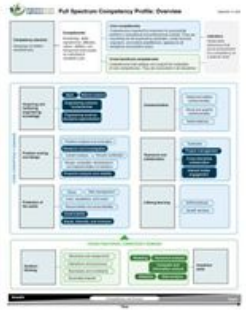


PART 4: THE FSCP AND NARL

Hypothesis: competencies constituting the NARL

A subset of the FSCP's competencies have been preliminarily selected to constitute the NARL:

- Math
- Natural Science
- Engineering science: fundamentals
- Engineering science: discipline specialization
- Research and investigation
- Financial analysis and viability
- Sustainability
- Equity, diversity, and inclusiveness
- Project management
- Cross-discipline collaboration
- Interest holder engagement
- Numerical analysis
- Data analysis
- Statistics
- Computer and information sciences
- Modelling



PART 4: THE FSCP AND NARL

The role of a National Academic Requirement for Licensure (NARL)

Adopting a national requirement would address existing gaps:

- **The absence of a clear definition of the essential components of an academic requirement for licensure**. Without a precise definition, the current system cannot transparently delineate the necessary knowledge for safe practice.
- **The lack of a common framework across provincial and territorial regulators.** This can lead to confusion for applicants, industry groups, and the public.
- **The inability to demonstrate substantial equivalency in the assessment of all CEAB and non-CEAB graduates.** There is a growing number of internationally trained graduates and increased attention on government-led fairness reviews.

PART 5: FSCP PILOT STUDY

Recommendation 12: Pilot study

Consultations reveal overall enthusiasm for the direction of the FSCP and the NARL but tempered with cautions and questions:

- Is the methodology to select the NARL competencies sound?
- Who sets indicators?
- What are the assessment methodologies?
- What effort is required to a) develop the FSCP and NARL and b) implement in a change-fatigued environment?

Recommendation 12: Initiate a pilot study to evaluate the feasibility of the FSCP according to the proposed Working Group Terms of Reference.

- This work involves: selecting competencies to study, defining the competencies and indicators, creating assessment processes, and reporting recommendations.

PART 6: DISCUSSION

Questions for discussion

1. What are the biggest opportunities you're seeing for the project to keep momentum going?

2. Is there anything unclear about what the project is proposing?

3. Are there any challenges that will either:
   - Prevent the Engineers Canada Board from making a decision in December, or;
   - Need to be considered for the implementation phase(s) in 2025 and beyond.

4. When considering opportunities and possible barriers, are there certain recommendations that should be prioritized over others? If so, why?

PART 7: GOVERNANCE

Recommendations for governance and engagement

Recommendation 14: Establish a dedicated task force to develop a change management plan for the strategic implementation of outcomes-focused accreditation. This plan should encompass the sequence of tactical steps to move from the current state to the desired state and address the potential emotional and psychological experience of change.

Recommendation 15: The Engineers Canada Board should establish two distinct bodies in accreditation: a policy body responsible for setting strategic direction, and an operational body focused on execution of policies.

Recommendation 16: Establish a new dedicated oversight body for the Full Spectrum Competency Profile (FSCP).

Recommendation 17: Establish regular engagement opportunities with industry, leveraging existing mechanisms to gather ongoing feedback and insights.

PART 8: CORE VALUES

Core values for the future

Recommendation 18: Adopt the outlined core values to guide implementation of these recommendations.

Core values:

- Co-design brings benefits to all interest holders.
- Collective stewardship empowers interest holders to contribute to and shape the accreditation system.
- Transformative change through a culture of continuous transformation, embracing experimentation and learning.
- Outcomes-focused accreditation system.
- Proactive support for so that Interest holders have the necessary resources, guidance, and support to fulfill their roles effectively.
- Fairness and equity for all interest holders and system participants.
- Communication is vital for aligning all interest holders with the future system's opportunities.

PART 9: TIMELINE

Short-term actions: Early 2025

There are some initiatives that Engineers Canada should launch in early 2025 to sustain momentum and pave the way for later implementation stages:

1. Commit to outcomes-focused accreditation by eliminating AUs and minimum path.
2. Remove the faculty licensing requirements.
3. Separate CEAB's policy-making functions from operational activities.
4. Initiate a pilot study to evaluate how interest holders can leverage FSCP.
5. Create a co-design policy to guide transformation in the accreditation system.

PART 9: TIMELINE

Long-term actions: 2025 and beyond

The FEA Path Forward Report lays a direction for the accreditation system in 2025 and beyond. The **Engineers Canada 2025–2029 Strategic Plan** sets this work up under the strategic direction of:

Realizing accreditation and academic assessments

A high-level operational plan with key milestones was prepared in May 2024. This plan will become more detailed with specific tasks and timelines starting in early 2025.

PART 10: DISCUSSION

Questions for discussion

1. What are the biggest opportunities you're seeing for the project to keep momentum going?

2. Is there anything unclear about what the project is proposing?

3. Are there any challenges that will either:
   - Prevent the Engineers Canada Board from making a decision in December, or;
   - Need to be considered for the implementation phase(s) in 2025 and beyond.

4. When considering opportunities and possible barriers, are there certain recommendations that should be prioritized over others? If so, why?

Thank You.

VISIT THE PROJECT WEBSITE:
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Appendices

PART 11: APPENDICES

Appendix A: Consolidated list of Path Forward Report recommendations

ACCREDITATION SYSTEM STRENGTHS

1. Identify and strategically integrate the system's current strengths into the future framework.

PURPOSE AND SCOPE OF ACCREDITATION

2. Endorse the revised purpose and scope of accreditation statements.

DESIGN PARAMETERS FOR THE FUTURE ACCREDITATION SYSTEM

3. Adopt the outlined design parameters as a fundamental framework for the future accreditation system.

OUTCOMES

4. Mandate a shift to an outcomes-focused accreditation as a cornerstone for future system change.
5. Remove criteria related to the measurement of curriculum content with Accreditation Units (AUs). Focus on Graduate Attributes until a transition to the Full Spectrum Competency Profile can be completed.

PART 11: APPENDICES

MINIMUM PATH

6. Retire the concept of the “minimum path”.

FACULTY LICENSURE

7. Accept some of the recommendations presented by the Canadian Engineering Accreditation Board (CEAB) to address faculty license requirements, including:
    a. The CEAB should endorse the principle that engineering programs must have substantial and meaningful involvement of licensed professionals in the education of future professionals.

    b. The CEAB and visiting teams should interpret existing accreditation criteria related to the role of the professional engineer in the instruction of students in a manner that allows HEIs to have more flexibility with respect to mechanisms to facilitate substantial and meaningful involvement of licensed professionals in the engineering education process.

    c. The CEAB must require Higher Education Institutions (HEIs) to demonstrate that graduates have developed the expected level of understanding of, and commitment to, professionalism.

    d. The CEAB remove the Specific AUs criteria and the requirement for the significant design experience to be conducted under the professional responsibility of licensed faculty.

8. Explore the development of alternate ways for HEIs to demonstrate that students enrolled in engineering programs have substantial and meaningful involvement with licensed professionals.

PART 11: APPENDICES

PROGRAM EXCHANGE

9. Formalize the CEAB's Temporary Exemption for Students Going on International Exchange by permanently integrating its core principles into accreditation policy.

EDUCATIONAL CURRICULUM AND LEARNING ENVIRONMENT

10. Evaluate the feasibility of accepting HEI evaluations from provincial quality assurance bodies to streamline CEAB processes while maintaining compliance with the Washington Accord.

RETURN ON INVESTMENT

11. Maximize the return on investment for all interest holders by incorporating new core values into the accreditation system, including co-design, collective stewardship, and more representative governance.

FULL SPECTRUM COMPETENCY PROFILE (FSCP) PILOT STUDY

12. Initiate a pilot study to evaluate the feasibility of the FSCP according to the proposed Terms of Reference.

PART 11: APPENDICES

SUBSTANTIAL EQUIVALENCE

13. Ensure that the FSCP, including the National Academic Requirement for Licensure (NARL), is substantially equivalent to the International Engineering Alliance (IEA) Graduate Attributes and Professional Competencies benchmark.

CHANGE MANAGEMENT

14. Establish a dedicated task force to develop a change management plan for the strategic implementation of outcomes-focused accreditation. This plan should encompass the sequence of tactical steps to move from the current state to the desired state and address the potential emotional and psychological experience of change.

GOVERNANCE

15. The Engineers Canada Board should establish two distinct bodies in accreditation: a policy body responsible for setting strategic direction, and an operational body focused on execution of policies.
16. Establish a new dedicated oversight body for the FSCP.

PART 11: APPENDICES

INDUSTRY ENGAGEMENT

17. Establish regular engagement opportunities with industry, leveraging existing mechanisms to gather ongoing feedback and insights.

CORE VALUES

18. Adopt the outlined core values to guide implementation of these recommendations.

PART 11: APPENDICES

Appendix F: Project journey

The FEA project was a multi-year initiative with different phases. Key activities and outputs included:

- Benchmarking the Canadian accreditation system and investigating a minimum academic requirement for licensure.
- Conducting a fundamental review of the current accreditation system and re-examining its purpose in the context of the overall licensure system.
- Gathering the different perspectives of the Canadian engineering ecosystem to shape future evolutions of accreditation to best meet society's needs.
- Delivering the Path Forward Report, which provides direction to Engineers Canada, including the CEAB and the CEQB, on implementing systems aligned with the purpose of accreditation and the academic requirement for licensure. The Report explains the future direction and presents recommendations to close the gaps between the current and envisioned future state.

LINKS:

Current and Emerging Practices in Engineering Education

Benchmarking the Canadian Engineering Accreditation System

Academic Requirement document

Purpose of Accreditation document

Foresight event journal

Appendix B: Project participants

The FEA project engaged a dynamic group of volunteers from across Canada with a range of expertise.

Organized groups included:

- Academic Requirement for Licensure Task Force
- Benchmarking Accreditation Task Force
- Engineering Education Task Force
- Purpose of Accreditation Task Force
- Regulator Advisory Group
- FEA Steering Committee

In addition to the organized groups, **more than 700 interest holders participated in FEA activities** through more than 35 engagements across Canada. Each contributor brought a unique perspective to the project and strengthened the research and insights about the accreditation system.

Further Comments and Questions about the Futures of Engineering Accreditation (FEA) Recommendations

Roydon A. Fraser, P.Eng.

Summary of Major Concerns

Major Problem #1: Retiring Minimum Path with NO WRITTEN COMMITMENT/RECOMMENDATION to a "minimum academic requirement" measuring academic depth and breadth of each student.

This leads to the 4 negative predictions (see Appendix A below). If a commitment to a "minimum academic requirement measuring academic depth and breadth of each student" had of been in the recommendations this would go a long-long way to accepting the defense that details will be worked out in the future via pilot projects, etc.

Major Problem #2: Future assessment of non-CEAB applicants as individuals to an attribute/outcome standard. Impossible to see how PEO can hope to assess non-CEAB applicants without extreme expense/workload or introduction of major artificial barriers. If there are any pilots, non-CEAB assessments must be the first as they are expected to be most revealing of the details that need to be considered if FEA is to proceed.

Major Problem #3: Seems universities do not yet see the potential enormous increase in workload if there are minimum academic requirement for students. There seems to be a strong mis-understanding between what the Deans are now expecting and what FEA can deliver if CEAB graduates are to remain exempt from exams.

Major Problem #4: Fundamental disconnect under the proposed outcomes-based academic assessment between what it means to assess attributes/outcomes at the program level versus the individual level. Many people still confuse "program" graduate attribute assessment as being equivalent to an "individual" student attribute/outcome assessment when they are distinctly different. For example, CEAB graduate attributes as implemented today do not constitute a minimum academic outcome requirement student assessment, they represent a quality improvement program assessment!

To fully understand these problems, their possible repercussions, and possible solutions requires knowledge of academic assessment details, yet to date the FEA process has provided no details, and has made no explicit commitment to "minimum academic requirement" measuring academic depth and breadth of each student. Furthermore, pilot projects require details. Without FEA process details all predictions for the future of the FEA lead to much worse outcomes than the current CEAB process for one or more of regulators, universities, non-CEAB applicants, and students (see Appendix A).

Questions Sent to Engineers Canada

1. Slide Part 4: The FSCP and NARL Hypothesis: competencies constituting the NARL: You mentioned that this list was going to be further defined. May you please elaborate on why "professionalism" not part of the identified FEA academics in the NARL? And if not part of the academics, then will professionalism be required for all licensed undergraduate programs (i.e., also for non-CEAB)? If not, would we consider professionalism not to be an academic requirement and should it only be included if a non-regulator, e.g., the universities, see it as required.

2. In relation to the graduate attributes being leveraged as a minimum path, assuming if and only if, each individual student is shown to have the graduate attribute competencies. Have the Engineering Deans of Canada and Engineering Deans of each province – in my case Engineering Deans of Ontario – been consulted on this item, as it could pose a tremendous workload to them and their staff. If so, can you provide their comments/thoughts in relation to the "how" they would undertake this work, or if it is the work of the Pilot Project to work through this particular "how"?

3. In relation to Recommendation 1: Does this mean there is a "minimum competency requirement for each individual student"? If yes, given competencies require measurement, and there are many more competencies than AU attributes, how can an outcomes/competency based system measure individual student competency with less or equal work to that needed to track AUs? And if not less work, is this a problem in meeting the major workload complaint of the universities? Alternatively, if Recommendation 1 does not imply a minimum, then how can regulators accept the academics of students? Will this be defined in the Pilot Project?

4. In relation to the outcomes based approach – will there be more information available on how this will be defined? Can you provide clarify between that of a competency based system vs. that of an outcomes based system? Can we assume that competency based systems do not depend on time and outcomes based systems are time limited? One concern for the competency based system would be that students would be unable to advance through their academic courses until they demonstrate a competency, e.g., cannot carry failed courses, no expectation of completing degree in 4 years, etc. Can you comment on this concern/risk and how it will be addressed?

5. In relation to Recommendation 2: Outcomes-based system requires measurements. What are possible measurements for say "Math"? Might there be that involves less work than AUs by universities and professors? And if more work, where is the "win" for the universities when workload was a major complaint?

6. What are the fundamental elements that make the current CEAB accreditation process unique in that regulators accept CEAB graduates without further technical exams?

7. If the "minimum path concept" is to be retired as per FEA Path Forward Recommendation, does the "Full Spectrum Competency Profile (FSCP)" guarantee a minimum academic requirement/standard?

   If YES, then:

   i. Why is there no such commitment in any of the FEA documents (FEA Purpose of Accreditation Document, FEA Academic Requirement Document) or the Path Forward ShareBack presentation (FEA Path Forward Presentation Regulators ShareBack)?

   ii. How can individual students be tracked in their competencies without creating more work for universities, and professors, than the AU system?

   iii. What is the minimum academic requirement/standard that will be guaranteed for each student? For example, could it be a minimum amount of "Introductory", "Developing", and "Advanced" (IDA) knowledge for a given competency and given discipline, given competencies by definition have a progression of "levels" that are to be measured (See CEQB documents on assessment of non-CEAB applicants)?

   a. If it could be an IDA like process, how is this different from an AU process in concept except that it say makes tracking/measurement more complicated for universities and professors? For example, the AU "Math" area of knowledge under FSCP would have to track/measure not just math, but "I" for math, "D" for math, and "A" for math.

   If NO, then:

   i. How can a regulator be expected to accept a FSCP student without having them write regulator exams?

8. The FEA Academic Requirement Document says a National Academic Requirement for Licensure (NARL) "<u>can</u> support" the fundamental principles outlined in Engineers Canada's policy guideline, Regulators Guideline on the Academic Assessment of Non-Canadian Engineering Accreditation Board Applicants which includes a "minimum threshold" and "individualized assessment". Is there a reason for why the document doesn't say it "<u>will</u> support" these "fundamental principles"?

   For information the 6 fundamental principles for non-CEAB applicants are as follows:

   1. Assessment processes must be individualized.
   2. Assessment processes must be fair.
   3. Education documents must be authenticated and verified.
   4. Assessment of breadth and depth of education (of the program and institution) should be partly quantitative and partly qualitative.
   5. Confirmation of breadth and depth of education is a requirement for all applicants.
   6. Flexibility should be allowed between breadth and depth, so long as a minimum threshold is met. - FEA

9. How can a NARL support the six fundamental principles of non-CEAB applicant assessment (see above for the 6 principles) and be compatible with the FSCP? For

example, how can the competency for “modelling” or “EDI” be measured without increasing the barrier to licensure from the current non-CEAB process that involves Basic Studies, A-Level, B-Level, and a Complementary Studies exam that is not EDI? And if the barrier is increased, why is this not considered an artificial barrier without claiming there is a problem with the quality of current CEAB graduates such that current CEAB graduates should not be licensed?

10. If the “faculty licensing requirement” is to be removed, what will be in its place? What was the reason for the licensing in the first place and what can be used to substitute for this purpose, or is the proposal to get rid of its purpose entirely?

11. When will you be providing details about the proposed “pilot projects” given pilot projects require that details be known? How will you be defining the “requirements” that you hope to achieve? For example, is there to be a requirement of a minimum academic requirement/standard for depth and breadth for individual students? Wil there be consideration given to first apply the pilot project to non-CEAB applicants in order to understand the non-CEAB challenges the FSCP presents? (given it seems the FSCP process to date has not really considered the realities of processing non-CEAB applicants). Our ask would be to also consider a CEAB pilot to be done in parallel, but should not be done beforehand if evidenced-based decision making is to be used and maximized.

* * * * * * * * * * * * *

APPENDIX A: Four FEA Predictions

So here are my FEA outcome predictions where only Prediction-4 has a good for regulators outcome potential, however, Prediciton-4 requires clearly purposed immediate feedback from PEO and/or other regulators so as to minimize being boxed into a corner with the Path Forward recommendations that will provide ammunition to strongly resist or eliminate Prediction-4:

1. Framework will be unworkable and vanish (unlikely given the money spent by EC on the FEA process, the embarrassment it would cause, the friction with the Deans, etc.).
2. Framework will be implemented without a minimum academic area-of-knowledge competency standard/requirement eventually requiring all engineering regulators to insist CEAB graduates write exams like non-CEAB graduates. The consequence being a continued, and significant drop in CEAB applicants to U.S. PE levels, so forget about protecting the public from emerging disciplines. Also, there will be an increased need for enforcement with a much smaller budget or much larger member fees (which will only push membership down more which in turn in my view is a decrease in the protection of the public). And more resources will be needed to support more exams.
3. Framework will be implemented without a minimum academic area-of-knowledge competency standard/requirement with engineering regulators lowering the academic standard below that of other countries by not requiring CEAB graduates to write exams, and with PEO having no real way to define equivalency for non-CEAB applicants creating all forms of unfair, artificial barrier, consequences or significantly lowering the academic standard for non-CEAB applicants.
4. Framework will be implemented with a minimum academic area-of-knowledge competency standard/requirement (this is to be the goal of my emergency motion) resulting in CEAB graduates continuing to meet academic requirements along with one of two following consequences (one good, one bad):
    1. (Good) That the Framework Path Forward includes a minimum depth/breadth/confirming path substitute for AUs (would be highly ironic if the conclusion was that AUs return), or
    2. (Bad) That universities will need to track far more data than currently done with AUs, (e.g., perhaps need to track the 12 CEAB graduate attributes for each student), with many professors turning to “teaching to the exam” as is seen in many ABET universities in the U.S., all creating more work than ever before for the universities despite one of the main reasons the Deans were upset is because of the CEAB workload.

Academic Requirements Committee and the Experience Requirements Committee regarding the current relevancy of the recommendations.

At the request of President Comrie, President-elect Dony assumed the Chair so that President Comrie could speak to the motions.

(a) LPTF Recommendations 8 and 10, Tabled 16Nov2007 (C-443, Minute #10445) and reintroduced as a single resolution Passed 25Jan2008 (C-445, Minute #10477) redefining the academic requirement

[Secretariat Note: By Council Special Rules of Order the following motion required a two-thirds majority of votes cast to carry.]

Moved by President Comrie, seconded by Councillor Fraser:

That the following resolution be rescinded:

That the following academic requirements be specified in Regulations:

The applicant shall demonstrate that he or she,

i) has obtained a bachelor's degree in an engineering program from a Canadian university that is accredited by the CEAB, or

ii) has obtained formal academic training that meets one of the Council approved syllabi and can demonstrate academic depth per the approved list of alternatives, or

iii) is a member in good standing of an organization with which PEO is a party to a mutual recognition agreement, or

iv) has completed a Council prescribed program, or

v) has met the minimum academic requirements for a Limited Licence and has completed the ARC assigned examination program.

CARRIED

Moved by President Comrie, seconded by Councillor Fraser:

That Council endorses the Interpretive Statement on Equivalent Engineering Educational Qualifications as presented to the meeting at C-511-2.5, Appendix B.

CARRIED

(b) LPTF Recommendation 9, Passed 16Nov2007 (C-443, Minute

Interpretative Statement on "Equivalent Engineering Educational Qualifications"

Statutory Basis

Section 33.(1) 1. of R.R.O. 1990 Regulation 941 (the Regulations) specifies that the academic requirements for the issuance of a licence is either:

i. a bachelor's degree from a Canadian *engineering program*[1] that is accredited to the Council's satisfaction, or
ii. equivalent engineering educational qualifications recognized by the Council

PEO Council recognizes graduates from engineering programs accredited by the Canadian Engineering Accreditation Board (CEAB) as having met part 33.(1) 1. i of the Regulations. An applicant who did not graduate from a CEAB accredited program is referred to the Academic Requirements Committee (ARC) in accordance with 14. (3) (a) of the Professional Engineers Act to determine whether he or she has met part 33.(1) 1. ii of the Regulations, namely having engineering educational qualifications which are *equivalent* to a CEAB accredited program.

EXPLANATORY NOTES:

To establish "equivalent engineering education qualifications" for the issuance of a license, the ARC follows the principle that every non-CEAB applicant has to **"confirm"** that his or her academic preparation has met the breadth and depth of engineering knowledge defined as follows:

Breadth: is the overall body of knowledge, skills and methodology needed to have sufficient competence to perform engineering work in a particular recognized discipline. It includes the required technical, economic, social and communication content. Breadth is generally defined as the sufficiency of the fundamental engineering principles and professional engineering subjects covered. The breadth of the covered topics is evaluated against the PEO Syllabi.

Depth: Engineering has its roots in mathematics and basic sciences, but carries knowledge further toward creative applications needing derivation and application of theory. The depth of the academic requirement must be seen as the integration of mathematics, basic sciences, engineering sciences and complementary studies in developing elements, systems and processes to meet specific needs. It must include creative, iterative and often open-ended processes subject to constraints. These constraints may relate to economic, health, safety, environmental, social or other pertinent interdisciplinary factors. The depth is evaluated against the Canadian Engineering Accreditation Board (CEAB) criteria for program evaluation.

ARC ASSESSMENT TO "EQUIVALENCY"

An applicant needs to provide written documentation with transcripts and detailed course descriptions for a paper review of their academics. ARC will attempt to evaluate whether or not the degree(s) submitted can be considered **"equivalent engineering education qualifications"** to be recommended to Council for meeting the academic requirements for licensure as stated by Regulation [33. (1) 1. ii]. In order to strive for fairness and consistency ARC has in place a time tested, peer-review process as summarised below.

- **Breadth**:

The ARC compares an applicant's educational qualifications to an appropriate syllabus. PEO has approved a number of discipline-specific syllabi for use in such assessments. These syllabi approximate the academic content found in CEAB accredited programs in the various engineering disciplines. In determining the equivalence of an applicant's educational qualifications, the ARC considers both the breadth and depth of the education. In considering the breadth of the education, it must:

1. correspond to an undergraduate degree equivalent in four-year duration,

[1] Wording to be changed in the present Regulations

2. cover the essential Basic Studies from the syllabus of the discipline the applicant applied for (mathematics, natural sciences, and engineering sciences typically found in the first two years of an engineering curriculum), and
3. includes the syllabi material identified examinations pertaining to:
    - the core discipline-specific courses typically found in the second and third year of an engineering curricula (A level examinations),
    - the upper year specialisation courses recognizing that such course offerings can vary among universities (B level examinations), and
    - the complementary studies (CS level examinations) such as engineering economics, law and ethics, management, and a final capstone project with engineering report.

An applicant's transcript(s), with respective course descriptions, are compared to the topics in the appropriate examination syllabus (or to several syllabi in case of multidisciplinary degrees) to determine the degree of equivalency. ***If the applicant has significant deficiencies with respect to the syllabus, he or she is assigned an examination program specific to the applicant covering the deficient materials.***

- **Depth:**

The CEAB accreditation is the only one that guarantees that each graduate has met the minimum requirements of breadth and depth. Therefore, even if the documentation shows that the technical content of an applicant's education substantially matches the syllabus, the depth of the material must then be confirmed – the depth relates to the academic rigour and technical difficulty of the course material. This evaluation cannot be accomplished solely by a paper review of the documentation. For example, a course in a three year technologist diploma program may have substantially the same description and topic list as a similarly-titled university-level course, but the academic rigour and difficulty (expectation) would typically be significantly higher for the latter offering. The following are the basic considerations when assessing the academic depth:

1. If the applicant has an engineering degree from a country that is signatory to the Washington Accord, the depth of the academic preparation is normally accepted as being equivalent to that of a Canadian engineering degree (Council has decreed that such applicant should be treated as "looking to confirm"). ARC may determine that there are deficiencies in breadth or lack of depth and may assign an examination program.
2. If the applicant has a degree that has a content similar to an accredited engineering degree (could be applied science, applied mathematics, computer science etc.) and meets the breadth requirement a *confirmatory examination program* is assigned. A confirmatory program normally consists of 4 examinations; 2 A-level technical subjects, 1-B level technical subject, and 1 complementary studies subject.
   However if, based on the documentation provided, ARC finds concerns about some deficiencies a *directed confirmatory examination program* may be assigned. A directed confirmatory program specifies up to a maximum of 2 technical and one complementary studies examinations with the remaining examinations being the applicant's choice.
   If the applicant has been assigned a confirmatory or directed confirmatory examination program but has 5 or more years of engineering experience, he or she may be referred to an ERC interview where he or she can demonstrate that his or her experiential knowledge meets the depth of the academic requirements for licensure.
3. If ARC has determined that the applicant's transcripts show major deficiencies a *specific examination program* is assigned to confirm the academic knowledge expectations for licensure. For applicants having a technology diploma or a university degree that is much too remote from engineering to be considered similar to a comprehensive engineering degree a specific examination program can be as much as a full set of examinations assigned covering the content of a similar university level program.
   If the applicant has 10 (for a technologist) or 5 (for a university degree holder) or more years of engineering experience, he or she may be referred to an ERC interview which may lead to a partial or full relief from examinations by ARC. ARC may also grant courses-in-lieu on the applicant's request.
4. Applicants with post graduate degrees having passed graduate level courses in the same or related field of studies as their undergraduate studies may have their academics confirmed without having to write any technical examinations.
5. PEO has built a database over the years, documenting the determination and licensing progress of each applicant. The database provides very valuable historical information on how the application of graduates of different programs has been assessed. If the applicant shows no noticeable gap or weakness in his or her transcripts from a program that has been identified through the database as delivering the depth expected, the academics may be confirmed without having to write any technical examinations.

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511th Council Meeting
March 24, 2017
DISPOSITION OF MOTIONS
(Subject to subsequent Council verification of meeting Minutes)

APPROVAL OF AGENDA	That agenda item 4.8 Policy Respecting PEO's Appeal of Discipline Decisions be removed from the in-camera session into open session. **CARRIED** That: a. the agenda, as presented to the meeting at C-511-1.1, Appendix A be approved as amended; and b. the Chair be authorized to suspend the regular order of business. **CARRIED**
COUNCIL TERM LIMITS TASK FORCE REPORT	a. That Council receives the Council Term Limits Task Force (CTLTF) Report and Recommendations as presented to the meeting at C-511-2.1, Appendix A. b. That the matter be referred back to the Council Term Limits Task Force for further deliberation and that the Task Force report back at the June 2017 Council meeting. c. That the Task Force be given a budget of $2000 to cover the cost of a face-to-face meeting. **CARRIED**
2016 AUDITED FINANCIAL STATEMENTS	That Council: a. approve the Audited Financial Statements for the year ended December 31, 2016, and the Auditor's report thereon, as presented to the meeting at C-511-2.2, Appendix A; and b. authorize the President and President-elect to sign the Audited Financial Statements on Council's behalf. **CARRIED**
RECOMMENDATION OF AN AUDITOR FOR 2017	That Council recommend to members at the April 2017 Annual General Meeting, the appointment of Deloitte LLP as PEO's auditor for 2017 to hold office until the next annual meeting or until their successor is appointed. **CARRIED**
REGULATORY CONFLICT PROTOCOL	That Council approve and adopt the Regulatory Conflict Protocol as presented to the meeting at C-511-2.4, Appendix A, and authorize the Registrar to take the necessary actions. **CARRIED**
LICENSING COMMITTEE – RESCINDING AND REPLACING COUNCIL RESOLUTIONS REGARDING	**Required a 2/3 majority of votes cast to carry** **(a) LPTF Recommendations 8 and 10, Tabled 16Nov2007 (C-443, Minute #10445) and reintroduced as a single resolution Passed 25Jan2008 (C-445, Minute #10477) redefining the academic requirement**

LICENSING PROCESS TASK FORCE (LPTF) RECOMMENDATIONS THAT REQUIRED REGULATION CHANGES NOTE: "Approved syllabi" measure "academic breadth"	That the following resolution be rescinded: That the following academic requirements be specified in Regulations: The applicant shall demonstrate that he or she, (i) has obtained a bachelor's degree in an engineering program from a Canadian university that is accredited by the CEAB, or (ii) has obtained formal academic training that meets one of the Council approved syllabi and can demonstrate academic depth per the approved list of alternatives, or (iii) is a member in good standing of an organization with which PEO is a party to a mutual recognition agreement, or (iv) has completed a Council prescribed program, or (v) has met the minimum academic requirements for a Limited Licence and has completed the ARC assigned examination program. **CARRIED** **Required a simple majority of vote cast to carry** That Council endorses the Interpretive Statement on Equivalent Engineering Educational Qualifications as presented to the meeting at C-511-2.5, Appendix B. **CARRIED** **Required a 2/3 majority of votes cast to carry** **(b) LPTF Recommendation 9, Passed 16Nov2007 (C-443, Minute #10445) re confirmatory examinations** That the following resolution be rescinded: 9. That a new regulation be added requiring all applicants for a licence to demonstrate that they meet the academic depth requirement by passing confirmatory examinations, unless exempted by the regulation, and establishing: • The normal confirmatory examination program for applicants who fully meet the academic breadth requirement; • The directed confirmatory examination program for applicants who do not fully meet the academic breadth requirement; • Exemptions for good performance on examinations; • Additional requirements for poor performance on examinations **CARRIED** **(c) LPTF Recommendations 11 and 12, Tabled 16Nov2007 (C-443, Minute #10445) and reintroduced as a single resolution Passed 25Jan2008 (C-445, Minute #10477) to define PEO's standards for "good performance" and "poor performance" on examinations in the Regulations** That the following resolution be rescinded: That PEO's current standard for "Good Performance" and "Poor Performance" on examinations be included in the Regulations.

CARRIED

Required a simple majority of vote cast to carry

That the criteria for assigning confirmatory examinations programs not be enshrined in the Regulations, but instead, that the Explanatory Note on PEO`s Examination Process as presented to the meeting at C-511-2.5, Appendix C be approved.

CARRIED

The following motions all required a 2/3 majority of votes cast to carry

(d) LPTF Recommendation 16, Passed 16Nov2007 (C-443, Minute #10445) re referencing Experience Guide in Regulations

That the following resolution be rescinded:
That the experience requirements in the Regulations be emended to reference PEO's *Guide to the Required Experience for Licensing as a Professional Engineer in Ontario*.

CARRIED

(e) LPTF Recommendation 18, Passed 16Nov2007 (C-443, Minute #10445) re objective criteria for academic equivalency

That the following resolution be rescinded:
That all applicants whose academic credentials do not meet an objective criterion set out in the Regulations or established by Council resolution be referred by the Registrar to the Academic Requirements Committee (ARC) for assessment as to whether or not they meet PEO's academic breadth and depth requirements for licensure. The following objective criteria should be placed in the Regulations:

- Graduates of a CEAB-accredited engineering program;
- Applicants who qualify under the CCPE Inter-Association Mobility Agreement (IAMA).

and the following objective criteria should be established by Council resolution:

- Graduates of academic programs for whom a standard treatment has been approved by Council resolution

CARRIED

(f) LPTF Recommendation 27, Passed 16Nov2007 (C-443, Minute #10445) re national mobility

That the following resolution be rescinded:
That a new regulation be added to cover licensing of applicants already registered in another jurisdiction with which PEO has in place a mobility agreement, by which such applicants will be deemed to meet all requirements for licensure except for the good character requirement with the following provisions:

a) The applicant has successfully passed a Professional Practice Examination in a Canadian jurisdiction, or has been licensed to practise professional engineering in a Canadian jurisdiction for at least five (5) years; and
b) The applicant has provided satisfactory evidence of having at least twelve (12) months of Canadian experience that meets the requirements of subsection 33. (3) 3. of this

C-566-9.1
Appendix G

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Regulators Guideline on the Academic Assessment of Non-Canadian Engineering Accreditation Board Applicants

National guideline 2018

Notice

Disclaimer

Engineers Canada's national guidelines and Engineers Canada papers were developed by engineers in collaboration with the provincial and territorial engineering regulators. They are intended to promote consistent practices across the country. They are not regulations or rules; they seek to define or explain discrete topics related to the practice and regulation of engineering in Canada.

The national guidelines and Engineers Canada papers do not establish a legal standard of care or conduct, and they do not include or constitute legal or professional advice.

In Canada, engineering is regulated under provincial and territorial law by the engineering regulators. The recommendations contained in the national guidelines and Engineers Canada papers may be adopted by the engineering regulators in whole, in part, or not at all. The ultimate authority regarding the propriety of any specific practice or course of conduct lies with the engineering regulator in the province or territory where the engineer works, or intends to work.

About this Engineers Canada paper

This national Engineers Canada paper was prepared by the Canadian Engineering Qualifications Board (CEQB) and provides guidance to regulators in consultation with them. Readers are encouraged to consult their regulators' related engineering acts, regulations and bylaws in conjunction with this Engineers Canada paper.

About Engineers Canada

Engineers Canada is the national organization of the provincial and territorial associations that regulate the practice of engineering in Canada and license the country's 295,000 members of the engineering profession.

About the Canadian Engineering Qualifications Board

CEQB is a committee of the Engineers Canada Board and is a volunteer-based organization that provides national leadership and recommendations to regulators on the practice of engineering in Canada. CEQB develops guidelines and Engineers Canada papers for regulators and the public that enable the assessment of engineering qualifications, facilitate the mobility of engineers, and foster excellence in engineering practice and regulation.

Summary

- Regulators are responsible for ensuring public safety. To that end, they must ensure that all license holders have a certain minimum acceptable breadth and depth in education to practise engineering safely in Canada.
- All applicants are entitled to an individualized, fair, transparent, and reasonable assessment process.
- To determine that the academic requirement has been met, regulators must: confirm the authenticity of academic documents; assess breadth and depth of education; and confirm the breadth and depth of education of an applicant.
- Regulators must be able to demonstrate that their processes for assessing education outside of the Canadian accreditation system are adopted for a rational purpose, in an honest and good faith belief that they are necessary for the accomplishment of the purpose.

Background

It is the regulators' statutory obligation to protect and serve the public interest. To achieve this goal, they seek to reduce public risk by adopting processes to ensure that only competent individuals obtain a licence. Competence in engineering requires knowledge of the theoretical basis of engineering, which is typically achieved through university-level education. Three important aspects must be included in the assessment of academic requirements:

1. authentication and verification of academic documents
2. assessment of breadth and depth of education
3. confirmation of breadth and depth of education

To ensure public safety, regulators should confirm the depth and breadth of education of each applicant in a demonstrable way, regardless of degree origin or degree name.

On behalf of Canadian engineering regulators, the Canadian Engineering Accreditation Board (CEAB) accredits programs at Canadian Higher Education Institution (HEIs). Based on the rigorous standards set by the CEAB, graduates of accredited engineering programs are accepted as having confirmed breadth and depth of education. The purpose of this Guideline is to present high-level guiding principles for the assessment of an applicant who does not possess a CEAB degree nor a degree that has been recognized by the CEAB, with the intended outcome to foster consistent assessment outcomes across the country.

Guiding principles for assessment of education of a non-Canadian Engineering Accreditation Board applicant

The guiding principles for the assessment of a non-CEAB applicant are:

1. Assessment processes must be individualized.
2. Assessment processes must be fair.
3. Education documents must be authenticated and verified.
4. Assessment of breadth and depth of education should be primarily quantitative and partly qualitative.
5. Confirmation of breadth and depth of education is a requirement for all applicants.
6. Flexibility should be allowed between breadth and depth, as long as a minimum threshold is met.

The following section provides a description of each guiding principle:

1. Assessment processes must be individualized.

Each applicant should be assessed, beyond simply categorizing the applicant based on the applicant's institution of study. This assessment may involve multiple tools that assess an applicant's education.

2. Assessment processes must be fair.

Regulator processes should be based on all presented evidence, free from discriminatory assumptions, and provide an applicant with a mechanism to demonstrate education. All university-level education, as validated by authenticated and verified academic documents, should be considered by regulators.

Regulators should continue ensuring that their processes are fair and meet the following criteria:

- *Substantive fairness:* the decision is the result of pre-determined and defensible criteria, understandable to applicants.
- *Procedural fairness:* the assessment procedure is clear, transparent, timely, and provides an equal opportunity to all applicants to demonstrate their education.

Regulators should continue to provide justified, transparent, and explicit reasons for the assessment process and its outcome and consider the perspective of applicants in their processes.

3. Education documents must be authenticated and verified.

Documents submitted by the applicant seeking licensure should be authenticated and verified by recognized resources. Regulators are encouraged to ensure that their organizations, or those performing academic document authentication and verification on their behalf, follow the practices identified in the Pan-Canadian Quality Assurance Framework for the Assessment of International Academic Credentials.

4. Assessment of breadth and depth of education should be primarily quantitative and partly qualitative.

The assessment of breadth and depth of education seeks to determine that each applicant possesses sufficient education in mathematics, natural sciences, complementary studies, engineering science, and design. A minimum quantitative threshold for breadth and depth is recommended to ensure consistency in treatment and outcome. Regulators, at their discretion, may use different quantitative measures. A subsequent qualitative assessment by a qualified reviewer to confirm the coherence and specialization of the education profile may be performed.

5. Confirmation of breadth and depth of education is a requirement for all applicants.

Through the assessment process, the regulator seeks to establish an acceptable level of confidence in the breadth and depth of the applicant's education. This level of confidence may be confirmed through the use of tools such as mutual recognition agreements between countries or evaluation of the applicant's knowledge through methods such as written examinations, work experience, post-graduate education, and/or an interview or oral examinations, etc.

6. Flexibility should be allowed between breadth and depth, as long as a minimum threshold is met.

CEAB allows for some curriculum flexibility within its standard of breadth and depth; it is normal for engineering education to be structured with balance between these two elements. Similarly, regulators are encouraged to adopt a minimum threshold for breadth and depth and exercise some flexibility in assessing balance between these two requirements.

Conclusion

The Guideline on the Assessment of a non-CEAB Applicant provides high-level principles to guide regulators in their education assessment processes with the intended outcome of continuing to foster harmonization and achieve consistent outcomes across jurisdictions. Regulators are encouraged to consider or continue including these principles in their assessment processes.

Definitions

Authentication and verification of education documents: confirmation that the institution and degree of the applicant exists, is possessed by the applicant and is recognized in the country of origin by a government-designated or other competent authority.

Breadth: amount and type of theoretical and practical knowledge that an applicant has in mathematics, natural sciences, engineering science, engineering design, and related professional skills.

Depth: level of theoretical and practical knowledge that an applicant has in mathematics, natural sciences, engineering science, engineering design, and related professional skills.

Education: A body of knowledge acquired while being educated (Oxford Dictionary, available online, https://en.oxforddictionaries.com/definition/education)

Reasonable assessment: reasonableness is defined in *British Columbia (Public Service Employee Relations Commission) v. BCGSEU*, (sometimes called the Meiorin test) “Under the third element of the unified approach, the employer must establish that the standard is reasonably necessary to the accomplishment of that legitimate work-related purpose. To show that the standard is reasonably necessary, it must be demonstrated that it is impossible to accommodate individual employees sharing the characteristics of the claimant without imposing undue hardship upon the employer. In the case on appeal, the contentious issue is whether the Government has demonstrated that this particular aerobic standard is reasonably necessary in order to identify those persons who are able to perform the tasks of a forest firefighter safely and efficiently. As noted, the burden is on the government to demonstrate that, in the course of accomplishing this purpose, it cannot accommodate individual or group differences without experiencing undue hardship”.

Ontario Office of the Fairness Commissioner, The Fair Access Law and Regulators’ Responsibilities online, http://www.fairnesscommissioner.ca/files_docs/content/pdf/en/the-fair-access-law-and-regulators-responsibilities-may-2014-english.pdf, p.2.

C-566-9.1
Appendix H

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Regulators Guideline on the Use of Examination Syllabi

Regulators Guideline October 2019

Background

The Canadian Engineering Qualifications Board (CEQB) is responsible for maintaining and developing examination syllabi for provincial and territorial regulators. These examination syllabi comprise one of the tools available to regulators to individually assess education and confirm knowledge of non-Canadian Engineering Accreditation Board (CEAB) accredited program applicants. This Regulator Guideline falls under the Public Guideline on Admission to the Practice of Engineering in Canada and the Regulator Guideline on the Academic Assessment of Non-Canadian Engineering Accreditation Board Applicants (log-in required) and should also be consulted when reading this document.

Examination syllabi represent the body of knowledge typically covered in similar accredited engineering programs in Canada in a particular discipline of engineering. Their content is not necessarily a minimum number of courses or credits and should not be interpreted as a presciptive list of topics. Just as for CEAB accredited programs, institutions have the flexibility to develop their own ares of focus within a discipline, and reviewers should keep that in mind while assessing content, provided that the education is coherent.

As a result, it is not the intention that an applicant's education must exactly match the defined examination syllabi in order to be acceptable. They should be used by the examiner as guidance when using judgement to determine if the core topics, typically present in a CEAB-accredited program, are found or can be inferred as present in a non-CEAB applicant's education. They should also be used by exam developers, along with their associated textbooks, to develop examinations.

Examination syllabi are divided according to the following categories:

- Basic studies: foundational math and science topics, common to most disciplines;
- Complementary studies: safety, economics, sustainability and engineering management topics, common to CEAB programs; and
- Discipline-specific studies: divided by:
  - Group A (common topics across all reviewed accredited programs)
  - Group B (other topics that are found in programs but not common to all)

The purpose of this document is to provide guidance to regulators on how their reviewers can use examination syllabi. A template for reviewers to record their assessment results is provided in Annex 1.

Guiding principles for the use of examination syllabi

- All applicable and authenticated/verified education should be considered.
- An engineering education must include sufficient breadth and depth in math, complementary studies, natural sciences, and engineering science/design, regardless of the program's name.
- Engineering education should demonstrate progression from concept introduction to complex problem solving, as well as coherence of subject matter related to the discipline of study.

Overview of the process

The education content should be documented according to the four categories of math, natural sciences, complementary studies and engineering science/design. These four categories are already present in the Engineers Canada examination syllabi, they are just organized differently.

To ensure that an appropriate level of mastery is reached, it is proposed that the new process use the CEAB content level codes of Introduced, Developed and Applied (I-D-A), which are also typically found in the existing syllabi under basic studies, complementary studies and Group A and Group B examinations without being explicitly categorized as such.

Under this I-D-A process, the reviewer is asked to read the transcript(s) content, identify distinct areas of knowledge, and record them in the example template, at the appropriate level (I-D-A). Regulators, at their discretion, can decide to ask applicants to fill the template prior to being submitted for reviewers' assessment. The I-D-A content is described as follows:

- **Introduced (I):** Typically found during the first and second year, students learn the working vocabulary of the area of content, along with some of the major underlying concepts. Many of the terms need defining and the ideas are often presented in a somewhat simplified way. For this level, a minimum of seven distinct areas of knowledge should be identified, with one in complementary studies, and at least one in each of math, natural sciences and engineering science/design. These topics are typically found in basic studies as well as discipline-specific Group A examinations.
- **Developed (D):** Typically found during the second and third year, students use their working vocabulary and major fundamental concepts to begin to probe more deeply, to read the literature, and to deepen their exploration into concepts. At this level, students can begin to appreciate that any field of study is a complex mixture of sub-disciplines with many different levels of organization and analysis. A minimum of six distinct areas of knowledge, primarily from engineering science/design should be identified at this level. These topics can be found in basic

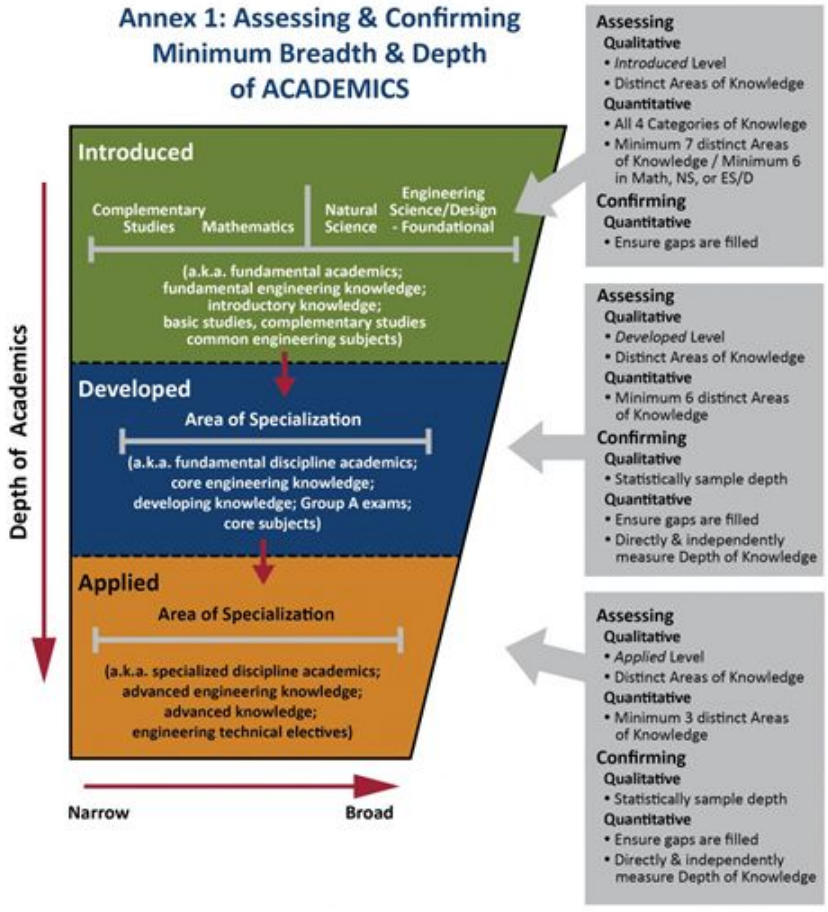
studies as well as discipline-specific Group A and Group B examinations.

- **Applied (A):** Typically found during the third and fourth year, students approach mastery in the area of content. They explore deeply into the discipline and experience the controversies, debate and uncertainties that characterize the leading edges of any field. An advanced student can be expected to be able to relate course material across different courses, to begin to synthesize and integrate and achieve fresh insights. Students at this level are working with the knowledge very differently, perhaps even creating new knowledge through independent investigation. At this stage, students can demonstrate sub-specializations within their specializations. A minimum of three distinct areas of knowledge within engineering science/design should be identified for this level. These topics are typically found in Group B examinations.

Although a minimum number of distinct areas of knowledge are suggested for each of the three I-D-A levels, some flexibility should be allowed to ensure that the profession remains open to competent individuals. Substitution with other tools should be allowed when distinct areas of knowledge are not present in the education content, especially when confirming engineering science/design.

Once the transcript's content has been documented on the template, the reviewer is then asked to provide an opinion on coherence of education, which should include information on progression of knowledge, perceived academic gaps and alignment of content throughout the three levels (I-D-A).

To identify gaps and provide a recommended treatment, the reviewer should use the examination syllabi, and consider consulting CEAB programs, previous assessment results and their own expertise, with documented justifications. To determine the number of confirmatory or gap-filling examinations, reviewers can refer to their own jurisdictional-specific policies on number of examinations and thresholds. The overall process can be illustrated as following:



The Annex of this document provides an example template that can be used as a framework to illustrate how this process can be partly or fully implemented by regulators.

Conclusion

This document provides a proposed way to use examination syllabi that provides a framework to regulators to apply when using the syllabi, which hopefully results in more flexibility in the assessment of education and confirmation of knowledge. Regulators, at their discretion, may choose to use this approach as a whole, or partly, along with other tools that they normally use to assess applicants.

Annex

Instructions for examiners

C-566-9.1
Appendix I

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Canadian Engineering Accreditation Board

Bureau canadien d'agrément des programmes de génie

2023 Accreditation Criteria and Procedures ● Normes et procédures d'agrément 2023

Revised October 2023/ Révisé en octobre 2023

Accreditation Criteria and Procedures

Engineers Canada is the national organization of the 12 provincial and territorial associations that regulate the practice of engineering and license the country's 300,000 members of the engineering profession. Established in 1936, Engineers Canada serves the associations, which are its constituent and sole members, through the delivery of national programs which ensure the highest standards of engineering education, professional qualifications and professional practice. Engineers Canada is the voice of its member engineering regulators in national and international affairs, and promotes greater understanding of the nature, role and contribution of professional engineers and engineering to society.

The Accreditation Board is a standing committee of Engineers Canada.

ISSN 1708-8054

Normes et procédures d'agrément

Ingénieurs Canada est l'organisme national regroupant les 12 ordres provinciaux et territoriaux qui réglementent l'exercice du génie au Canada et qui délivrent les permis d'exercice aux ingénieurs du pays, actuellement près de 300 000. Créé en 1936, Ingénieurs Canada est au service de ces ordres, qui sont ses organismes de réglementation exclusifs; il leur offre des programmes nationaux qui visent à assurer le respect des normes les plus rigoureuses en ce qui concerne la formation en génie, les compétences professionnelles et l'exercice de la profession. Ingénieurs Canada est aussi le porte-parole de ses organismes de réglementation en matière d'affaires nationales et internationales et il favorise une meilleure compréhension de la nature, du rôle et de l'apport de la profession d'ingénieur dans la société.

Le Bureau d'agrément est un comité permanent d'Ingénieurs Canada.

ISSN 1708-8054

Revision history

LEGEND: ~~Deleted~~ / Added text

Version	Criterion/Appendix	Description of changes
2023	**New appendix**	A new document about **Temporary Exemption for Students Going on International Exchange** has been added as Appendix 18.
2022	**Criterion 3.1 - Graduate attribute #4: Design**	Design: ~~**An ability to design solutions for complex, open-ended engineering problems and to design systems, components or processes that meet specified needs with appropriate attention to health and safety risks, applicable standards, and economic, environmental, cultural and societal considerations**~~. **The ability to perform engineering design. Engineering design is a process of making informed decisions to creatively devise products, systems, components, or processes to meet specified goals based on engineering analysis and judgement. The process is often characterized as complex, open-ended, iterative, and multidisciplinary. Solutions incorporate natural sciences, mathematics, and engineering science, using systematic and current best practices to satisfy defined objectives within identified requirements, criteria and constraints. Constraints to be considered may include (but are not limited to): health and safety, sustainability, environmental, ethical, security, economic, aesthetics and human factors, feasibility and compliance with regulatory aspects, along with universal design issues such as societal, cultural and diversification facets.**
	Criterion 3.4.4.5	A minimum of 225 AU in engineering design is required. ~~**Engineering design integrates mathematics, natural sciences, engineering sciences, and complementary studies in order to develop elements, systems, and processes to meet specific needs. It is a creative, iterative, and open-ended process, subject to constraints which may be governed by standards or legislation to varying degrees depending upon the discipline. These constraints may also relate to economic, health, safety, environmental, societal or other interdisciplinary factors**~~. **Engineering design is a process of making informed decisions to creatively devise products, systems, components, or processes to meet specified goals based on engineering analysis and judgement. The process is often characterized as complex, open-ended, iterative, and multidisciplinary. Solutions incorporate natural sciences, mathematics, and engineering science, using systematic and current best practices to satisfy defined objectives within identified requirements, criteria and constraints. Constraints to be considered may include (but are not limited to): health and safety, sustainability, environmental, ethical, security, economic, aesthetics and human factors, feasibility and compliance with regulatory aspects, along with universal design issues such as societal, cultural and diversification facets.**
	New appendix	A new **Interpretive statement on the definition of engineering design** has been added as Appendix 17.
2021	**Appendix 3 – Interpretive statement on licensure expectations and requirements**	8. ~~**In order to ensure that**~~ Engineering science, engineering design, natural science, mathematics and complementary studies curriculum content **should be** ~~**are**~~ readily and easily identifiable **through learning outcomes, learning activities and assessments attributable to each category in each course where they appear.** ~~**, each course in an engineering program should be described using a maximum of three curriculum categories (ES, ED, NS, Math, CS) with no single category constituting less than 8 AUs or 25% of the total AU for a particular course.**~~

	~~9. It is up to the institution offering the program to justify the unique aspects of any course that deviates from clause 9.~~
Appendix 10 – Confidentiality: policies and procedures	The following changes/deletions were made to throughout this appendix to replace Engineers Canada Executive Committee with Engineers Canada Board. The Formal Review Committee, established by the ~~Engineers Canada Executive Committee~~ Engineers Canada Board, will establish its own confidentiality policy. However, this policy must be within the spirit of the general policy statement unless otherwise required by subsequent legal action. **2. Individuals and organizations** *2.1 Members of the Accreditation Board* The Accreditation Board consists of 20 voting members appointed by the Engineers Canada Board, and a non-voting secretary. ~~A member of the Engineers Canada Executive Committee and a member of the Engineers Canada Board are ex-officio non-voting members of the Accreditation Board.~~ ~~The designated Engineers Canada Executive Committee representative and the member of the Engineers Canada Board of Directors designated to the Accreditation Board are ex-officio non-voting members of the Accreditation.~~
Appendix 16 – Procedures for formal review of an Accreditation Board decision to deny accreditation	The following changes/deletions were made to throughout this appendix to replace Engineers Canada Executive Committee with Engineers Canada Board. Committee members must be able to act in an unbiased and impartial manner. They must have no real or apparent conflict of interest or recent involvement with the institution (or with its faculty of engineering). They must not have been directly involved in the development or delivery of the program in question or in the accreditation decision-making process. All members of the Review Committee shall be licensed professional engineers in Canada. The institution and the Accreditation Board's Executive Committee can object, with demonstrated grounds with respect to conflict of interest, to any member of the Review Committee. Ruling on such objections shall be made by ~~Engineers Canada's Executive Committee~~ the Engineers Canada Board, with such rulings to be final and binding. **5. Authority of the Review Committee** The Review Committee is charged by the ~~Executive Committee of Engineers Canada~~ Engineers Canada Board to review the stated grounds for the formal review. In particular the Review Committee is charged with determining whether valid grounds as defined in Section 4, above, have been demonstrated and, if so, whether these grounds could have affected the decision. The Review Committee does not consider improvements to the program made subsequent to the accreditation decision. **9. Recommendations and decisions** The Review Committee decides on its recommendation in an in-camera session following the hearing. The decision is made by a majority of members of the Review Committee. The Review Committee reports its recommendation in writing, together with a summary of the evidence and the reasons for the recommendation, to **the** ~~Executive Committee of Engineers Canada~~ Engineers Canada Board within 30 days of the conclusion of the hearing. While a consensus report is desirable, all members nevertheless have the right to provide an appendix to the report providing their opinions. Immediately thereafter, the chief executive officer transmits copies of the Review

		Committee's report to the institution and to the Accreditation Board. The Review Committee may make one of the following recommendations: _____ 9.1.4 no conflict of interest has been demonstrated. Therefore, the Review Committee would recommend to ~~Engineers Canada's Executive Committee~~ the Engineers Canada Board that there be no change in the action taken by the Accreditation Board regarding the accreditation of the program under review. _____ 9.2.4 conflict of interest has been demonstrated. Therefore, the Review Committee would recommend to ~~Engineers Canada's Executive Committee~~ the Engineers Canada Board that the matter be sent back to the Accreditation Board and that the Accreditation Board be instructed to reconsider its decision to deny or terminate accreditation of the program under review, taking into account the finding of the Review Committee. _____ **10. Reconsideration by the Accreditation Board** When ~~Engineers Canada's Executive Committee~~ the Engineers Canada Board sends the matter back to the Accreditation Board, the Accreditation Board reconsiders the accreditation decision, taking into account the Report of the Review Committee and any clarifying information it may require from that Committee or the institution. The reconsideration shall occur within 60 days of receipt of the decision from the chief executive officer. This will occur at the next regular meeting of the Accreditation Board, if such occurs within that time period, otherwise a special meeting of the Accreditation Board will be convened to hear the case. The Accreditation Board may confirm its decision to deny or terminate accreditation or it may accredit the program.
2020	**2. Purpose of accreditation**	This section now includes Engineers Canada Board motion #5596, as approved in September 2016.
	Criterion 3.4.6	The program must have a minimum of 1,850 ~~1,950~~ Accreditation units that are at a university level.
	Appendix 7 – Interpretive statement on accreditation unit categories	This appendix has been updated to reflect the change made to criterion 3.4.6. All references to ~~405~~ accreditation units "beyond the minimum sub-total of 1,545 AUs arising from the five specified AU categories" have been adjusted to 305 to reflect the new minimum requirement of 1,850 AUs.
2019	**1. CEAB Terms of reference**	The Canadian Engineering Accreditation Board's ~~terms of reference~~ has been removed as they are no longer reproduced in this document. They can be viewed at the following link under section 6.9: https://engineerscanada.ca/sites/default/files/2022-02/Board-Policy-Manual-Combined-e.pdf
	Criterion 3.1.5	**Assessment results:** At least one set of assessment results must be obtained for all twelve attributes over a period ~~cycle~~ of six years or less. The results should provide clear evidence that graduates of a program possess the above list of attributes
	New criterion	**3.4.4.1 A minimum of 600 Accreditation Units (AU) of a combination of engineering science and engineering design curriculum content in an engineering program shall be delivered by faculty members holding, or progressing toward, professional engineering licensure as specified in the *Interpretive statement on licensure expectations and requirements*.**

Criterion 3.4.4.1	~~3.4.4.1~~ 3.4.4.2 A minimum of 225 AU in engineering science is required. Engineering science subjects involve the application of mathematics and natural science to practical problems. They may involve the development of mathematical or numerical techniques, modeling, simulation, and experimental procedures. Such subjects include, among others, the applied aspects of strength of materials, fluid mechanics, thermodynamics, electrical and electronic circuits, soil mechanics, automatic control, aerodynamics, transport phenomena, and elements of materials science, geoscience, computer science, and environmental science.
Criterion 3.4.4.2	~~3.4.4.2~~ 3.4.4.3 In addition to program-specific engineering science, the curriculum must include engineering science content that imparts an appreciation of the important elements of other engineering disciplines.
Criterion 3.4.4.3	~~3.4.4.3~~ 3.4.4.5 A minimum of 225 AU in engineering design is required. Engineering design integrates mathematics, natural sciences, engineering sciences, and complementary studies in order to develop elements, systems, and processes to meet specific needs. It is a creative, iterative, and open-ended process, subject to constraints which may be governed by standards or legislation to varying degrees depending upon the discipline. These constraints may also relate to economic, health, safety, environmental, societal or other interdisciplinary factors.
New criterion	**3.4.4.4 A minimum of 225 AU of engineering design curriculum content in an engineering program shall be delivered by faculty members holding professional engineering licensure as specified in the *Interpretive statement on licensure expectations and requirements*.**
Criterion 3.4.4.4	~~3.4.4.4~~ 3.4.4.6 The engineering curriculum must culminate in a significant design experience conducted under the professional responsibility of faculty licensed to practise engineering in Canada. The significant design experience is based on the knowledge and skills acquired in earlier work and it preferably gives students an involvement in team work and project management.
Criterion 3.4.4.5	~~3.4.4.5~~ 3.4.4.7 Appropriate content requiring the application of modern engineering tools must be included in the engineering sciences and engineering design components of the curriculum.
Appendix 1 – Regulation for granting transfer credits	A new clause has been introduced under Article 2.3: **(new clause) 2.3.1 For engineering programs in HEIs designed to admit students from two-year pre-university programs given in CEGEPs, for which a one year of academic upgrading (preparatory studies) exists for students who have completed 12 years of primary and secondary studies (outside of the CEGEP system), the following restrictions apply:** **a. A validation procedure equivalent to that of Article 2.3 must be in place** **b. Engineering Science and Design: 0 AU** **c. Mathematics: ≤180 AU** **d. Natural Sciences: ≤ 180 AU** **e. Complementary Studies: ≤ 120 AU;** **No credit will be given for the following subjects: Engineering Economics, Impact of Technology on Society, Health and Safety, Professional Ethics, Equity and Law, or Environmental Stewardship and Sustainable Development.** ~~2.3.1~~ 2.3.2 For 2-year pre-university CEGEP programs for which the validation procedure in article 2.3 herein is not performed, the following restrictions apply: a. Engineering science and engineering design: 0 AU

	b. Mathematics: ≤ 112 AU c. Natural science: ≤ 112 AU d. Complementary studies: ≤ 112 AU; No credit is given for the following: engineering economics, impact of technology on society, oral and written communication, health and safety, professional ethics, equity and law, or environmental stewardship and sustainable development. e. Total (b)+(c)+(d) ≤ 225 AU
Appendix 3 – Interpretive statement on licensure expectations and requirements	This appendix has been changed to reflect the introduction of Criteria 3.4.4.1 and 3.4.4.4, and wording was adjusted: 6. ~~A minimum of 600 Accreditation Units (AU) of a combination of engineering science and engineering design curriculum content in an engineering program shall be delivered by faculty members holding, or progressing toward, professional engineering licensure as specified in points 1 and 4 above.~~ ~~Thus,~~ Faculty members who are within five years of their first-time appointment in a Canadian engineering school (and other instructors, such as adjuncts and sessionals, in the registration process) and are actively pursuing licensure can be counted for courses involving engineering science to satisfy the 600 AU of engineering science and engineering design minimum. 7. ~~A minimum of 225 AU of engineering design curriculum content in an engineering program shall be delivered by faculty members holding professional engineering licensure (as specified in point 1, only, above).~~ ~~8. In respect of 6 and 7 above,~~ For team-taught courses, and in the case of multiple sections of a particular course, a "minimum path" approach is taken toward establishing the total AU actually delivered by licensed faculty (as specified in point 1, only, above). For duplicate sections all instructors must meet the licensure requirements in order for the AU to be counted. If the course is team-taught then it must be clear that the engineering science and engineering design components are delivered by faculty holding professional engineering licensure. In some cases, for team-taught courses, a fraction of the total AU could be claimed. All subsequent clause numbers have been changed to reflect deletion of clause 7.
Appendix 7 – Interpretive statement on significant program change	Appendix 7 regarding ~~Interpretive statement on significant program change~~ has been effectively removed as per note in 2018 version.
Appendices 8 to 12	As a result of the above removal, the following renumbering applies: Appendix ~~8~~7 – Interpretive statement on Accreditation Unit categories Appendix ~~9~~8 – Interpretive statement on Graduate Attributes Appendix ~~10~~9 – Interpretive statement on Continual Improvement Appendix ~~11~~10 – Confidentiality: policies and procedures Appendix ~~12~~11 – Conflicts of interest guidelines
Appendix 9 (now 8) – Interpretive statement on Graduate Attributes	This appendix has been changed to reflect the wording currently existing in criterion 3.1.5: 3.1.5 The Accreditation Board expects that ~~a set of~~ assessment results will be obtained regularly, ~~each year,~~ with results for all twelve attributes obtained over a period ~~cycle~~ of six years or less. These periodic assessment results are in support of the continual improvement process. Most often, activity specific assessment results are to be provided in the form of achievement levels. These indicate the levels of student achievement with respect to the assessment tool

		used, and will typically be on a four-point scale: Fails to meet expectations, Minimally meets expectations, Adequately meets expectations, Exceeds expectations.
	New Appendix	A new **CEAB Complaints Policy** has been added as Appendix 12.
2018	**Criterion 3.4.5**	**A minimum of 225 AU of complementary studies:** Complementary studies include humanities, social sciences, arts, **languages**, management, engineering economics and communications ~~**that complement the technical content of the curriculum**~~**.**
	Criterion 3.4.5.1 (d)	The impact of **technology and/or** engineering on society.
	Criterion 3.4.5.2	~~**3.4.5.2 Language instruction may be included within complementary studies provided it is not taken to fulfill an admission requirement. Furthermore, curriculum content that principally imparts language skills can be counted toward the required AU of complementary studies but cannot be used to satisfy the requirements for subject matter that deals with central issues, methodologies, and thought processes of the humanities and social sciences.**~~
	Appendix 3 – Interpretive statement on licensure expectations and requirements	This appendix has been changed to reflect the wording currently existing in criteria 3.5.3 and 3.5.5 • 3.5.3 - The dean of engineering (or equivalent officer) and the head of an engineering program (or equivalent officer with overall responsibility for each engineering program) are expected to provide effective leadership in engineering education and to have high standing in the engineering community. They are expected to be engineers licensed to practice in Canada. To evaluate this criterion, the Accreditation Board will rely on the *Interpretive statement on licensure expectations and requirements*, which is attached as an appendix to this document. • 3.5.5 - Faculty delivering curriculum content that is engineering science and/or engineering design are expected to be licensed to practise engineering in Canada. To evaluate this criterion, the Accreditation Board will rely on the Interpretive statement on licensure expectations and requirements, which is attached as an appendix to this document.
	Appendix 7 – Interpretive statement on significant program changes	This appendix has been **removed** as the Program Development Advisory Process (PDAP) (Appendix 13) suits the initial purpose of the statement.

Historique des révisions

LÉGENDE: ~~Supprimé~~ / Texte ajouté

Version	Norme/Annexe	Description des changements
2023	**Nouvelle annexe**	Une nouvelle annexe intitulée **Exception provisoire pour les étudiants qui participent à des échanges internationaux** a été ajoutée comme annexe 18.
2022	**Norme 3.1 –Qualités requises des diplômés #4: Conception**	Conception : ~~**capacité de concevoir des solutions à des problèmes d'ingénierie complexes et évolutifs et de concevoir des systèmes, des composants ou des processus qui répondent aux besoins spécifiés, tout en tenant compte des risques pour la santé et la sécurité publiques, des aspects législatifs et réglementaires, ainsi que des incidences économiques, environnementales, culturelles et sociales.**~~ **La capacité d'effectuer une conception en ingénierie. La conception en ingénierie est un processus consistant à prendre des décisions éclairées pour concevoir de façon créative un produit, un système, un composant ou un procédé devant répondre à des besoins précisés, en tirant parti de l'analyse et du jugement de l'ingénierie. Ce processus est souvent caractérisé comme étant complexe, évolutif, itératif et multidisciplinaire. Les solutions qui en sont issues font appel aux sciences naturelles, aux mathématiques et aux sciences du génie, ainsi qu'à des pratiques systématiques et exemplaires actuelles afin de satisfaire à des objectifs définis, dans le respect des exigences, des normes et des contraintes établies. Parmi les contraintes à prendre en considération, citons la santé et la sécurité, la durabilité, l'environnement, l'éthique, la sûreté, l'économie, les facteurs esthétiques et humains, la faisabilité et la conformité aux aspects réglementaires, de même que des enjeux universels en matière de conception, comme les aspects sociaux, culturels et de diversification.**
	Norme 3.4.4.5	Minimum de 225 UA en conception en ingénierie. ~~**La conception en ingénierie intègre les mathématiques, les sciences naturelles, les sciences du génie et les études complémentaires pour développer des éléments, des systèmes et des processus qui répondent à des besoins précis. Il s'agit d'un processus créatif, itératif et évolutif qui est assujetti à des contraintes pouvant être régies par des normes ou des lois à divers degrés selon la spécialité. Ces contraintes peuvent être liées à des facteurs comme l'économie, la santé, la sécurité, l'environnement et la société ou à d'autres facteurs interdisciplinaires.**~~ **La conception en ingénierie est un processus consistant à prendre des décisions éclairées pour concevoir de façon créative un produit, un système, un composant ou un procédé devant répondre à des besoins précisés, en tirant parti de l'analyse et du jugement de l'ingénierie. Ce processus est souvent caractérisé comme étant complexe, évolutif, itératif et multidisciplinaire. Les solutions qui en sont issues font appel aux sciences naturelles, aux mathématiques et aux sciences du génie, ainsi qu'à des pratiques systématiques et exemplaires actuelles afin de satisfaire à des objectifs définis, dans le respect des exigences, des normes et des contraintes établies. Parmi les contraintes à prendre en considération, citons la santé et la sécurité, la durabilité, l'environnement, l'éthique, la sûreté, l'économie, les facteurs esthétiques et humains, la faisabilité et la conformité aux aspects réglementaires, de même que des enjeux universels en matière de conception, comme les aspects sociaux, culturels et de diversification.**
	Nouvelle annexe	Une nouvelle annexe intitulée **Énoncé d'interprétation sur la définition de la conception en ingénierie** a été ajoutée comme annexe 17.
2021	**Annexe 3 – Énoncé d'interprétation sur les attentes et les exigences en matière de permis d'exercice**	8. ~~**Pour faire sorte que**~~ Les contenus en sciences du génie, en conception en ingénierie, en sciences naturelles, en mathématiques et en études complémentaires devraient être immédiatement et facilement identifiables **à l'aide des résultats d'apprentissage, des activités d'apprentissage et des**

	évaluations attribuables à chacune des catégories dans chaque cours dont ils font partie. ~~d'un programme de génie devrait être décrit à l'aide d'un maximum de trois catégories (SG, CI, SN, Math, EC), aucune catégorie ne devant constituer moins de 8 unités d'agrément ou 25 % du total d'unités d'agrément pour un cours particulier.~~ ~~9. Il incombe à l'établissement offrant le programme de justifier les aspects particuliers de tout cours qui déroge à la clause 8.~~
Annexe 10 – Politiques et procédures de confidentialité	Les modifications/suppressions suivantes ont été apportées tout au long de cette annexe pour remplacer le comité exécutif d'Ingénieurs Canada par le conseil d'Ingénieurs Canada. Le comité de révision, établi par le ~~comité exécutif d'Ingénieurs Canada~~ le conseil d'Ingénieurs Canada, établira sa propre politique de confidentialité. Toutefois, cette politique doit s'inscrire dans la perspective de l'énoncé de politique général, à moins d'indication contraire en fonction des procédures judiciaires ultérieures. **2. Particuliers et organismes** *2.1 Membres du Bureau d'agrément* Le Bureau d'agrément est composé de 20 membres votants nommés par le conseil d'Ingénieurs Canada, ainsi que d'un secrétaire sans droit de vote. ~~Un membre du comité exécutif d'Ingénieurs Canada et un membre du conseil d'Ingénieurs Canada sont des membres d'office sans droit de vote du Bureau d'agrément.~~ ~~Le représentant du comité exécutif d'Ingénieurs Canada et le membre du conseil d'administration d'Ingénieurs Canada faisant partie du Bureau d'agrément sont des membres d'office du Bureau d'agrément sans droit de vote.~~
Annexe 16 – Procédures de révision officielle d'une décision de refus d'agrément rendue par le Bureau d'agrément	Les modifications/suppressions suivantes ont été apportées tout au long de cette annexe pour remplacer le comité exécutif d'Ingénieurs Canada par le conseil d'Ingénieurs Canada. Les membres du Comité doivent être en mesure d'agir sans préjugés et de façon impartiale. Ils ne doivent pas avoir de conflits d'intérêt, réels ou apparents, ni avoir collaboré récemment avec l'établissement (ou avec sa faculté de génie). Ils ne doivent pas avoir participé directement à l'élaboration ni à l'enseignement du programme en question, ni au processus de prise de décision d'agrément. Tous les membres du Comité de révision doivent être des ingénieurs titulaires d'un permis au Canada. L'établissement et le comité exécutif du Bureau d'agrément peuvent s'opposer, pour des raisons de conflit d'intérêt, à la nomination d'un membre du Comité de révision. La décision quant à cette opposition est prise par le ~~comité exécutif d'Ingénieurs Canada~~ conseil d'Ingénieurs Canada et elle est finale et sans appel. **5. Fonction de Comité de révision** Le Comité de révision est chargé par le ~~comité exécutif d'Ingénieurs Canada~~ conseil d'Ingénieurs Canada de revoir les motifs déclarés justifiant la révision officielle. Le Comité de révision est tout particulièrement chargé de déterminer si des motifs valables, tels que définis à la section 4 ci-dessus, ont été démontrés et, le cas échéant, si ces motifs pourraient avoir influé sur la décision. Le Comité de révision ne tient pas compte des améliorations apportées au programme après la décision d'agrément.

		9. Recommandations et décisions Le Comité de révision décide de sa recommandation lors d'une séance à huis clos après l'audience. La décision est prise par une majorité des membres du Comité. Le Comité signifie sa recommandation par écrit, accompagnée d'un résumé de la preuve et des raisons de la recommandation, au ~~comité exécutif d'Ingénieurs Canada~~ conseil d'Ingénieurs Canada dans les 30 jours qui suivent la fin de l'audience. Bien qu'un rapport de consensus soit souhaitable, les membres ont tous le droit de fournir leurs opinions en annexe. Dès qu'il reçoit le rapport du Comité, le chef de la direction d'Ingénieurs Canada en transmet des copies à l'établissement et au Bureau d'agrément. Le Comité de révision peut faire l'une des recommandations suivantes : 9.1.4 l'existence d'aucun conflit d'intérêt n'a été démontrée. Par conséquent, le Comité de révision recommande au ~~comité exécutif d'Ingénieurs Canada~~ conseil d'Ingénieurs Canada de ne pas modifier la décision prise par le Bureau d'agrément concernant l'agrément du programme qui fait l'objet de la révision. 9.2.4 l'existence d'un conflit d'intérêt a été démontrée. Par conséquent, le Comité de révision recommande au ~~comité exécutif d'Ingénieurs Canada~~ conseil d'Ingénieurs Canada de renvoyer la question au Bureau d'agrément et de l'enjoindre de réexaminer sa décision de refuser ou de mettre fin à l'agrément du programme qui fait l'objet de la révision, en tenant compte des constatations faites par le Comité de révision. **10. Réexamen par le Bureau d'agrément** Lorsque le ~~comité exécutif d'Ingénieurs Canada~~ conseil d'Ingénieurs Canada renvoie la question au Bureau d'agrément, ce dernier réexamine la décision d'agrément, en tenant compte du rapport du Comité de révision et de tout renseignement qu'il pourrait demander au Comité ou à l'établissement de lui fournir afin d'éclaircir la situation. Le réexamen s'effectue dans les 60 jours de la réception de la décision du chef de la direction. Il a lieu à la réunion ordinaire suivante du Bureau d'agrément, si cette réunion doit avoir lieu dans les délais prescrits, sinon une réunion spéciale du Bureau d'agrément est convoquée pour l'audition du cas. Le Bureau d'agrément peut alors confirmer sa décision de refuser l'agrément ou d'y mettre fin, ou il peut agréer le programme.
2020	**2. But de l'agrément**	Cette section inclut maintenant la motion #5596, approuvée par le Conseil d'Ingénieurs Canada en septembre 2016.
	Norme 3.4.6	Le programme doit avoir un minimum de 1850 ~~1950~~ unités d'agrément de niveau universitaire.
	Annexe 7 – Énoncé d'interprétation sur les catégories d'unités d'agrément	Cette annexe a été modifiée pour refléter la modification apportée à la norme 3.4.6. Toutes les références aux 405 unités d'agrément « requises en plus du sous-total minimum de 1545 UA dans les cinq catégories précisées » ont été ajustées à 305 unités d'agrément pour refléter le nouveau total minimum de 1850 UA.
2019	**1. Mandat du BCAPG**	Le ~~mandat~~ du Bureau d'agrément des programmes de génie a été supprimé car il n'est plus reproduit dans ce document. Il peut être consulté au lien suivant, au paragraphe 6.9 :

	https://engineerscanada.ca/sites/default/files/2022-02/Board-Policy-Manual-Combined-f.pdf
Norme 3.1.5	**Résultats de l'évaluation :** Au moins un ensemble de résultats d'évaluation doit être obtenu pour les 12 qualités sur une **période** ~~**cycle**~~ d'au plus six ans. Les résultats doivent démontrer clairement que les diplômés d'un programme possèdent les qualités énumérées ci-dessus.
Nouvelle norme	**3.4.4.1 Au moins 600 unités d'agrément, constituées d'une combinaison de cours de sciences du génie et de conception en ingénierie faisant partie d'un programme de génie, doivent être dispensées par des enseignants détenant un permis d'exercice du génie ou étant en voie de l'obtenir, conformément à l'*Énoncé d'interprétation sur les attentes et les exigences en matière de permis d'exercice*.**
Norme 3.4.4.1	~~**3.4.4.1**~~ **3.4.4.2** Minimum de 225 UA en sciences du génie. Les matières en sciences du génie mettent en jeu l'application des mathématiques et des sciences naturelles à des problèmes pratiques. Elles peuvent comprendre le développement de techniques mathématiques ou numériques, la modélisation, la simulation et des procédures expérimentales. Ces matières englobent notamment les aspects appliqués de la résistance des matériaux, de la mécanique des fluides, de la thermodynamique, des circuits électriques et électroniques, de la mécanique des sols, de l'automatique, de l'aérodynamique, des phénomènes de transfert, ainsi que des éléments de la science des matériaux, des sciences de la Terre, de l'informatique et de la science de l'environnement.
Norme 3.4.4.2	~~**3.4.4.2**~~ **3.4.4.3** En plus des sciences du génie propres à la spécialité, le programme d'études doit comprendre des cours de sciences du génie permettant de comprendre les notions de base d'autres spécialités du génie.
Norme 3.4.4.3	~~**3.4.4.3**~~ **3.4.4.5** Minimum de 225 UA en conception en ingénierie. La conception en ingénierie intègre les mathématiques, les sciences naturelles, les sciences du génie et les études complémentaires pour développer des éléments, des systèmes et des processus qui répondent à des besoins précis. Il s'agit d'un processus créatif, itératif et évolutif qui est assujetti à des contraintes pouvant être régies par des normes ou des lois à divers degrés selon la spécialité. Ces contraintes peuvent être liées à des facteurs comme l'économie, la santé, la sécurité, l'environnement et la société ou à d'autres facteurs interdisciplinaires.
Nouvelle norme	**3.4.4.4 Au moins 225 unités d'agrément, constituées de cours de conception en ingénierie faisant partie d'un programme de génie, doivent être dispensées par des enseignants détenant un permis d'exercice du génie, conformément à l'*Énoncé d'interprétation sur les attentes et les exigences en matière de permis d'exercice*.**
Norme 3.4.4.4	~~**3.4.4.4**~~ **3.4.4.6** Le programme d'études en génie doit aboutir à une expérience d'envergure de la conception en ingénierie acquise sous la responsabilité professionnelle de professeurs autorisés à pratiquer le génie au Canada. Cette expérience d'envergure de la conception est fondée sur les connaissances et les compétences acquises antérieurement et permet idéalement aux étudiants de se familiariser avec les concepts du travail en équipe et de la gestion de projets.
Norme 3.4.4.5	~~**3.4.4.5**~~ **3.4.4.7** Un contenu approprié exigeant l'application d'outils d'ingénierie modernes doit faire partie des composantes sciences du génie et conception en ingénierie du programme d'études.

Annexe 1 – Règlements pour l'octroi de crédits de transfert	Une nouvelle clause a été ajoutée à l'article 2.3 : **(nouvelle clause) 2.3.1 : Dans le cas des programmes de génie dans les EES destinés à admettre des étudiants issus des programmes préuniversitaires de deux ans donnés dans les cégeps, et pour lesquels il existe une année de mise à niveau (année préparatoire) pour les étudiants ayant effectué 12 années d'études primaires et secondaires (en dehors du système des cégeps), les restrictions suivantes s'appliquent :** **a. Une procédure de validation équivalente à celle décrite à l'article 2.3 doit être en place** **b. Sciences du génie et conception en ingénierie : 0 UA** **c. Mathématiques : ≤180 UA** **d. Sciences naturelles : ≤ 180 UA** **e. Études complémentaires : ≤ 120 UA** **Aucun crédit de transfert n'est accordé pour les matières suivantes : économie de l'ingénierie, impact de la technologie sur la société, santé et sécurité, déontologie, équité et droit, et gérance environnementale et développement durable.** ~~**2.3.1**~~ **2.3.2** Dans le cas des programmes pré-universitaires de deux ans donnés dans les cégeps, et pour lesquels la procédure de validation décrite à l'article 2.3 susmentionné n'est pas effectuée, les restrictions suivantes s'appliquent : a. Sciences du génie et conception en ingénierie : 0 UA b. Mathématiques : ≤ 112 UA c. Sciences naturelles : ≤ 112 AU d. Études complémentaires : ≤ 112 UA. Aucun crédit n'est accordé pour les matières suivantes : économie de l'ingénierie, impact de la technologie sur la société, communication orale et écrite, santé et sécurité, déontologie, équité et droit, et gérance environnementale et développement durable. e. Total de (b) + (c) + (d) : ≤ 225 AU
Annexe 3 – Énoncé d'interprétation sur les attentes et les exigences en matière de permis d'exercice	Cette annexe a été modifiée pour refléter l'introduction des normes du Bureau d'agrément 3.4.4.1 et 3.4.4.4. La formulation a été ajustée: 6. ~~**Au moins 600 unités d'agrément, constituées d'une combinaison de cours de sciences du génie et de conception en ingénierie faisant partie d'un programme de génie, doivent être dispensées par des enseignants détenant un permis d'exercice du génie ou étant en voie de l'obtenir, conformément aux points 1 et 4 ci-dessus.**~~ ~~**Ainsi,**~~ Les membres du corps professoral qui enseignent depuis moins de cinq ans dans une école d'ingénierie canadienne (et les autres enseignants, comme les professeurs auxiliaires et les chargés de cours, engagés dans le processus d'inscription) et qui travaillent activement à l'obtention de leur permis d'exercice peuvent être inclus dans le calcul visant les cours de sciences du génie, pour satisfaire au minimum de 600 unités d'agrément combinant des cours de sciences du génie et de conception en ingénierie. 7. ~~**Au moins 225 unités d'agrément, constituées de cours de conception en ingénierie faisant partie d'un programme de génie, doivent être dispensées par des enseignants détenant un permis d'exercice du génie (tel que spécifié ci-dessus au point 1, seulement).**~~ ~~**8. En ce qui concerne les points 6 et 7, ci-dessus,**~~ Pour ce qui est des cours enseignés en équipe, et dans le cas de multiples parties d'un cours, le nombre total d'unités d'agrément dispensées par des enseignants titulaires du permis est établi selon une approche de « cheminement minimum » (tel que spécifié ci-dessus au point 1, seulement). Dans le cas de parties de cours dupliquées, tous les enseignants doivent satisfaire aux exigences relatives au permis

		d'exercice pour que les unités d'agrément soient incluses dans le calcul. Si un cours est donné par une équipe, il doit être clair que les éléments de sciences du génie et de conception en ingénierie sont enseignés par des membres du corps professoral titulaires du permis d'exercice. Dans certains cas, une fraction du total d'unités d'agrément pourrait être revendiquée pour les cours donnés par une équipe d'enseignants. Les clauses subséquentes ont été renumérotées pour refléter la suppression de la clause 7.
	Annexe 7 – Énoncé d'interprétation sur les changements importants apportés aux programmes	L'annexe 7 concernant l'~~**Énoncé d'interprétation sur les changements importants apportés aux programmes**~~ a été effectivement supprimé, conformément à la note de la version 2018.
	Annexes 8 à 12	Suite à la suppression susmentionnée, la renumérotation suivante s'applique: Annexe ~~**8**~~**7** – Énoncé d'interprétation sur les catégories d'unités d'agrément Annexe ~~**9**~~**8** – Énoncé d'interprétation sur les qualités requises des diplômés Annexe ~~**10**~~**9** – Énoncé d'interprétation sur l'amélioration continue Annexe ~~**11**~~**10** – Politiques et procédures de confidentialité Annexe ~~**12**~~**11** – Lignes directrices sur les conflits d'intérêt
	Annexe 9 (maintenant 8) – Énoncé d'interprétation sur les qualités requises des diplômés	Cette annexe a été modifiée pour refléter la formulation actuelle de la norme 3.1.5 : 3.1.5 Le Bureau d'agrément s'attend à ce que l'on obtienne ~~**un ensemble**~~ des résultats d'évaluation ~~**chaque année**~~ **de façon régulière** et à ce que les résultats pour les 12 qualités requises aient été obtenus pendant une **période** ~~**cycle**~~ d'au plus six ans. **Ces résultats périodiques doivent être utilisés pour l'amélioration continue du programme.** Le plus souvent, les résultats d'évaluation liés à une activité sont exprimés en niveau d'acquisition des qualités requises. Ils indiquent le niveau de rendement des étudiants à l'égard de l'outil d'évaluation utilisé, habituellement sur une échelle de un à quatre : Ne satisfait pas aux attentes, Satisfait à peine aux attentes, Satisfait adéquatement aux attentes et Dépasse les attentes.
	Nouvelle annexe	Une nouvelle annexe intitulée **Politique du BCAPG en matière de plaintes** a été ajoutée comme annexe 12.
2018	**Norme 3.4.5**	**Minimum de 225 AU en études complémentaires:** en sciences humaines, en sciences sociales, en arts, **en langues**, en gestion, en économie de l'ingénierie et en communications ~~qui s'ajoutent au contenu technique du programme d'études et l'enrichissent.~~
	Norme 3.4.5.1 (d)	L'impact de **la technologie et/ou** de l'ingénierie sur la société.
	Norme 3.4.5.2	~~**3.4.5.2** Les études complémentaires peuvent comprendre des cours de langue à condition que ces cours ne soient pas suivis pour satisfaire à une exigence d'admission. Les cours essentiellement axés sur les compétences linguistiques peuvent être utilisés pour combler le nombre d'UA requis en études complémentaires, mais non pour satisfaire à l'exigence de matières qui traitent des questions fondamentales, des méthodologies et des cheminements intellectuels propres aux sciences humaines et sociales.~~
	Annexe 3 – Énoncé d'interprétation sur les attentes et les exigences en matière de permis d'exercice	Cette annexe a été modifiée pour refléter la formulation actuelle ~~de la norme~~ des normes 3.5.3 et 3.5.5 : • 3.5.3 - Le doyen de la faculté de génie (ou son équivalent) et le directeur du département (ou l'administrateur assumant la responsabilité globale de chaque programme de génie) doivent assurer un leadership efficace de la formation en génie et jouir de la

	plus haute estime au sein de la profession d'ingénieur. On s'attend à ce qu'ils soient titulaires d'un permis d'exercice du génie au Canada. Pour évaluer la conformité à cette norme, le Bureau d'agrément se fondera sur l'*Énoncé d'interprétation sur les attentes et les exigences en matière de permis d'exercice*, qui est joint à ce document à titre d'annexe. • 3.5.5 - Les professeurs qui donnent des cours portant essentiellement sur les sciences du génie et la conception en ingénierie devraient être titulaires d'un permis d'exercice du génie au Canada. Pour évaluer la conformité à cette norme, le Bureau d'agrément se fondera sur l'*Énoncé d'interprétation sur les attentes et les exigences en matière de permis d'exercice*, qui est joint à ce document à titre d'annexe.
Annexe 7 – Énoncé d'interprétation sur les changements importants apportés aux programmes	Cette annexe sera **supprimée** du livre des normes et de procédures de 2018 car l'annexe 13, *Procédure consultative pour l'élaboration des programmes* correspond à l'objectif initial de la déclaration.

Acknowledgements

Canadian Engineering Accreditation Board
Accreditation criteria and procedures

For the year ending June 30, 2023

Canadian undergraduate engineering programs maintain a worldwide reputation for excellence. For individual institutions, this reputation is due to the committed faculty and staff of these programs. But, taken together, this reputation is the result of a system of cooperation and collaboration built on a foundation of our national accreditation program.

The success of our accreditation system is a testament to the hard work of many: the volunteers who visit engineering programs on behalf of the Canadian Engineering Accreditation Board; the staff of Engineers Canada coordinating this tremendous effort; and the faculty, staff and students of engineering Schools and Faculties partnering with the Accreditation Board for continual improvement. The Canadian Engineering Accreditation Board serves the engineering regulators with valuable input from Engineering Deans Canada (EDC), and the Canadian Federation of Engineering Students (CFES). This year marks an important milestone, as we roll out Tandem, our accreditation data management system, which promises to help streamline the accreditation process. My thanks to all who have helped in shaping and testing this system.

On behalf of the Canadian Engineering Accreditation Board, thank you for your commitment to the highest level of quality and professionalism. Your hard work makes accreditation a valued part of engineering education in Canada and contributes to this country's exceptionally strong engineering programs.

J. Pemberton Cyrus, PhD, P.Eng., FEC
Chair, Canadian Engineering Accreditation Board
June 2023 –

Remerciements

Bureau canadien d'agrément des programmes de génie
Normes et procédures d'agrément

Pour l'année se terminant le 30 juin 2023

Les programmes canadiens de premier cycle en génie ont acquis une réputation d'excellence dans le monde entier. Pour chaque établissement, cette réputation s'est forgée grâce à l'engagement des membres du corps professoral et du personnel responsable de ces programmes. Considérée dans son ensemble, elle est le résultat d'une coopération et d'une collaboration qui reposent sur un solide système d'agrément national.

Le succès de notre système d'agrément témoigne du travail infatigable de nombreux intervenants, à savoir les bénévoles qui visitent les programmes de génie au nom du Bureau canadien d'agrément des programmes de génie, le personnel d'Ingénieurs Canada qui assure la coordination de ce travail considérable, ainsi que les professeurs, les membres du personnel et les étudiants des écoles et facultés de génie qui collaborent avec le Bureau d'agrément pour une amélioration continue. Le Bureau canadien d'agrément des programmes de génie sert les organismes de réglementation du génie grâce aux commentaires précieux des Doyennes et Doyens d'ingénierie Canada (DDIC) et de la Fédération canadienne étudiante de génie (FCEG). Cette année marque un jalon important puisque nous déployons Tandem, notre système de gestion des données de l'agrément, qui vise à faciliter le processus d'agrément. Je souhaite remercier toutes celles et tous ceux qui ont contribué au développement ainsi qu'aux phases de test de ce système

Au nom du Bureau canadien d'agrément des programmes de génie, je les remercie de leur engagement et de leur professionnalisme. Leur travail fait de l'agrément des programmes un élément important de la formation d'ingénieur au Canada, et contribue à la force exceptionnelle des programmes de génie de notre pays.

J. Pemberton Cyrus, PhD, P.Eng., FEC
Président, Bureau canadien d'agrément des programmes de génie
Juin 2023 –

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Note: shaded text indicates changes to criteria, appendices and/or newly-accredited programs
Note: le texte ombré indique des changements apportés aux normes, annexes et/ou programmes nouvellement agréés

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The role of the Accreditation Board

In 1965, Engineers Canada established the Canadian Engineering Accreditation Board to accredit Canadian undergraduate engineering programs that meet or exceed educational standards acceptable for professional engineering registration in Canada.

The Accreditation Board is also responsible for ascertaining the equivalency of accreditation systems in other countries and for monitoring the activities of those bodies with which mutual recognition agreements have been signed.

The Accreditation Board is currently composed of 20 professional engineers drawn from the private, public and academic sectors. The members are volunteers and represent different parts of the country as well as a wide range of engineering disciplines. The Accreditation Board also relies on the volunteer services of an extensive network of professional engineers who serve on the visiting teams and on committees.

An accreditation visit is undertaken at the invitation of a particular institution and with the concurrence of the association having jurisdiction. A team of senior engineers is assembled under the direction of a current or recent Accreditation Board member. A detailed questionnaire is completed by the institution and sent to the team prior to the visit. During the visit, the team examines the academic and professional quality of faculty, adequacy of laboratories, equipment and computer facilities and the quality of the students' work.

A qualitative and quantitative analysis of the curriculum content is performed to ensure that it meets the minimum criteria. Finally, the team reports its findings to the Accreditation Board which then makes an accreditation decision. It may grant (or extend) accreditation of a program for a period of up to six years or it may deny accreditation altogether.

The Accreditation Board publishes an annual listing of the accreditation history of all programs which are presently—or have ever been—accredited.

Le rôle du Bureau d'agrément

En 1965, Ingénieurs Canada a institué le Bureau canadien d'agrément des programmes de génie pour agréer les programmes de génie qui respectent ou surpassent les normes de formation exigées pour la délivrance des permis d'exercice au Canada.

Le Bureau d'agrément est également chargé d'évaluer les systèmes d'agrément d'autres pays et de surveiller les activités des organismes avec lesquels des accords de reconnaissance mutuelle ont été signés.

Le Bureau d'agrément se compose actuellement de 20 ingénieurs qui viennent des secteurs privés, public et universitaire. Les membres du Bureau d'agrément agissent à titre bénévole et représentent les différentes régions du pays de même qu'un large éventail de spécialités du génie. Le Bureau d'agrément dépend également des services bénévoles d'un vaste réseau d'ingénieurs qui font partie des divers comités et des équipes d'agrément.

Une visite d'agrément n'est menée qu'à la demande expresse d'un établissement d'enseignement et avec l'assentiment de l'ordre provincial concerné. Une équipe d'ingénieurs réputés est constituée sous la direction d'un membre actuel ou récent du Bureau d'agrément. Un questionnaire détaillé est rempli par l'établissement et envoyé à l'équipe avant la visite. Pendant la visite, l'équipe examine de près les compétences universitaires et professionnelles du corps professoral, puis inspecte les laboratoires, les installations informatiques et les équipements collectifs, de même que la qualité des travaux des étudiants.

L'équipe de visiteurs procède à une analyse qualitative et quantitative du contenu du programme d'études afin de s'assurer qu'il répond aux normes minimales. L'équipe transmet ensuite ses conclusions au Bureau d'agrément qui décide alors d'accorder ou de prolonger l'agrément du programme pour une période maximale de six ans, ou bien de refuser l'agrément.

Le Bureau d'agrément publie une liste annuelle de tous les programmes qui sont agréés ou qui l'ont déjà été.

Policy statement

Engineers Canada is the national organization of the 12 provincial and territorial associations that regulate the profession of engineering in Canada and license the country's more than 300,000 members of the engineering profession. The Accreditation Board, a standing committee of Engineers Canada, is responsible for the accreditation of Canadian engineering programs at Higher Education Institutions for the use of the provincial and territorial regulatory bodies in the engineering licensure process.

The terms of reference criteria and procedures described in this policy statement provide detailed terms and guidelines for the operation of the Accreditation Board.

1. Canadian Engineering Accreditation Board's terms of reference

The Accreditation Board enhances the Engineers Canada Board's effectiveness and efficiency on matters related to the accreditation of academic engineering programs.

The complete CEAB terms of reference are available on the Accreditation Board page of the Engineers Canada website (please refer to section 6.9 of the document): https://engineerscanada.ca/sites/default/files/2022-02/Board-Policy-Manual-Combined-e.pdf

2. Purpose of accreditation

In September 2016, the Engineers Canada Board carried motion #5596: "THAT the Engineers Canada Board affirm that the primary purpose of CEAB accreditation is to support the licensing activities of its owners, and that this purpose has precedence over any subordinate objectives or coincidental benefits." Therefore, the purpose of accreditation is to identify to the member engineering regulators of Engineers Canada those engineering programs whose graduates are academically qualified to begin the process to be licensed as professional engineers in Canada. The process of accreditation emphasizes the quality of the students, the academic and support staff, the curriculum, and the educational facilities.

The engineering profession expects of its members competence in engineering as well as an understanding of the effects of engineering on society. Thus, accredited engineering programs must contain not only adequate mathematics, science, and engineering curriculum content but must also develop communication skills, an understanding of the environmental, cultural, economic, and social impacts of engineering on society, the concepts of sustainable development, and the capacity for life-long learning.

Énoncé de politique

Ingénieurs Canada est l'organisme national regroupant les 12 ordres provinciaux et territoriaux qui réglementent l'exercice du génie au Canada et qui délivrent les permis d'exercice aux ingénieurs du pays, actuellement plus de 300 000. Le Bureau d'agrément, l'un des comités permanents d'Ingénieurs Canada, est responsable de l'agrément des programmes de génie aux établissements d'enseignement supérieurs pour les besoins du processus d'admission à l'exercice du génie propre aux organismes provinciaux et territoriaux.

Le mandat, les normes et les procédures décrits dans cet énoncé de politique fournissent en détail les modes de fonctionnement du Bureau d'agrément.

1. Mandat du Bureau canadien d'agrément des programmes de génie

Le Bureau d'agrément accroit l'efficacité et l'efficience du conseil d'Ingénieurs Canada en ce qui concerne les questions liées à l'agrément des programmes de génie de niveau universitaire.

Le mandat complet du BCAPG est consultable sur la page du Bureau d'agrément du site d'Ingénieurs Canada (veuillez vous référer au paragraphe 6.9 du document suivant) : https://engineerscanada.ca/sites/default/files/2022-02/Board-Policy-Manual-Combined-f.pdf

2. But de l'agrément

En septembre 2016, le Conseil d'Ingénieurs Canada a adopté la motion #5596 : « QUE le conseil d'Ingénieurs Canada confirme que l'objectif principal de l'agrément par le BCAPG est d'appuyer les activités d'attribution de permis de ses propriétaires et que cet objectif a préséance sur tout objectif secondaire ou avantage fortuit. » En conséquence, l'agrément vise à identifier, à l'intention des organismes de réglementation du génie d'Ingénieurs Canada, les programmes de génie dont les diplômés possèdent la formation universitaire nécessaire à l'exercice de la profession d'ingénieur au Canada. Les processus d'agrément mettent l'accent sur la qualité des étudiants, du programme, du corps professoral, du personnel de soutien et des installations et services pédagogiques.

La profession d'ingénieur exige de ses membres qu'ils soient compétents en ingénierie et comprennent les impacts du génie sur la société. Ainsi, les programmes de génie agréés doivent permettre aux futurs diplômés d'acquérir non seulement des connaissances suffisantes en mathématiques, en sciences et en génie, mais aussi des compétences en communication et une compréhension des incidences environnementales, culturelles, économiques et sociales du génie ainsi que les concepts de développement durable, et d'acquérir des capacités d'apprentissage continu.

The criteria for accreditation are intended to provide a broad basis for identifying acceptable undergraduate engineering programs, to prevent over-specialization in curricula, to provide sufficient freedom to accommodate innovation in education, to allow adaptation to different regional factors, and to permit the expression of the institution's individual qualities, ideals, and educational objectives. They are intended to support the continuous improvement of the quality of engineering education.

Interpretations, regulations, and guidelines are included as appendices in this publication, and are available on the Engineers Canada website.

3. Accreditation criteria

The following sections describe the measures used by the Accreditation Board to evaluate Canadian engineering programs for the purpose of accreditation.

3.1 Graduate attributes

The institution must demonstrate that the graduates of a program possess the attributes under the following headings.

1 **A knowledge base for engineering:** Demonstrated competence in university level mathematics, natural sciences, engineering fundamentals, and specialized engineering knowledge appropriate to the program.

2 **Problem analysis:** An ability to use appropriate knowledge and skills to identify, formulate, analyze, and solve complex engineering problems in order to reach substantiated conclusions.

3 **Investigation:** An ability to conduct investigations of complex problems by methods that include appropriate experiments, analysis and interpretation of data, and synthesis of information in order to reach valid conclusions.

4 **Design:** The ability to perform engineering design. Engineering design is a process of making informed decisions to creatively devise products, systems, components, or processes to meet specified goals based on engineering analysis and judgement. The process is often characterized as complex, open-ended, iterative, and multidisciplinary. Solutions incorporate natural sciences, mathematics, and engineering science, using systematic and current best practices to satisfy defined objectives within identified requirements, criteria and constraints. Constraints to be considered may include (but are not limited to): health and safety, sustainability, environmental, ethical, security, economic, aesthetics and human factors, feasibility and compliance with regulatory aspects, along with universal design issues such as societal, cultural and diversification facets.

Les normes d'agrément constituent un cadre général permettant d'identifier les programmes de génie acceptables, d'éviter la surspécialisation des programmes d'études, d'accorder suffisamment de liberté pour l'innovation en matière de formation, de tenir compte de l'adaptation à divers facteurs régionaux, et de permettre à chaque établissement d'enseignement d'exprimer ses qualités, ses idéaux et ses objectifs éducatifs particuliers. Ces normes visent à soutenir l'amélioration continue de la qualité de la formation en génie.

Les interprétations, les règlements et les lignes directrices sont publiés en annexe et sont disponibles sur le site web d'Ingénieurs Canada.

3. Normes d'agrément

Les sections qui suivent décrivent les éléments de mesure utilisés par le Bureau d'agrément pour évaluer les programmes de génie canadiens à des fins d'agrément.

3.1 Qualités requises des diplômés

L'établissement d'enseignement doit démontrer que les diplômés d'un programme possèdent les qualités requises décrites ci-après.

1 **Connaissances en génie :** connaissance, à un niveau universitaire, des mathématiques, des sciences naturelles et des notions fondamentales de l'ingénierie, ainsi qu'une spécialisation en génie propre au programme.

2 **Analyse de problèmes :** capacité d'utiliser les connaissances et les principes appropriés pour identifier, formuler, analyser et résoudre des problèmes d'ingénierie complexes et en arriver à des conclusions étayées.

3 **Investigation :** capacité d'étudier des problèmes complexes au moyen de méthodes mettant en jeu la réalisation d'expériences, l'analyse et l'interprétation des données et la synthèse de l'information afin de formuler des conclusions valides.

4 **Conception :** La capacité d'effectuer une conception en ingénierie. La conception en ingénierie est un processus consistant à prendre des décisions éclairées pour concevoir de façon créative un produit, un système, un composant ou un procédé devant répondre à des besoins précisés, en tirant parti de l'analyse et du jugement de l'ingénierie. Ce processus est souvent caractérisé comme étant complexe, évolutif, itératif et multidisciplinaire. Les solutions qui en sont issues font appel aux sciences naturelles, aux mathématiques et aux sciences du génie, ainsi qu'à des pratiques systématiques et exemplaires actuelles afin de satisfaire à des objectifs définis, dans le respect des exigences, des normes et des contraintes établies. Parmi les contraintes à prendre en considération, citons la santé et la sécurité, la durabilité, l'environnement, l'éthique, la sûreté, l'économie, les facteurs esthétiques et humains, la faisabilité et la conformité aux aspects réglementaires, de même que des enjeux universels en matière de conception, comme les aspects sociaux, culturels et de diversification.

5 **Use of engineering tools:** An ability to create, select, apply, adapt, and extend appropriate techniques, resources, and modern engineering tools to a range of engineering activities, from simple to complex, with an understanding of the associated limitations.

6 **Individual and team work:** An ability to work effectively as a member and leader in teams, preferably in a multi-disciplinary setting.

7 **Communication skills:** An ability to communicate complex engineering concepts within the profession and with society at large. Such ability includes reading, writing, speaking and listening, and the ability to comprehend and write effective reports and design documentation, and to give and effectively respond to clear instructions.

8 **Professionalism:** An understanding of the roles and responsibilities of the professional engineer in society, especially the primary role of protection of the public and the public interest.

9 **Impact of engineering on society and the environment:** An ability to analyze societal and environmental aspects of engineering activities. Such ability includes an understanding of the interactions that engineering has with the economic, health, safety, legal, and cultural aspects of society, the uncertainties in the prediction of such interactions; and the concepts of sustainable design and development and environmental stewardship.

10 **Ethics and equity:** An ability to apply professional ethics, accountability, and equity.

11 **Economics and project management:** An ability to appropriately incorporate economics and business practices including project, risk, and change management into the practice of engineering and to understand their limitations.

12 **Life-long learning:** An ability to identify and to address their own educational needs in a changing world in ways sufficient to maintain their competence and to allow them to contribute to the advancement of knowledge.

The attributes will be interpreted in the context of candidates at the time of graduation. It is recognized that graduates will continue to build on the foundations that their engineering education has provided.

To assess the suitability of a program for developing the above list of attributes, the Accreditation Board will rely on criteria 3.1.1 to 3.1.5, given below, and on the *Interpretive Statement on Graduate Attributes* which is attached as an appendix to this document.

3.1.1 **Organization and engagement:** There must be demonstration that an organization structure is in place

5 **Utilisation d'outils d'ingénierie :** capacité de créer et de sélectionner des techniques, des ressources et des outils d'ingénierie modernes et de les appliquer, de les adapter et de les étendre à un éventail d'activités simples ou complexes, tout en comprenant les contraintes connexes.

6 **Travail individuel et en équipe :** capacité de fonctionner efficacement en tant que membre ou chef d'équipe, de préférence dans un contexte de travail multidisciplinaire.

7 **Communication :** habileté à communiquer efficacement des concepts d'ingénierie complexes, au sein de la profession et au public en général, notamment lire, rédiger, parler et écouter, comprendre et rédiger de façon efficace des rapports et de la documentation pour la conception, ainsi qu'énoncer des directives claires et y donner suite.

8 **Professionnalisme :** compréhension des rôles et des responsabilités de l'ingénieur dans la société, y compris le rôle essentiel de protection du public et l'intérêt public.

9 **Impact du génie sur la société et l'environnement :** capacité à analyser les aspects sociaux et environnementaux des activités liées au génie, notamment comprendre les interactions du génie avec les aspects économiques et sociaux, la santé, la sécurité, les lois et la culture de la société; les incertitudes liées à la prévision de telles interactions; et les concepts de développement durable et de bonne gérance de l'environnement.

10 **Déontologie et équité :** capacité à appliquer les principes d'éthique, de responsabilité professionnelle et d'équité.

11 **Économie et gestion de projets :** capacité à intégrer de façon appropriée les pratiques d'économie et d'affaires, comme la gestion de projets, des risques et du changement, dans l'exercice du génie, et de bien tenir compte des contraintes associées à ces pratiques.

12 **Apprentissage continu :** capacité à cerner et à combler ses propres besoins de formation dans un monde en constante évolution, et ce, de façon à maintenir sa compétence et à contribuer à l'avancement des connaissances.

Ces qualités doivent être interprétées dans le contexte de candidats qui viennent de terminer leurs études. Il est reconnu que les diplômés continueront de développer les assises que leur formation en génie leur a permis d'acquérir.

Pour évaluer si un programme donné permet d'acquérir les qualités énumérées ci-dessus, le Bureau d'agrément se fonde sur les normes 3.1.1 à 3.1.5 indiquées ci-dessous ainsi que sur l'*Énoncé d'interprétation sur les qualités requises des diplômés* figurant en annexe.

3.1.1 **Organisation et engagement :** Il doit être démontré qu'une structure organisationnelle est en place pour

to assure the sustainable development and measurement of graduate attributes. There must be demonstrated engagement in the processes by faculty members and engineering leadership.

3.1.2 **Curriculum maps:** There must be documented curriculum maps showing the relationship between learning activities for each of the attributes and semesters in which these take place. A comprehensive, sustainable assessment plan for all attributes must be clearly indicated by the map.

3.1.3 **Indicators**: For each attribute, there must be a set of measurable, documented indicators that describe what students must achieve in order to be considered competent in the corresponding attribute.

3.1.4 **Assessment tools**: There must be documented assessment tools that are appropriate to the attribute and used as the basis for obtaining data on student learning with respect to all twelve attributes over a cycle of six years or less.

3.1.5 **Assessment results**: At least one set of assessment results must be obtained for all twelve attributes over a period of six years or less. The results should provide clear evidence that graduates of a program possess the above list of attributes.

3.2 Continual improvement

Engineering programs are expected to continually improve. To evaluate this criterion, the Accreditation Board will rely on criteria 3.2.1 to 3.2.3 given below and on the *Interpretive Statement on Continual Improvement*, which is attached as an appendix to this document.

3.2.1 **Improvement process:** There must be processes in place that demonstrate that program outcomes are being assessed in the context of the graduate attributes, and that the results are validated, analyzed and applied to the further development of the program.

3.2.2 **Stakeholder engagement:** There must be demonstrated engagement and involvement of stakeholders both internal and external to the program in the continual improvement process.

3.2.3 **Improvement actions:** There must be demonstration that the continual improvement process has led to consideration of specific actions corresponding to identifiable improvements to the program and/or its assessment process. This criterion does not apply to the evaluation of new programs.

garantir le développement et l'évaluation durables des qualités requises des diplômés. Il doit y avoir un engagement manifeste à l'égard des processus de la part des membres du corps professoral et des dirigeants.

3.1.2 **Cartes du programme d'études :** Il doit y avoir des cartes documentées du programme d'études montrant la relation entre les activités d'apprentissage propres à chaque qualité et les semestres au cours desquels ces activités ont lieu. Les cartes doivent indiquer clairement un plan d'évaluation durable et complet pour toutes les qualités.

3.1.3 **Indicateurs :** Pour chaque qualité, il doit y avoir en place un ensemble d'indicateurs mesurables et documentés qui décrivent ce que les étudiants doivent acquérir pour être jugés compétents dans la qualité correspondante.

3.1.4 **Outils d'évaluation :** Il doit y avoir en place des outils d'évaluation documentés qui sont adaptés à la qualité et qui sont utilisés pour obtenir des données sur l'apprentissage des étudiants relativement aux douze qualités sur un cycle d'au plus six ans.

3.1.5 **Résultats de l'évaluation :** Au moins un ensemble de résultats d'évaluation doit être obtenu pour les 12 qualités sur une période d'au plus six ans. Les résultats doivent démontrer clairement que les diplômés d'un programme possèdent les qualités énumérées ci-dessus.

3.2 Amélioration continue

On s'attend à ce que les programmes fassent l'objet d'améliorations continues. Pour évaluer la conformité à cette norme, le Bureau d'agrément se fonde sur les normes 3.2.1 à 3.2.3 indiquées ci-dessous ainsi que sur l'*Énoncé d'interprétation sur l'amélioration continue* figurant en annexe.

3.2.1 **Processus d'amélioration :** Il doit y avoir en place des processus démontrant que les résultats d'un programme sont évalués par rapport aux qualités requises des diplômés et que les résultats sont validés, analysés et utilisés pour perfectionner le programme.

3.2.2 **Engagement des intervenants :** L'engagement et la participation des intervenants internes et externes à l'égard du processus d'amélioration continue doivent être démontrés.

3.2.3 **Actions d'amélioration :** Il doit être démontré que le processus d'amélioration continue a mené à envisager des actions précises correspondant à des améliorations concrètes du programme ou de son processus d'évaluation. Cette norme ne s'applique pas à l'évaluation des nouveaux programmes.

3.3 Students

Accredited programs must have functional policies and procedures that deal with quality, admission, counselling, promotion and graduation of students. Although all accreditation criteria connect directly and indirectly with their education, particular attention is drawn to admission, promotion and graduation, and academic advising.

3.3.1 **Admission:** There must be documented processes and policies for admission of students. Admission involving advanced standing, prior studies, transfer credits and/or exchange studies must be in compliance with the associated Accreditation Board regulations. The document entitled Regulations for granting transfer credits is available as an appendix in this document.

3.3.2 **Promotion and graduation:** Processes and policies for promotion and graduation of students must be documented. The institution must verify that all students have met all its regulations for graduation in the program identified on the transcript and that the curriculum followed is consistent with that of the accredited program. The program name must be appropriate for all students graduating from the program.

3.3.3 **Academic Advising:** There must be processes and sufficient resources in place for the academic advising of students. Clear statements of such policies and procedures should be available to faculty and students. Depending on the governance structures in place, aspects of students advising should normally be at both the program and Faculty levels.

3.3.4 **Degree auditing:** A requirement for accreditation is that the institution has verified, using methodologies accepted by the Accreditation Board, that all its student-related policies, procedures, and regulations apply to, and are met by, all students.

3.4 Curriculum content and quality

The curriculum content and quality criteria are designed to assure a foundation in mathematics and natural sciences, a broad preparation in engineering sciences and engineering design, and an exposure to non-technical subjects that supplement the technical aspects of the curriculum. All students must meet all curriculum content and quality criteria. The academic level of the curriculum must be appropriate to a university-level engineering program.

3.3 Étudiants

Les programmes agréés doivent être assortis de politiques et de procédures fonctionnelles traitant de la qualité, de l'admission, du counseling, du passage d'une année à l'autre et de la diplomation des étudiants. Bien que les normes d'agrément aient un lien direct ou indirect avec la formation des étudiants, il convient d'attirer l'attention sur les aspects suivants : admission ; passage d'une année à l'autre et diplomation ; conseils pédagogiques.

3.3.1 **Admission :** des politiques et des processus documentés doivent être en place en ce qui a trait à l'admission des étudiants. L'admission d'étudiants sur la base de l'intégration d'acquis, des études antérieures, des crédits de transfert et/ou des études d'échange doit être conforme aux règlements pertinents du Bureau d'agrément. Les Règlements pour l'octroi de crédits de transfert sont inclus à titre d'annexe.

3.3.2 **Passage d'une année à l'autre et diplomation :** Les processus et les politiques concernant le passage d'une année à l'autre et la diplomation des étudiants doivent être documentés. L'établissement doit vérifier que les étudiants se conforment à tous ses règlements en ce qui a trait à l'obtention du diplôme dans le programme indiqué sur le relevé de notes et que le programme d'études suivi est conforme à celui du programme agréé. Le nom du programme doit être pertinent pour tous les étudiants qui obtiennent un diplôme de ce programme.

3.3.3 **Conseils pédagogiques :** Il doit y avoir en place des processus et des ressources suffisantes pour la prestation de conseils aux étudiants. Des politiques et procédures claires à cet égard doivent être à la disposition du corps professoral et des étudiants. Selon les structures de gouvernance en place, les conseils aux étudiants doivent normalement être offerts tant au niveau du programme qu'à celui de la faculté.

3.3.4 **Vérification des grades :** l'une des exigences pour l'agrément est que l'établissement doit avoir vérifié, à l'aide de méthodologies acceptées par le Bureau d'agrément, que l'ensemble de ses politiques, de ses procédures et de ses règlements relatifs aux étudiants s'appliquent à tous les étudiants et sont respectés par ceux-ci.

3.4 Contenu et qualité du programme d'études

Les normes relatives au contenu et à la qualité du programme d'études visent à assurer l'acquisition de bases solides en mathématiques et en sciences naturelles, de connaissances étendues en sciences du génie et en conception en ingénierie, et de connaissances non techniques venant compléter les aspects techniques de la formation. Tous les étudiants doivent satisfaire à toutes ces normes. Le programme doit être de niveau universitaire.

3.4.1 **Approach and methodologies for quantifying curriculum content**

3.4.1.1 **Accreditation units (AU)** are defined on an hourly basis for an activity which is granted academic credit and for which the associated number of hours corresponds to the actual contact time between the student and the faculty members, or designated alternates, responsible for delivering the program:

- one hour of lecture (corresponding to 50 minutes of activity) = 1 AU
- one hour of laboratory or scheduled tutorial = 0.5 AU

This definition is applicable to most lectures and periods of laboratory or tutorial work. Classes of other than the nominal 50-minute duration are treated proportionally. In assessing the time assigned to determine the AU of various components of the curriculum, the actual instruction time exclusive of final examinations should be used.

3.4.1.2 For an activity for which contact hours do not properly describe the extent of the work involved, such as significant design or research projects, curriculum delivered through the use of problem-based learning, or similar work officially recognized by the institution as a degree requirement, an equivalent measure in accreditation units, consistent with the above definition, should be used by the institution.

3.4.1.3 One method for determining an equivalent measure in AU is a calculation on a proportionality basis. This method relies on the use of a unit of academic credit defined by the institution to measure curriculum content. Specifically, a factor, K, is defined as the sum of AU for all common and compulsory courses for which the computation was carried out on an hourly basis, divided by the sum of all units defined by the institution for the same courses.

Then, for each course not accounted for on an hourly basis, the number of AU is obtained by multiplying the units defined by the institution for that course by K.

$$K = \frac{\Sigma \text{ AU for all common and compulsory courses for which the computation was carried out on an hourly basis}}{\Sigma \text{ units defined by the institution for the same courses}}$$

3.4.1 **Approche et méthodologies de quantification du contenu du programme d'études**

3.4.1.1 Pour toute activité menant à des crédits universitaires et pour laquelle le nombre d'heures connexes correspond au temps de contact réel entre l'étudiant et les membres du corps professoral, ou leurs suppléants désignés, chargés de donner le programme, les **unités d'agrément (UA)** sont définies comme suit (sur une base horaire) :

- une heure d'enseignement (correspondant à 50 minutes d'activité) = 1 UA
- une heure de laboratoire ou de travail dirigé = 0,5 UA

Cette définition s'applique à la plupart des cours magistraux et des périodes de laboratoire ou de travail dirigé. Les cours d'une durée autre que 50 minutes sont considérés au prorata de cette durée. Pour évaluer le temps affecté afin de déterminer les UA des diverses composantes du programme d'études, l'on devrait utiliser le temps d'enseignement réel, à l'exclusion des périodes consacrées aux examens finaux.

3.4.1.2 Dans le cas d'une activité pour laquelle le concept d'heures de contact ne permet pas de décrire correctement l'ampleur du travail, comme d'importants projets de conception ou de recherche, des éléments de programme dont l'enseignement passe par l'apprentissage basé sur la résolution de problèmes, ou des travaux comparables officiellement reconnus comme étant requis pour l'obtention du diplôme, l'établissement d'enseignement doit utiliser une mesure équivalente en unités d'agrément qui soit compatible avec la définition présentée ci-dessus.

3.4.1.3 Une des façons de déterminer une mesure équivalente en unités d'agrément consiste à effectuer un calcul basé sur la proportionnalité. Cette méthode repose sur l'utilisation d'une unité de crédit universitaire définie par l'établissement pour mesurer le contenu du programme d'études. Plus précisément, un facteur, K, est défini comme la somme des UA pour tous les cours obligatoires et du programme pour lesquels le calcul a été effectué sur une base horaire, divisée par la somme des unités définies par l'établissement pour les mêmes cours.

Ainsi, pour chaque cours dont le contenu n'est pas mesurable sur une base horaire, l'on obtient le nombre d'unités d'agrément en multipliant par K les unités définies par l'établissement pour cette activité.

$$K = \frac{\Sigma \text{ UA pour tous les cours obligatoires et du programme pour lesquels le calcul a été fait sur une base horaire}}{\Sigma \text{ unités définies par l'établissement pour les mêmes cours}}$$

3.4.1.4 The Accreditation Board can give consideration to departures from this approach and these methodologies in any case in which it receives convincing documentation that well-considered innovation in engineering education is in progress.

3.4.2 **Minimum curriculum components:**
An engineering program must include the following minima for each of its components.

- **Mathematics**: Minimum 195 AU
- **Natural sciences**: Minimum 195 AU
- **Mathematics and natural sciences** combined: Minimum 420 AU
- **Engineering science**: Minimum 225 AU
- **Engineering design**: Minimum 225 AU
- **Engineering science and engineering design combined**: Minimum 900 AU
- **Complementary Studies**: Minimum 225 AU
- Laboratory experience and safety procedures instruction

3.4.3 **A minimum of 420 AU of a combination of mathematics and natural sciences.** Within this combination, each of mathematics and natural sciences must not be less than 195 AU. An Interpretive Statement on Natural Sciences is attached as an appendix to this document.

3.4.3.1 A minimum of 195 AU in mathematics is required. Mathematics is expected to include appropriate elements of linear algebra, differential and integral calculus, differential equations, probability, statistics, numerical analysis, and discrete mathematics.

3.4.3.2 A minimum of 195 AU in natural sciences is required. The natural sciences component of the curriculum must include elements of physics and chemistry; elements of life sciences and earth sciences may also be included in this category. These subjects are intended to impart an understanding of natural phenomena and relationships through the use of analytical and/or experimental techniques.

3.4.4 **A minimum of 900 AU of a combination of engineering science and engineering design:** Within this combination, each of Engineering Science and Engineering Design must not be less than 225 AU.

3.4.4.1 A minimum of 600 Accreditation Units (AU) of a combination of engineering science and engineering design curriculum content in an engineering program shall be delivered by faculty members holding, or progressing toward, professional engineering licensure as specified in the *Interpretive statement on licensure expectations and requirements*.

3.4.1.4 Le Bureau d'agrément envisagera d'un œil favorable des écarts à cette approche et ces méthodologies s'il est convaincu qu'une innovation judicieuse est déjà engagée dans le cadre d'un programme d'études en génie.

3.4.2 **Nombre minimum de composantes du programme d'études :** Un programme de génie doit comprendre le minimum de chacune des composantes précisées ci-dessous

- **Mathématiques** : minimum de 195 UA
- **Sciences naturelles** : minimum de 195 UA
- **Mathématiques et sciences naturelles combinées** : minimum de 420 UA
- **Sciences du génie** : minimum de 225 UA
- **Conception en ingénierie** : minimum de 225 UA
- **Sciences du génie et conception en ingénierie combinées** : minimum de 900 UA
- **Études complémentaires** : minimum de 225 UA
- Travaux en laboratoire et enseignement des mesures de sécurité

3.4.3 **Minimum de 420 UA dans une combinaison de mathématiques et de sciences naturelles.** De ce total, au moins 195 UA doivent être liées aux mathématiques et au moins 195 UA aux sciences naturelles. L'*Énoncé d'interprétation sur les sciences naturelles* est joint à ce document à titre d'annexe.

3.4.3.1 Minimum de 195 UA en mathématiques. Les mathématiques doivent comprendre les éléments appropriés d'algèbre linéaire, de calcul différentiel et intégral, d'équations différentielles, de probabilité, de statistique, d'analyse numérique et de mathématiques discrètes.

3.4.3.2 Minimum de 195 UA en sciences naturelles. La composante des sciences naturelles du programme d'études doit comprendre des éléments de physique et de chimie; des éléments de sciences de la vie et de sciences de la Terre peuvent également faire partie de cette composante. Ces matières ont pour objet de faire comprendre les phénomènes naturels et leurs relations au moyen de méthodes analytiques et/ou expérimentales.

3.4.4 **Minimum de 900 UA dans une combinaison de sciences du génie et de conception en ingénierie :** De ce total, au moins 225 UA doivent être liées aux sciences du génie et au moins 225 UA à la conception en ingénierie.

3.4.4.1 Au moins 600 unités d'agrément, constituées d'une combinaison de cours de sciences du génie et de conception en ingénierie faisant partie d'un programme de génie, doivent être dispensées par des enseignants détenant un permis d'exercice du génie ou étant en voie de l'obtenir, conformément à *l'Énoncé d'interprétation sur les attentes et les exigences en matière de permis d'exercice*.

3.4.4.2 A minimum of 225 AU in engineering science is required. Engineering science subjects involve the application of mathematics and natural science to practical problems. They may involve the development of mathematical or numerical techniques, modeling, simulation, and experimental procedures. Such subjects include, among others, the applied aspects of strength of materials, fluid mechanics, thermodynamics, electrical and electronic circuits, soil mechanics, automatic control, aerodynamics, transport phenomena, and elements of materials science, geoscience, computer science, and environmental science.

3.4.4.3 In addition to program-specific engineering science, the curriculum must include engineering science content that imparts an appreciation of the important elements of other engineering disciplines.

3.4.4.4 A minimum of 225 AU of engineering design curriculum content in an engineering program shall be delivered by faculty members holding professional engineering licensure as specified in the *Interpretive statement on licensure expectations and requirements*.

3.4.4.5 A minimum of 225 AU in engineering design is required. Engineering design is a process of making informed decisions to creatively devise products, systems, components, or processes to meet specified goals based on engineering analysis and judgement. The process is often characterized as complex, open-ended, iterative, and multidisciplinary. Solutions incorporate natural sciences, mathematics, and engineering science, using systematic and current best practices to satisfy defined objectives within identified requirements, criteria and constraints. Constraints to be considered may include (but are not limited to): health and safety, sustainability, environmental, ethical, security, economic, aesthetics and human factors, feasibility and compliance with regulatory aspects, along with universal design issues such as societal, cultural and diversification facets.

3.4.4.6 The engineering curriculum must culminate in a significant design experience conducted under the professional responsibility of faculty licensed to practise engineering in Canada. The significant design experience is based on the knowledge and skills acquired in earlier work and it preferably gives students an involvement in team work and project management.

3.4.4.7 Appropriate content requiring the application of modern engineering tools must be included in the engineering sciences and engineering design components of the curriculum.

3.4.4.2 Minimum de 225 UA en sciences du génie. Les matières en sciences du génie mettent en jeu l'application des mathématiques et des sciences naturelles à des problèmes pratiques. Elles peuvent comprendre le développement de techniques mathématiques ou numériques, la modélisation, la simulation et des procédures expérimentales. Ces matières englobent notamment les aspects appliqués de la résistance des matériaux, de la mécanique des fluides, de la thermodynamique, des circuits électriques et électroniques, de la mécanique des sols, de l'automatique, de l'aérodynamique, des phénomènes de transfert, ainsi que des éléments de la science des matériaux, des sciences de la Terre, de l'informatique et de la science de l'environnement.

3.4.4.3 En plus des sciences du génie propres à la spécialité, le programme d'études doit comprendre des cours de sciences du génie permettant de comprendre les notions de base d'autres spécialités du génie.

3.4.4.4 Au moins 225 unités d'agrément, constituées de cours de conception en ingénierie faisant partie d'un programme de génie, doivent être dispensées par des enseignants détenant un permis d'exercice du génie, conformément à l'*Énoncé d'interprétation sur les attentes et les exigences en matière de permis d'exercice*

3.4.4.5 Minimum de 225 UA en conception en ingénierie. La conception en ingénierie est un processus consistant à prendre des décisions éclairées pour concevoir de façon créative un produit, un système, un composant ou un procédé devant répondre à des besoins précisés, en tirant parti de l'analyse et du jugement de l'ingénierie. Ce processus est souvent caractérisé comme étant complexe, évolutif, itératif et multidisciplinaire. Les solutions qui en sont issues font appel aux sciences naturelles, aux mathématiques et aux sciences du génie, ainsi qu'à des pratiques systématiques et exemplaires actuelles afin de satisfaire à des objectifs définis, dans le respect des exigences, des normes et des contraintes établies. Parmi les contraintes à prendre en considération, citons la santé et la sécurité, la durabilité, l'environnement, l'éthique, la sûreté, l'économie, les facteurs esthétiques et humains, la faisabilité et la conformité aux aspects réglementaires, de même que des enjeux universels en matière de conception, comme les aspects sociaux, culturels et de diversification.

3.4.4.6 Le programme d'études en génie doit aboutir à une expérience d'envergure de la conception en ingénierie acquise sous la responsabilité professionnelle de professeurs autorisés à pratiquer le génie au Canada. Cette expérience d'envergure de la conception est fondée sur les connaissances et les compétences acquises antérieurement et permet idéalement aux étudiants de se familiariser avec les concepts du travail en équipe et de la gestion de projets.

3.4.4.7 Un contenu approprié exigeant l'application d'outils d'ingénierie modernes doit faire partie des composantes sciences du génie et conception en ingénierie du programme d'études.

3.4.5 **A minimum of 225 AU of complementary studies:** Complementary studies include humanities, social sciences, arts, languages, management, engineering economics and communications.

3.4.5.1 While considerable latitude is provided in the choice of suitable content for the complementary studies component of the curriculum, some areas of study are essential in the education of an engineer. Accordingly, the curriculum must include studies in the following:

a. Subject matter that deals with the humanities and social sciences;
b. Oral and written communications;
c. Professionalism, ethics, equity and law;
d. The impact of technology and/or engineering on society;
e. Health and safety;
f. Sustainable development and environmental stewardship;
g. Engineering economics and project management.

3.4.6 The program must have a minimum of 1,850 Accreditation units that are at a university level.

3.4.7 Appropriate laboratory experience must be an integral component of the engineering curriculum. Instruction in safety procedures must be included in preparation for students' laboratory and field experience.

3.4.8 The requirements for curriculum content must be satisfied by all students, including those claiming advanced standing, credit for prior post-secondary-level studies, transfer credits and/or credit for exchange studies. The document entitled *Regulations for granting transfer credits* is available as an appendix in this document.

3.4.8.1 It is recognized that, for programs at some institutions, some of the mathematics, natural sciences and complementary studies components of the curriculum may have been covered in prior university level (or post-secondary) education and this circumstance must be considered in the institution's admission policy.

3.4.8.2 These criteria do not limit accreditation to any particular mode of learning. In the case of distance learning, the Accreditation Board will rely on the *Interpretive statement on distance learning*, which is attached as an appendix to this document.

3.5 Program environment

The Accreditation Board considers the overall environment in which an engineering program is delivered.

3.5.1 **Quality of the educational experience:** Major importance is attached to the quality of the educational experience as reflected by the following:

3.4.5 **Minimum de 225 UA en études complémentaires :** en sciences humaines, en sciences sociales, en arts, en langues, en gestion, en économie de l'ingénierie et en communications.

3.4.5.1 Bien qu'une grande latitude soit permise dans le choix des cours complémentaires, certaines matières sont considérées essentielles à la formation complète de l'ingénieur. Par conséquent, le programme d'études doit comprendre des études dans les matières suivantes :

a. Matières traitant des sciences humaines et des sciences sociales,
b. Communication orale et écrite,
c. Professionnalisme, déontologie, équité et droit,
d. Impact de la technologie et/ou de l'ingénierie sur la société,
e. Santé et sécurité,
f. Développement durable et gérance environnementale,
g. Économie de l'ingénierie et gestion de projets

3.4.6 Le programme doit avoir un minimum de 1850 unités d'agrément de niveau universitaire.

3.4.7 Une expérience appropriée en laboratoire doit faire partie intégrante du programme d'études en génie. L'enseignement des mesures de sécurité doit être prévu pour permettre aux étudiants de bien se préparer aux travaux en laboratoire et sur le terrain.

3.4.8 Tous les étudiants doivent satisfaire aux exigences relatives au contenu du programme d'études, y compris les étudiants admis sur la base de l'intégration d'acquis, de crédits d'études antérieures de niveau postsecondaire, de crédits de transfert et/ou d'études d'échange. Le document intitulé Règlements pour l'octroi de crédits de transfert est joint à titre d'annexe.

3.4.8.1 Il est admis que, pour les programmes offerts dans certains établissements, certains cours de mathématiques, de sciences naturelles et d'études complémentaires pourront avoir été suivis dans le cadre d'une formation antérieure préuniversitaire (ou postsecondaire); dans ce cas, la politique d'admission de l'établissement doit en tenir compte.

3.4.8.2 Les normes du Bureau d'agrément ne restreignent pas la méthode de prestation. Dans le cas de la formation à distance, le Bureau d'agrément se fondera sur l'Énoncé d'interprétation sur la formation à distance, qui est joint à ce document à titre d'annexe.

3.5 Cadre de prestation du programme

Le Bureau d'agrément examine le cadre général dans lequel le programme d'études est donné.

3.5.1 **Qualité de l'expérience éducative :** Une importance majeure est accordée à la qualité de l'expérience éducative qui se reflète dans :

3.5.1.1 The quality, morale, and commitment of:
- **a.** students
- **b.** faculty
- **c.** support staff
- **d.** administration

3.5.1.2 The quality, suitability, and accessibility of:
- **a.** laboratories
- **b.** library
- **c.** computing facilities
- **d.** non-academic counselling and guidance other supporting facilities and services

3.5.2 **Faculty:** The character of the educational experience is influenced strongly by the competence, expertise, and outlook of the faculty. The faculty delivering the program must have the following characteristics:

3.5.2.1 There must be sufficient faculty to cover, by experience and interest, all areas of the curriculum.

3.5.2.2 Even though the faculty involved in delivery of program elements may include full-time and part-time members, there must be a sufficient number of full-time faculty members to assure adequate levels of student-faculty interaction, student curricular counselling, and faculty participation in the development, control, and administration of the curriculum.

3.5.2.3 Faculty administrative and teaching duties should be appropriately balanced to allow for adequate participation in research, scholarly work, professional development activities, and industrial interaction.

3.5.2.4 Under no circumstances should a program be critically dependent on one individual.

3.5.3 **Leadership:** The dean of engineering (or equivalent officer) and the head of an engineering program (or equivalent officer with overall responsibility for each engineering program) are expected to provide effective leadership in engineering education and to have high standing in the engineering community. They are expected to be engineers licensed to practice in Canada.

To evaluate this criterion, the Accreditation Board will rely on the *Interpretive statement on licensure expectations and requirements*, which is attached as an appendix to this document.

3.5.4 **Expertise and competence of faculty:** Faculty delivering the engineering curriculum are expected to have a high level of expertise and competence, and to be dedicated to the aims of engineering education and of the self-regulating engineering profession, which will be judged by the following factors:

3.5.1.1 La qualité, le moral et l'engagement :
- **a.** des étudiants
- **b.** des membres du corps professoral
- **c.** du personnel de soutien
- **d.** de l'administration

3.5.1.2 La qualité, la pertinence et l'accessibilité :
- **a.** des laboratoires
- **b.** de la bibliothèque
- **c.** des installations informatiques
- **d.** des services de counseling et d'orientation non pédagogiques des autres installations et services de soutien

3.5.2 **Corps professoral :** Le caractère distinctif de l'expérience éducative est fortement influencé par la compétence, l'expertise et l'attitude du corps professoral. Le corps professoral chargé de dispenser le programme doit posséder les caractéristiques suivantes:

3.5.2.1 Le corps professoral doit être en nombre suffisant pour pouvoir couvrir, en termes d'expérience et d'intérêt, tous les aspects du programme d'études.

3.5.2.2 Même s'il peut comprendre du personnel à temps plein et à temps partiel, le corps professoral doit compter un nombre suffisant de professeurs à temps plein pour assurer un niveau adéquat d'interactions avec les étudiants, pouvoir conseiller les étudiants en matière d'orientation pédagogique, et participer au développement, au contrôle et à l'administration du programme d'études.

3.5.2.3 Les tâches administratives et pédagogiques du corps professoral devraient être correctement équilibrées, de manière à permettre aux enseignants de poursuivre des activités de recherche, d'avancement des connaissances, de développement professionnel et d'interaction avec les secteurs d'industrie.

3.5.2.4 L'existence d'un programme d'études ne doit en aucun cas dépendre d'une seule personne.

3.5.3 **Leadership :** Le doyen de la faculté de génie (ou son équivalent) et le directeur du département (ou l'administrateur assumant la responsabilité globale de chaque programme de génie) doivent assurer un leadership efficace de la formation en génie et jouir de la plus haute estime au sein de la profession d'ingénieur. On s'attend à ce qu'ils soient titulaires d'un permis d'exercice du génie au Canada.

Pour évaluer la conformité à cette norme, le Bureau d'agrément se fondera sur l'*Énoncé d'interprétation sur les attentes et les exigences en matière de permis d'exercice*, qui est joint à ce document à titre d'annexe.

3.5.4 **Expertise et compétence du corps professoral :** Les membres du corps professoral qui dispensent le programme d'études en génie doivent faire preuve d'un haut niveau d'expertise et de compétence et promouvoir les objectifs de la formation en génie et de la profession autoréglementée de l'ingénieur. La compétence globale du corps professoral est évaluée en fonction des critères suivants :

a. The level of academic education of its members.
b. The diversity of their backgrounds, including the nature and scope of their non-academic experience.
c. Their ability to communicate effectively.
d. Their experience and accomplishments in teaching, research and/or engineering practice.
e. Their degree of participation in professional, scientific, engineering, and learned societies.
f. Their appreciation of the role and importance of the self-regulating engineering profession, and of positive attitudes towards professional licensure and involvement in professional affairs.

3.5.5 **Professional status of faculty members:** Faculty delivering curriculum content that is engineering science and/or engineering design are expected to be licensed to practise engineering in Canada.

To evaluate this criterion, the Accreditation Board will rely on the *Interpretive statement on licensure expectations and requirements*, which is attached as an appendix to this document.

3.5.6 **Financial resources:** Financial resources must be sufficient to ensure that:

Qualified academic staff can be recruited, retained, and provided with continuing professional development.

Qualified support staff can be recruited, retained, and provided with continuing professional development.

Infrastructure can be acquired, maintained, and renewed.

Equipment can be acquired, maintained, and renewed.

3.5.7 **Authority and responsibility for the engineering program:** The Engineering Faculty Council (or equivalent engineering body) must have clear, documented authority and responsibility for the engineering program, regardless of the administrative structure within which the engineering program is delivered.

3.5.8 **Curriculum committee:** Engineering program curriculum changes are expected to be overseen by a formally structured curriculum committee. The majority of the voting members of the committee are expected to be licensed to practise engineering in Canada.

a. La formation universitaire de ses membres.
b. La diversité de cette formation, y compris la nature et l'étendue de leur expérience du secteur industriel.
c. Leur capacité à communiquer efficacement.
d. Leur expérience et leurs réalisations au plan de l'enseignement, de la recherche et/ou de la pratique du génie.
e. Leur degré de participation à des sociétés d'ingénieurs et des sociétés professionnelles, scientifiques et savantes.
f. Leur appréciation du rôle et de l'importance de la profession autoréglementée de l'ingénieur, et d'une attitude positive à l'égard du permis d'exercice et leur participation aux affaires professionnelles.

3.5.5 **Statut des membres du corps professoral à l'égard de la profession d'ingénieur :** Les professeurs qui donnent des cours portant essentiellement sur les sciences du génie et la conception en ingénierie devraient être titulaires d'un permis d'exercice du génie au Canada.

Pour évaluer la conformité à cette norme, le Bureau d'agrément se fondera sur l'*Énoncé d'interprétation sur les attentes et les exigences en matière de permis d'exercice*, qui est joint à ce document à titre d'annexe.

3.5.6 **Ressources financières :** Les ressources financières de l'établissement d'enseignement doivent être suffisantes pour assurer :

Le recrutement, le maintien en poste et le développement professionnel continu de professeurs qualifiés;

Le recrutement, le maintien en poste et le développement professionnel continu de personnel de soutien qualifié;

L'acquisition, l'entretien et le renouvellement des infrastructures;

L'acquisition, l'entretien et le renouvellement des équipements.

3.5.7 **Contrôle et responsabilité du programme de génie :** Le conseil de la faculté de génie (ou l'instance universitaire équivalente) doit exercer un contrôle clair et documenté sur le contenu du programme d'études, et en assumer la responsabilité, quelle que soit la structure administrative du programme de génie en question.

3.5.8 **Comité des études :** Les modifications apportées au programme d'études en génie devraient être supervisées par un comité des études officiellement constitué. La majorité des membres votants de ce comité devraient être des ingénieurs titulaires d'un permis d'exercice au Canada.

3.6 Additional criteria

3.6.1 For purposes of accreditation, a program is characterized by a formally approved and published curriculum that is regarded as an entity by the institution and that can be considered independently. All options in the program are examined. Following the principle that a program is only as strong as its "weakest link", a program is accredited only if all options meet the criteria.

3.6.2 An accredited program must have the word "engineering" in its title.

3.6.3 The title of an accredited engineering program must be properly descriptive of the curriculum content.

3.6.4 If a program, by virtue of its title, becomes subject to the content requirements for two or more engineering curricula, then the program must meet the Accreditation Board requirements for each engineering curriculum named.

3.6.5 The Accreditation Board must have evidence that all engineering options contain a significant amount of distinct curriculum content and that the name of each option is descriptive of that curriculum content. An *Interpretive statement on curriculum content for options and dual-discipline programs* is attached as an appendix to this document.

3.6.6 The Accreditation Board must have evidence that the program name is appropriate for all students graduating in the program regardless of the option taken.

3.6 Normes additionnelles

3.6.1 Pour les besoins de l'agrément, un programme de génie se caractérise par un programme d'études officiellement approuvé et publié, considéré comme une entité distincte par l'établissement d'enseignement. Le Bureau d'agrément examine toutes les options du programme. Suivant le principe selon lequel la solidité d'un programme se mesure par son « maillon le plus faible », un programme d'études n'est agréé que si toutes ses options satisfont aux normes établies.

3.6.2 Un programme agréé doit comprendre le mot « génie » ou « ingénierie » dans son titre.

3.6.3 Le titre d'un programme de génie agréé doit bien décrire le contenu du programme d'études.

3.6.4 Si, en vertu de son titre, un programme doit répondre aux exigences d'agrément de deux programmes ou plus, le programme en question doit satisfaire aux exigences d'agrément du Bureau d'agrément pour chacun des programmes de génie nommés.

3.6.5 Le Bureau d'agrément doit avoir des preuves que toutes les options du programme de génie offrent un contenu distinct suffisant et que le nom de chaque option décrit bien le contenu en question. À cet égard, le document *Énoncé d'interprétation : Matière des cours dans les options d'un programme et dans les programmes bidisciplinaires* est joint à titre d'annexe.

3.6.6 Le Bureau d'agrément doit avoir des preuves que le titre du programme est approprié pour tous les étudiants obtenant un diplôme dans le cadre du programme, peu importe l'option choisie.

4. Accreditation policies and procedures

The accreditation process comprises two parts: program evaluation by a visiting team and accreditation decision by the Accreditation Board. The evaluation of the program is based on detailed data provided by the institution and on the collective opinion of the members of the visiting team.

The accreditation decision is made by the Accreditation Board based on qualitative and quantitative considerations, including the program response to the visit report.

4.1 Initiation and timing of accreditation visit

An accreditation assessment is initiated only at the invitation of an institution and with the consent of the appropriate member of Engineers Canada.

4. Politiques et procédures d'agrément

Le processus d'agrément comprend deux parties : l'évaluation du programme, effectuée par une équipe de visiteurs et la décision d'agrément prise par le Bureau d'agrément. L'évaluation du programme est basée sur les données détaillées fournies par l'établissement et sur l'opinion collective des membres de l'équipe de visiteurs.

La décision d'agrément prise par le Bureau d'agrément est fondée sur les critères à la fois qualitatifs et quantitatifs, notamment la réponse des responsables du programme au rapport de l'équipe de visiteurs.

4.1 Demande d'agrément et moment de la visite

Le processus d'évaluation d'un programme en vue de son agrément n'est amorcé qu'à la demande expresse d'un établissement et avec le consentement du membre constituant d'Ingénieur Canada concerné.

Accreditation applies only to programs, not to departments or faculties.

The Accreditation Board does not evaluate or accredit non-engineering degrees, diplomas, or certificates or components thereof; only the engineering degree will be listed in the annual report section on accredited engineering programs.

An accreditation visit to assess or reassess an engineering program or programs normally takes place in October or November. A request from the institution for such a visit must be received by the Accreditation Board Secretariat by January 1st of the calendar year in which the visit is to take place.

Accreditation of a program is granted only after students have graduated from the program. For new programs, an accreditation visit may be undertaken in the final year of the first graduating class.

4.2 Selection of visiting team

The Accreditation Board selects a chair for the visiting team; usually, the chair is a member of the Accreditation Board. The other members of the visiting team are selected by the chair except for the member(s) selected by the Accreditation Board in consultation with the appropriate regulator of Engineers Canada. All visiting team members must be registered professional engineers. A request for a replacement on the visiting team may be made by the institution only for good cause.

4.3 Preparation for accreditation visit

Several months before the date of an accreditation visit, the Accreditation Board Secretariat sends to the institution documentation required for the visit. This documentation includes: a questionnaire to be completed by the institution, details regarding procedures to be followed before, during and after the visit, documentation required by the visiting team and the Accreditation Board and a schedule of events for the entire process which concludes with the Accreditation Board's accreditation decision report to the institution.

Copies of the questionnaire, with supporting documentation, completed by the institution must be received by each visiting team member and the Accreditation Board Secretariat at least eight weeks before the visit. If adequate documentation is not received as required, the Accreditation Board Executive Committee, in consultation with the visiting team chair, may cancel the visit.

4.4 Accreditation visit

An accreditation visit normally spans over three days. It provides an opportunity for the visiting team to assess qualitative factors such as intellectual atmosphere and morale, professional attitudes and quality of staff and students. The visit provides the opportunity for such activities as:

L'agrément s'applique aux programmes, non aux départements ni aux facultés.

Le Bureau d'agrément n'évalue ni n'agrée les diplômes, grades, certificats ou composantes de programmes autres que des programmes de génie. Seul le programme de génie figurera dans le rapport annuel, à la section des programmes de génie agréés.

Une visite d'agrément visant l'évaluation ou la réévaluation d'un ou de plusieurs programmes de génie a lieu normalement en octobre ou en novembre. Une demande à cette fin doit être présentée par l'établissement et parvenir au secrétariat du Bureau d'agrément au plus tard le 1er janvier de l'année civile durant laquelle aura lieu la visite.

L'agrément ne peut être accordé qu'une fois que le programme compte des étudiants diplômés. Dans le cas d'un nouveau programme, une visite d'agrément peut être effectuée au cours de la dernière année de la première promotion.

4.2 Sélection de l'équipe de visiteurs

Le Bureau d'agrément nomme un président de l'équipe de visiteurs; normalement, il s'agit d'un membre du Bureau d'agrément. Les autres membres sont choisis par le président de l'équipe, sauf dans le cas du ou des membres nommés par le Bureau d'agrément en consultation avec l'organisme de réglementation d'Ingénieurs Canada concerné. Les membres de l'équipe de visiteurs doivent tous être des ingénieurs titulaires d'un permis d'exercice du génie au Canada. L'établissement peut demander le remplacement d'un membre de l'équipe, mais uniquement pour des motifs valables.

4.3 Préparation de la visite d'agrément

Plusieurs mois avant la date de la visite, le secrétariat du Bureau d'agrément fait parvenir à l'établissement la documentation requise pour la visite. Cette documentation comprend : un questionnaire qui doit être rempli par l'établissement, un état détaillé des procédures à suivre avant, pendant et après la visite, certains documents exigés par l'équipe de visiteurs et par le Bureau d'agrément et un échéancier décrivant le procédé complet jusqu'à son dénouement, soit la transmission, à l'établissement, de la décision concernant l'agrément.

Des copies du questionnaire dûment rempli, accompagnées de documents d'appui, sont transmises par l'établissement et doivent parvenir à chaque membre de l'équipe et au secrétariat du Bureau d'agrément au moins huit semaines avant le début de la visite. Si la documentation n'est pas reçue telle que demandée, le comité exécutif du Bureau d'agrément peut, après avoir consulté le président de l'équipe de visiteurs, annuler la visite.

4.4 Visite d'agrément

Une visite d'agrément se déroule normalement sur trois jours. Elle permet de faire l'évaluation qualitative de facteurs tels que l'ambiance intellectuelle, le moral, l'attitude professionnelle et la qualité du personnel et des étudiants. La visite donne l'occasion de mener des activités telles que :

a. interviews with appropriate senior administrative officers, including the president, the dean of engineering and the chairs of the departments responsible for the programs,

b. interviews with individuals and groups of faculty members to evaluate professional attitudes, motivations, morale and the balance of opinions concerning theoretical and practical elements of the curriculum,

c. interviews with individuals and groups of students,

d. tours of physical facilities such as laboratories, libraries and computing facilities to evaluate their effectiveness, and

e. a review of recent examination papers, laboratory instruction sheets, student transcripts (anonymous, if necessary), student reports and theses, models or equipment constructed by students and other evidence of student performance.

Before the end of the visit, the visiting team meets with the dean and, preferably, the chairs of the departments responsible for the programs to review the perceived strengths and weaknesses of the programs and to indicate any areas of concern.

4.5 Visiting team report

The chair of the visiting team, working with the team members, prepares a report on the program(s) visited. This is a report of the team's findings which includes: perceived strengths and weaknesses; areas of conformance to and deviation from the Accreditation Board criteria, as interpreted by the visiting team; matters of concern (both for the present and for the future); and, suggestions for improvement, if any. No recommendations for Accreditation Board accreditation action are included in the report.

The visiting team's findings, as outlined in the report, are sent by the Accreditation Board Secretariat to the institution for comment and reaction and to ensure accuracy and completeness. This also provides an opportunity for the institution to advise on improvements being implemented in the current academic year. The Accreditation Board may communicate with both the institution and the visiting team chair with the intent of ensuring that the program dossier is complete.

4.6 Accreditation decision

The accreditation decision is made by the Accreditation Board as the result of information gained from the accreditation visit process or from reports submitted by the institution at the request of the Accreditation Board.

In arriving at an accreditation decision following a visit, the Accreditation Board considers the accreditation history, the

a. des entretiens avec certains membres de la haute direction, y compris le président ou recteur, le doyen de la faculté de génie et les directeurs de départements responsables des programmes;

b. des entretiens individuels et en groupes avec les membres du corps professoral pour en juger le professionnalisme, la motivation et l'attitude ainsi que pour établir le juste milieu des opinions sur les aspects théoriques et pratiques du programme d'études;

c. des entretiens avec les étudiants, individuels et en groupes;

d. une tournée des installations physiques telles que les laboratoires, les bibliothèques et les installations informatiques, dans le but d'en évaluer l'efficacité;

e. une revue d'examens récents, de feuillets d'instructions de laboratoire, de bulletins de notes (anonymes au besoin), de rapports et de thèses d'étudiants, de modèles ou d'appareils construits par les étudiants et d'autres preuves de réalisations d'étudiants.

Avant la fin de la visite, l'équipe rencontre une dernière fois le doyen et, autant que possible, les directeurs de départements responsables des programmes afin de passer en revue les points forts et les points faibles perçus dans chaque programme et de leur faire part des éléments préoccupants.

4.5 Rapport de l'équipe de visiteurs

Le président, en collaboration avec les membres de son équipe, rédige un compte rendu des constatations de l'équipe sur le ou les programmes examinés durant la visite. Ce rapport indique les points forts et les points faibles perçus, les éléments conformes et ceux non conformes aux normes du Bureau d'agrément, tels qu'interprétés par les membres de l'équipe, les éléments de préoccupation (autant pour le moment que pour l'avenir) et des suggestions d'amélioration, le cas échéant. Ce rapport ne comprend aucune recommandation au Bureau d'agrément concernant l'agrément.

Les constatations de l'équipe, telles qu'exposées dans le rapport, sont transmises par le secrétariat du Bureau d'agrément à l'établissement afin que ce dernier y réagisse et fasse part de ses commentaires et vérifie si les informations sont exactes et complètes. L'établissement peut profiter de cette occasion pour faire part d'améliorations mises en œuvre dans l'année universitaire en cours. Le Bureau d'agrément peut communiquer avec l'établissement et le président de l'équipe afin de s'assurer que le dossier concernant le ou les programmes est bien complet.

4.6 Décision concernant l'agrément

La décision concernant l'agrément prise par le Bureau d'agrément découle d'informations obtenues à la suite de la visite d'agrément ou de rapports préparés par l'établissement à la demande du Bureau d'agrément.

Pour en arriver à une décision à la suite d'une visite d'agrément, le Bureau d'agrément prend en considération les antécédents en

information included in the completed questionnaire, the visiting team report, the institution's response to the visiting team report, any further clarifying correspondence and any other relevant information.

In arriving at a decision following receipt of a report requested by the Accreditation Board, the Accreditation Board considers that report and any other relevant information.

4.6.1 Accreditation of a program is granted for a specific term, the maximum is six years. Any term of accreditation may be conditional upon the institution satisfying one or more requirements. The accreditation term ends on June 30 of the specified year. The term of accreditation is subject to review for cause at any time. Changes in an accredited program which violate the conditions under which accreditation was granted by the Accreditation Board may lead to an immediate reassessment of the program and/or termination of accreditation. Accreditation is granted if the Accreditation Board judges that, at the time of the decision, the program meets the published Accreditation Board criteria.

In some cases, accreditation for less than six years is granted to make the term of accreditation of the program coincide with the term of accreditation of the other programs at the institution. Moreover, if the Accreditation Board judges that there are areas of concern, accreditation may be granted for a term of less than six years.

A program may be granted a limited-term accreditation, extendable to a longer term (not exceeding six years), subject to receipt of a report which convinces the Accreditation Board that the matters giving rise to its concerns have been resolved adequately. After reviewing the report, the Accreditation Board may extend the accreditation, or it may issue a notice of termination of accreditation.
If the Accreditation Board judges that significant weaknesses exist in a currently accredited program, a Notice of Termination of Accreditation is issued. If the Accreditation Board judges that a currently unaccredited program does not meet the published Accreditation Board criteria, accreditation of the program is denied.

4.6.2 Following an Accreditation Board accreditation decision, the institution is notified of the decision through the dean and the president and the dean is provided with a comprehensive explanation for it. The institution is expected to inform students and staff of the process of accreditation and of the accreditation status of the program.

4.6.3 A notice of termination of accreditation specifies that the accreditation of the program is extended for a maximum of three years at which time the accreditation is terminated unless the Accreditation Board judges, before that date, that the matters giving rise to its

matière d'agrément, les données contenues dans le questionnaire rempli par l'établissement, le rapport de l'équipe de visiteurs, les réactions de l'établissement en réponse au rapport de l'équipe, toute autre correspondance explicative et toute autre information pertinente.

Pour en arriver à une décision à la suite de la réception d'un rapport qu'il a demandé, le Bureau d'agrément prend en considération ce rapport et toute autre information pertinente.

4.6.1 L'agrément est accordé pour une certaine période, la période maximale est six ans; toute période d'agrément peut être conditionnelle à ce que l'établissement satisfasse à une ou plusieurs exigences. Cette période se termine toujours le 30 juin de l'année spécifiée dans la décision et sa durée peut être révisée, pour un motif valable, en tout temps. Tout changement dans un programme agréé qui contrevient aux conditions selon lesquelles l'agrément a été accordé peut entraîner une réévaluation immédiate du programme ou le retrait de l'agrément ou les deux. L'agrément est accordé lorsque le Bureau d'agrément juge que le programme satisfait aux normes officielles du Bureau d'agrément au moment où la décision est prise.

Dans certains cas, une période d'agrément de moins de six ans est accordée simplement pour la faire coïncider avec la période d'agrément d'autres programmes de l'établissement. Il va sans dire que si le Bureau d'agrément juge que certains aspects sont préoccupants, la période d'agrément du programme en question peut être inférieure à six ans.

Il peut arriver qu'un programme soit agréé provisoirement pour une période limitée, mais que cette période puisse être prolongée (jamais au-delà de six ans) sur réception d'un rapport établissant de façon convaincante que les points préoccupants ont été résolus comme il se doit. Après avoir étudié le rapport, le Bureau d'agrément peut décider de prolonger la période d'agrément ou d'émettre un avis de retrait d'agrément.
S'il juge qu'un programme déjà agréé démontre des faiblesses importantes, le Bureau d'agrément émet un avis de retrait d'agrément. De même, s'il juge qu'un programme non agréé ne satisfait pas à ses normes officielles, le Bureau d'agrément refuse d'accorder l'agrément.

4.6.2 La décision du Bureau d'agrément est communiquée au doyen et au président ou recteur de l'établissement, le doyen recevant également l'explication complète de la décision. Il incombe à l'établissement de faire part aux étudiants et au personnel du processus d'agrément et du statut du programme en matière d'agrément.

4.6.3 Un avis de retrait d'agrément précise que l'agrément du programme est prolongé pour une période maximale de trois ans après quoi il sera retiré, à moins que le Bureau d'agrément juge, avant la fin de cette période, que les points préoccupants notés ont été résolus de manière

concerns have been resolved adequately. To determine whether these matters have been resolved adequately, both a report and an accreditation visit may be required. If the Accreditation Board judges that the matters giving rise to its concerns have not been resolved adequately, the accreditation of the program is terminated on the date specified in the original Notice of Termination of Accreditation. If the Accreditation Board judges that the matters giving rise to its concerns have been resolved adequately, accreditation is extended for an appropriate period and no loss of accreditation will have occurred.

4.6.4 In the event that an unaccredited program is denied accreditation, the institution may submit a request for an early re-visit. This request, accompanied by a description of positive changes that have been implemented, must be received by the Accreditation Board Secretariat within 60 days of the notification to the institution of the accreditation action of the Accreditation Board. If the Accreditation Board Executive Committee is satisfied that positive changes of substance have been made, a re-visit will be scheduled for the fall or winter immediately following the decision to deny accreditation.

4.6.5 The Accreditation Board reserves the right to alter the accreditation status of any program at any institution if that program is not in compliance with any of the Accreditation Board's accreditation criteria or regulations.

4.7 Notice of significant program change

Any significant change that takes place during the term of accreditation of an accredited engineering program must be reported to the Accreditation Board. Any change related to an aspect referred to in the Accreditation Criteria and Procedures and related regulations is a significant change giving rise to the reporting obligations and may necessitate an immediate reassessment. Any change in the title of an accredited program requires approval by the Accreditation Board for that program's continued accreditation. When an institution supplies information for the renewal or extension of accreditation, it has an obligation to highlight and notify the Accreditation Board of any changes to the program.

4.8 Formal review

In the event of a decision by the Accreditation Board to terminate the accreditation of a program or to deny accreditation to an unaccredited program, the institution may apply for a formal review of the Accreditation Board decision. The formal review follows procedures established by Engineers Canada. The *Procedures for formal review of an Accreditation Board decision to deny accreditation* are included as an appendix in this publication.

adéquate. Pour le déterminer, il se peut qu'un rapport et une visite d'agrément soient tous deux nécessaires. Si le Bureau d'agrément juge que les points préoccupants notés n'ont pas été résolus de manière adéquate, l'agrément du programme prend fin à la date mentionnée dans l'avis de retrait d'agrément. Si le Bureau d'agrément juge le contraire, l'agrément est prolongé pour une période appropriée et le programme ne subit aucun arrêt d'agrément.

4.6.4 Si l'agrément est refusé dans le cas d'un programme non agréé, l'établissement peut présenter une demande de nouvelle visite anticipée. Cette demande, accompagnée d'une description des changements valables qui ont été mis en œuvre, doit parvenir au secrétariat du Bureau d'agrément dans les 60 jours qui suivent la date de communication de la décision de refus du Bureau d'agrément. Si le comité exécutif du Bureau d'agrément juge qu'il y a eu des améliorations importantes, une nouvelle visite a lieu au cours de l'automne ou de l'hiver qui suit le refus d'agrément.

4.6.5 Le Bureau d'agrément se réserve le droit de modifier le statut d'agrément de tout programme de n'importe quel établissement s'il découvre qu'un programme agréé n'est pas conforme à l'une ou l'autre de ses normes ou de ses règles d'agrément.

4.7 Avis de modification importante apportée aux programmes

Toute modification importante apportée à un programme agréé pendant la période d'agrément doit être signalée au Bureau d'agrément. Tout changement lié à un aspect cité dans les Normes et procédures d'agrément et les règlements connexes constitue un changement d'importance exigeant la présentation d'un rapport à cet égard et pouvant nécessiter une réévaluation immédiate. Tout changement dans le titre d'un programme agréé exige l'approbation du Bureau d'agrément pour que l'agrément soit maintenu. L'établissement qui fournit des informations pour le renouvellement ou la prolongation de l'agrément d'un programme a l'obligation de faire ressortir tout changement apporté au programme en question et d'en aviser le Bureau d'agrément.

4.8 Révision officielle

Dans le cas où le Bureau d'agrément décide de retirer l'agrément d'un programme ou de refuser d'accorder l'agrément à un programme non agréé, l'établissement peut présenter une demande de révision officielle de la décision du Bureau d'agrément. Le processus de révision officielle est établi par Ingénieurs Canada. Les *Procédures de révision officielle d'une décision de refus d'agrément rendue par le Bureau d'agrément* sont jointes en annexe.

4.9 Informal evaluation or visit

If requested by an institution, the Accreditation Board will assist to arrange for an informal evaluation of a proposal or an informal visit to an unaccredited program at an appropriate time in its development. The purpose of the evaluation or visit is to provide comment and advice to the institution with respect to the program. No undertaking is given by the Accreditation Board as to the eventual accreditation of the program. A report is presented to the institution. No report is presented to the Accreditation Board. The cost of such an evaluation or visit, including nominal compensation for the visitors or persons who are asked to carry out the evaluation, is borne by the institution.

4.10 Publication

Records and deliberations of the Accreditation Board are kept confidential. The list of accredited programs maintained by the Accreditation Board Secretariat includes only those programs that have been accredited by the Accreditation Board, together with the effective date or dates. The list is made available on request and is published in the annual report of the Accreditation Board. Documents describing policies and procedures of the Accreditation Board are also maintained by the Accreditation Board Secretariat and are available upon request.

4.9 Évaluation ou visite non officielle

À la demande d'un établissement, le Bureau d'agrément aide à prendre les dispositions nécessaires pour qu'une évaluation non officielle d'une proposition ou une visite non officielle d'un programme non agréé ait lieu à un moment opportun de l'élaboration du programme en question. Cette évaluation ou cette visite a pour objet de fournir à l'établissement des commentaires et des conseils à propos de ce programme. Le Bureau d'agrément ne prend aucun engagement en ce qui concerne l'agrément éventuel du programme. Un rapport est transmis à l'établissement, mais aucun rapport n'est présenté au Bureau d'agrément. Les coûts liés à l'évaluation ou à la visite, y compris une rémunération symbolique pour les visiteurs ou les personnes qui ont été chargées de l'évaluation, sont à la charge de l'établissement.

4.10 Diffusion

Les dossiers et les délibérations du Bureau d'agrément demeurent confidentiels. La liste des programmes agréés est tenue à jour par le secrétariat du Bureau d'agrément et ne comprend que les programmes agréés par le Bureau d'agrément avec la ou les dates de validité. Cette liste est disponible sur demande et est publiée dans le rapport annuel du Bureau d'agrément. Les documents décrivant les politiques et les procédures du Bureau d'agrément sont également tenus à jour par le secrétariat du Bureau d'agrément et sont disponibles sur demande.

Accredited engineering programs by institution and by program title

Notes:

a) This listing of accredited programs includes only engineering programs which lead to a bachelor's degree.

b) Institutions listed have voluntarily requested that specific engineering programs be evaluated by the Accreditation Board. The terminology requested by the institution is shown.

c) A single date which follows the name of a program indicates the year of the first graduating class for which accreditation applies. It also applies to subsequent years and is still in force.

d) A double date following the name of a program indicates the period (inclusive of both years) for which the program was accredited. This may occur if the institution has discontinued the program under that specific name or has not requested renewal of accreditation or if the Accreditation Board has denied such renewal.

e) The appearance of a third date indicates that accreditation has been renewed from that particular year on, after a time interval.

Programmes de génie agréés par établissement et par titre de programme

Remarques :

a) La liste des programmes agréés ne comprend que les programmes de génie menant au grade de bachelier.

b) Les établissements d'enseignement énumérés ont, de leur propre chef, demandé au Bureau d'agrément d'évaluer certains de leurs programmes. La terminologie utilisée est celle qui a été choisie par l'établissement.

c) Lorsque le nom d'un programme est suivi d'une seule date, cette date correspond à l'année de la première promotion à laquelle l'agrément s'applique. L'agrément s'applique également aux années subséquentes et est toujours en vigueur.

d) Lorsque le nom d'un programme est suivi de deux dates, ces dates correspondent à la période (y compris les deux années mentionnées) pour laquelle le programme a bénéficié de l'agrément. Une telle situation peut se produire si l'établissement a cessé d'offrir le programme sous ce nom particulier, si l'agrément est arrivé à son terme sans que l'établissement en demande le renouvellement, ou encore si le Bureau d'agrément a refusé d'accorder ce renouvellement.

e) Si une troisième date apparaît, celle-ci indique le renouvellement de l'agrément à partir de cette année-là, après un intervalle.

Accredited engineering programs by institution
Programmes de génie agréés par établissement

See explanatory notes on page 23 / Voir les remarques explicatives à la page 23

Alberta, University of
Edmonton, Alberta T6G 2G8
- ***Faculty of Engineering***

Agricultural Eng'g: 1983-1995.
Chemical Eng'g: 1965-
Civil Eng'g: 1965-
Computer Eng'g: 1983-
Electrical Eng'g: 1965-
Engineering Physics: 1988-
Materials Eng'g: 1999-
Mechanical Eng'g: 1965-
Metallurgical Eng'g: 1965-2000.
Mineral Eng'g: 1976-1982.
Mineral Process Eng'g: 1983-1991.
Mining Eng'g: 1965-1975, 1983-
Petroleum Eng'g: 1978-

British Columbia Institute of Technology
Burnaby, British Columbia, V5G 3H2
- ***School of Construction and the Environment***

Civil Eng'g: 2010-
Mining and Mineral Resource Eng'g: 2019-
- ***School of Energy***

Electrical Eng'g: 2011-
Mechanical Eng'g: 2014-

British Columbia, The University of
Vancouver, British Columbia V6T 1Z4
- ***Faculty of Applied Science***

Agricultural Eng'g: 1965-1978.
Bio-Resource Eng'g: 1979-2001.
Biomedical Eng'g: 2021-
Chemical Eng'g: 1965-
Chemical and Biological Eng'g: 2003-
Civil Eng'g: 1965-
Computer Eng'g: 2000-
Electrical Eng'g: 1965-
Engineering Physics: 1965-
Environmental Eng'g: 2023-
Environmental Eng'g (jointly with Northern British Columbia): 2007-
Geological Eng'g: 1965-
Integrated Eng'g: 2003-
Manufacturing Eng'g: 2022-
Materials Eng'g: 2006-
Mechanical Eng'g: 1965-
Metallurgical Eng'g: 1965-1987.
Metals and Materials Eng'g: 1988-2005.
Mineral Eng'g: 1965-1979.
Mining Eng'g: 2004-
Mining and Mineral Process Eng'g: 1980-2005.

British Columbia-Okanagan, The University of
Kelowna, British Columbia, V1V 1V7
- ***Faculty of Applied Science***

Civil Eng'g: 2010-
Electrical Eng'g: 2010-
Manufacturing Eng'g: 2022-
Mechanical Eng'g: 2010-

Calgary, University of
Calgary, Alberta T2N 1N4
- ***Schulich School of Engineering***

Chemical Eng'g: 1969-
Civil Eng'g: 1969-
Computer Eng'g: 2002-2016.
Electrical Eng'g: 1969-
Energy Eng'g: 2017-
Geomatics Eng'g: 1996-
Manufacturing Eng'g: 1997-2015.
Mechanical Eng'g: 1969-
Oil and Gas Eng'g: 2001-
Software Eng'g: 2002-
Surveying Eng'g: 1982-1997.

Carleton University
Ottawa, Ontario K1S 5B6
- ***Faculty of Engineering and Design***

Aerospace Eng'g: 1992-
Architectural Conservation and Sustainability Eng'g: 2015-
Biomedical and Electrical Eng'g: 2010-
Biomedical and Mechanical Eng'g: 2012-
Civil Eng'g: 1965-
Communications Eng'g: 2002-
Computer Systems Eng'g: 1984-
Electrical Eng'g: 1965-
Engineering Physics: 2003-
Environmental Eng'g: 1996-
Mechanical Eng'g: 1965-
Software Eng'g: 2003-
Sustainable and Renewable Energy Eng'g: 2012-

Concordia University
Montréal, Québec H3G 1M8
(formerly/auparavant Sir George Williams University, 1959-1974)
- ***Faculty of Engineering and Computer Science***

Aerospace Eng'g: 2018-
Building Eng'g: 1982-
Civil Eng'g: 1969-
Computer Eng'g: 1983-
Electrical Eng'g: 1969-
Industrial Eng'g: 1995-
Mechanical Eng'g: 1969-
Software Eng'g: 2002-

Conestoga College Institute of Technology and Advanced Learning
Kitchener, Ontario N2G 4M4
- ***School of Engineering and Information Technology***

Building Systems Eng'g: 2022-
Electronic Systems Eng'g: 2014-
Mechanical Systems Eng'g: 2010-
Power Systems Eng'g: 2023-

Dalhousie University
Halifax, Nova Scotia B3J 2X4
(formerly/auparavant Dal Tech, 1997-2000 and/ et Technical University of Nova Scotia, 1981-1997 and/et Nova Scotia Technical College, 1907-1980)
- ***Faculty of Engineering***

Agricultural Eng'g: 1974-2000.
Biological Eng'g: 1997- 2014.
Chemical Eng'g: 1965-
Civil Eng'g: 1965-
Computer Eng'g: 2006-2014.
Electrical Eng'g: 1965-
Engineering Physics: 1987-1991.
Environmental Eng'g: 2006-
Industrial Eng'g: 1969-
Materials Eng'g: 2005-2020.
Mechanical Eng'g: 1965-
Metallurgical Eng'g: 1965-1977, 1981-2005.
Mineral Resources Eng'g: 2007-
Mining Eng'g: 1965-2006.

École de technologie supérieure
Montréal, Québec H2T 2C8
(affiliated with / affiliée à l'Université du Québec)
Génie de la construction : 1993-
Génie de la production automatisée : 1990-
Génie des opérations et de la logistique : 2008-
Génie des technologies de l'information : 2006-
Génie électrique : 1990-
Génie et gestion de la construction : 1990-1996.
Génie logiciel : 2004-
Génie mécanique : 1990-

Georgian College
Barrie, Ontario L4M 3X9
(see/voir Lakehead University)

Guelph, University of
Guelph, Ontario N1G 2W1
- ***School of Engineering***

Agricultural Eng'g: 1973-1995.
Biological Eng'g: 1973-
Biomedical Eng'g: 2014-
Computer Eng'g: 2014-
Engineering Systems and Computing: 1994-
Environmental Eng'g: 1993-
Food Eng'g: 1993-2000.
Mechanical Eng'g: 2013-
Water Resources Eng'g: 1973-

Lakehead University
Thunder Bay, Ontario P7B 5E1
- ***Faculty of Engineering***

Chemical Eng'g: 1974-
Civil Eng'g: 1974-
Electrical Eng'g: 1974-
Mechanical Eng'g: 1974-
Software Eng'g: 2002-

▪ ***Georgian College campus (partnership)****
Electrical Eng'g: 2021-
*Graduates of the Electrical Engineering program on this campus completed a Bachelor of Engineering (Electrical) Degree with Electrical Engineering Technology Advanced Diploma. The Bachelor of Engineering is delivered by Lakehead University and the Technology Advanced Diploma is delivered by Georgian College. Only the Bachelor of Engineering is accredited by the Canadian Engineering Accreditation Board.
*Les diplômés du programme en Electrical Engineering ayant étudié sur ce campus reçoivent un Bachelor of Engineering (Electrical) Degree with Electrical Engineering Technology Advanced Diploma. Le Bachelor of Engineering est delivre par Lakehead University, et le Technology Advanced Diploma est delivre par Georgian College. Seul le Bachelor of Engineering est agréée par le Bureau canadien d'agrément des programmes de génie.

Laurentian University
Sudbury, Ontario P3E 2C6
▪ ***School of Engineering***
Chemical Eng'g: 2006-
Extractive Metallurgical Eng'g: 1987-2006.
Extractive Metallurgy: 1985-1986.
Mechanical Eng'g: 2011-
Mining Eng'g: 1987-

Laval, Université
Québec, Québec G1K 7P4
▪ ***Faculté de foresterie, de géographie et de géomatique***
Génie du bois : 2002-
Génie géomatique : 2007-
▪ ***Faculté des sciences de l'agriculture et de l'alimentation***
Génie agroenvironnemental : 2002-
Génie alimentaire : 1997-
▪ ***Faculté des sciences et de génie***
Génie chimique : 1965-
Génie civil : 1965-
Génie des eaux : 2009-
Génie électrique : 1965-
Génie géologique : 1965-
Génie industriel : 2014-
Génie informatique : 1993-
Génie logiciel : 2006-
Génie des matériaux et de la métallurgie : 1990-
Génie mécanique : 1965-
Génie métallurgique : 1965-1990.
Génie des mines et de la minéralurgie : 1990-
Génie minier : 1965-1990.
Génie physique : 1965-
Génie rural : 1973-2002.

Manitoba, The University of
Winnipeg, Manitoba R3T 2N2
▪ ***Faculty of Engineering***
Agricultural Eng'g: 1971-1998.
Biosystems Eng'g: 1996-
Civil Eng'g: 1965-
Computer Eng'g: 1987-
Electrical Eng'g: 1965-
Geological Eng'g: 1965-2001.
Industrial Eng'g: 1987-2005.
Manufacturing Eng'g: 2003-2013.
Mechanical Eng'g: 1965-

McGill University
Montréal, Québec H3A 2K6
▪ ***Faculty of Agricultural and Environmental Sciences***
Bioresource Eng'g: 2005-
▪ ***Faculty of Engineering***
Agricultural Eng'g (Macdonald College): 1971-2006.
Bioengineering: 2020-
Chemical Eng'g: 1965-
Civil Eng'g: 1965-
Computer Eng'g: 1993-
Co-op in Software Eng'g (formerly know as: Software Eng'g): 2021-
Electrical Eng'g: 1965-
Materials Eng'g: 2005-
Mechanical Eng'g: 1965-
Metallurgical Eng'g: 1965-2007.
Mining Eng'g: 1965-
Software En'g': 2007-2021.

McMaster University*
Hamilton, Ontario L8S 4L7
▪ ***Faculty of Engineering***
Ceramic Eng'g: 1974-1998.
Chemical and Biomedical Eng'g: 2022-
Chemical Eng'g: 1965-
Chemical Eng'g and Bioengineering: 2006-
Civil and Biomedical Eng'g: 2022-
Civil Eng'g: 1989-
Civil Eng'g and Computer Systems: 1992-1995.
Civil Eng'g and Eng'g Mechanics: 1965-1988.
Computer Eng'g: 1981-
Electrical and Biomedical Eng'g (B.Eng.): 2006-
Electrical and Biomedical Eng'g (BME): 2022-
Electrical Eng'g: 1965-
Engineering Physics: 1974-
Engineering Physics and Biomedical Eng'g: 2022-
Manufacturing Eng'g: 1982-2005.
Materials and Biomedical Eng'g: 2022-
Materials Eng'g: 1990-
Mechanical and Biomedical Eng'g: 2022-
Mechanical Eng'g: 1965-
Mechatronics and Biomedical Eng'g: 2022-
Mechatronics Eng'g: 2009-
Metallurgical Eng'g: 1965-1997.
Software and Biomedical Eng'g: 2022-
Software Eng'g: 2001-
*Graduates of programs at this institution may have completed additional non-technical studies, such as a management or society option, that will be listed on their transcripts. These transcripts contain wording such as "(Discipline) Engineering and Management" or "(Discipline) Engineering and Society". Only the engineering component of these programs is accredited by the Canadian Engineering Accreditation Board; thus, even though these options meet the accreditation requirements, only the base engineering programs are listed here.
*Il se peut que les diplômés des programmes de cet établissement aient effectué des études supplémentaires non techniques, comme l'offrent par exemple les options gestion ou société, qui seront libellées sur leur relevé de notes de la façon suivante : « (Discipline) Engineering and Management » ou « (Discipline) Engineering and Society ». Seule la composante génie de ces programmes est agréée par le Bureau canadien d'agrément des programmes de génie. Par conséquent, bien que ces options répondent aux exigences en matière d'agrément, seuls les programmes de base en génie sont énumérés dans le présent document.

Memorial University of Newfoundland
St. John's, Newfoundland A1B 3X5
▪ ***Faculty of Engineering and Applied Science***
Civil Eng'g: 1975-
Computer Eng'g: 2002-
Electrical Eng'g: 1975-
Mechanical Eng'g: 1975-
Naval Architectural Eng'g: 1986-1996.
Ocean and Naval Architectural Eng'g: 1997-
Process Eng'g: 2013-
Shipbuilding Eng'g: 1982-1985.

Moncton, Université de
Moncton, Nouveau-Brunswick E1A 3E9
▪ ***Faculté d'ingénierie***
Génie civil : 1972-
Génie électrique : 1998-
Génie industriel : 1975-2009.
Génie mécanique : 1990-

New Brunswick, University of
Fredericton, New Brunswick E3B 5A3
▪ ***Faculty of Computer Science***
Software Eng'g: 2006-
▪ ***Faculty of Engineering***
Chemical Eng'g: 1965-
Civil Eng'g: 1965-
Computer Eng'g: 2001-2017.
Electrical Eng'g: 1965-
Forest Eng'g: 1972-2016.
Geological Eng'g: 1984-
Geomatics Eng'g: 1999-
Mechanical Eng'g: 1965-
Surveying Eng'g: 1972-1999.

Northern British Columbia, University of
Prince George, British Columbia V2N 4Z9
▪ ***Faculty of Science and Engineering***
Civil Eng'g: 2023-

Environmental Eng'g: 2023-
Environmental Eng'g (jointly with British Columbia): 2007-

Nova Scotia Technical College

(see/voir Dalhousie University)
NSTC offered accredited engineering programs from 1965 to 1980.
NSTC a offert des programmes de génie agréés de 1965 à 1980.

Nova Scotia, Technical University of

(see/voir Dalhousie University)
TUNS offered accredited engineering programs from 1981 to 1996. However, students who enrolled prior to April 1, 1997, and graduated after that date can request that their degree be in the name of TUNS.
TUNS a offert des programmes de génie agréés de 1981 à 1996 mais les étudiants qui se sont inscrits avant le 1er avril 1997 et qui ont obtenu leur diplôme après cette date peuvent demander que leur diplôme porte le nom de TUNS.

Ontario Institute of Technology, University of*

Oshawa, Ontario L1H 7K4

- ***Faculty of Engineering and Applied Science***

Automotive Eng'g: 2009-
Electrical Eng'g: 2009-
Manufacturing Eng'g: 2007-
Mechanical Eng'g: 2008-
Mechatronics Eng'g: 2020-
Software Eng'g: 2009-
Nuclear Eng'g: 2007-
*Graduates of programs at this institution may have completed additional non- technical studies, such as a management option, that will be listed on their degrees and transcripts. These degrees and transcripts contain wording such as "(Discipline) Engineering and Management". Only the engineering component of these programs is accredited by the Canadian Engineering Accreditation Board; thus, even though these options meet the accreditation requirements, only the base engineering programs are listed here.
*Il se peut que les diplômés des programmes de cet établissement aient effectué des études supplémentaires non techniques, comme l'offre par exemple l'option gestion, qui sera libellée sur leur diplôme et leur relevé de notes de la façon suivante : « (Discipline) Engineering and Management ». Seule la composante génie de ces programmes est agréée par le Bureau canadien d'agrément des programmes de génie. Par conséquent, bien que ces options répondent aux exigences en matière d'agrément, seuls les programmes de base en génie sont énumérés dans le présent document.

Ontario Tech University

(see/voir Ontario Institute of Technology, University of)

Ottawa, University of

Ottawa, Ontario K1N 6N5

- ***Faculty of Engineering***

Biomedical Mechanical Eng'g: 2009-
Chemical Eng'g: 1965-
Civil Eng'g: 1971-
Computer Eng'g: 1990-
Electrical Eng'g: 1965-
Mechanical Eng'g: 1971-
Software Eng'g: 2001-

Polytechnique, École

Montréal, Québec H3C 3A7
(affiliated with / affiliée à l'Université de Montréal)
Génie aérospatial : 2012-
Génie biomédical : 2012-
Génie chimique : 1965-
Génie civil : 1965-
Génie électrique : 1965-
Génie géologique : 1965-
Génie industriel : 1973-
Génie informatique : 1989-
Génie logiciel : 2005-
Génie des matériaux : 1990-2012.
Génie mécanique : 1965-
Génie métallurgique : 1965-1989.
Génie des mines : 1991-
Génie minier : 1965-1991.
Génie physique : 1965-

Prince Edward Island, University of

Charlottetown, PE C1A 4P3

- ***School of Sustainable Design Engineering***

Sustainable Design Eng'g: 2017-

Québec en Abitibi-Témiscamingue, Université du

Rouyn-Noranda, Québec J9X 5E4

- ***Unité d'enseignement et de recherche en sciences appliquées***

Génie électromécanique : 2000-
Génie mécanique : 2010-
Génie électrique : 2021-

Québec à Chicoutimi, Université du

Chicoutimi, Québec G7H 2B1

- ***Département des sciences appliquées***

Génie civil : 2012-
Génie électrique : 2004-
Génie géologique : 1983-
Génie informatique : 1992-
Génie mécanique : 2004-
Génie unifié : 1981-2009.
Ingénierie de l'aluminium : 2008-2012.

Québec à Montréal, Université du

Montréal, Québec H3C 3P8

- ***Faculté des sciences***

Génie microélectronique : 2007-2018.

Québec en Outaouais, Université du

Gatineau, Québec J8X 3X7
(formerly/auparavant Québec à Hull, Université du)

- ***Module de l'ingénierie***

Génie informatique : 2002-
Génie électrique: 2018-

Québec à Rimouski, Université du

Rimouski, Québec G5L 3A1

- ***Module de génie***

Génie civil : 2023-
Génie des systèmes électromécaniques : 1998-
Génie électrique : 2009-
Génie mécanique : 2009-

Québec à Trois-Rivières, Université du

Trois-Rivières, Québec G9A 5H7

- ***École d'ingénierie***

Génie chimique : 1990-2016.
Génie électrique : 1978-
Génie industriel : 1980-
Génie mécanique : 2000-
Génie mécanique manufacturier : 1987-1999.

- ***Campus de Drummondville***

Drummondville, Québec J2C 0R5
Génie mécanique: 2020-

Queen's University

Kingston, Ontario K7L 3N6

- ***Stephen J.R. Smith Faculty of Engineering and Applied Science***

Chemical Eng'g: 1965-
Civil Eng'g: 1965-
Computer Eng'g: 2002-
Electrical Eng'g: 1965-
Engineering Chemistry: 1979-
Engineering Physics: 1965-
Geological Eng'g: 1975-
Materials and Metallurgical Eng'g: 1992-2002.
Mathematics and Engineering: 1974-
Mechanical Eng'g: 1965-
Metallurgical Eng'g: 1965-1991.
Mining Eng'g: 1965-

Regina, University of

Regina, Saskatchewan S4S 0A2

- ***Faculty of Engineering and Applied Science***

Electronic Information Systems Eng'g: 1986-1994.
Electronic Systems Eng'g: 1995-
Environmental Systems Eng'g: 1997-
Industrial Systems Eng'g: 1984-
Petroleum Systems Eng'g: 2003-
Regional Environmental Systems Eng'g: 1990-1997.
Regional Systems Eng'g: 1984-1989.
Software Systems Eng'g: 2007-
Systems Eng'g: 1981-1983.

Royal Military College of Canada

Kingston, Ontario K7K 5L0

- ***Faculty of Engineering***

Aeronautical Eng'g: 2009-
Chemical Eng'g: 1965-1981, 2001-
Chemical and Materials Eng'g: 1992-2001.
Civil Eng'g: 1965-

Computer Eng'g: 1983-
Electrical Eng'g: 1965-
Engineering and Management: 1972-1995.
Engineering Physics: 1975-1995.
Fuels and Materials Eng'g: 1982-1991.
Mechanical Eng'g: 1965-

Ryerson Polytechnical Institute

(see/voir Toronto Metropolitan University)
RPI offered accredited engineering programs in 1992. / RPI a offert des programmes de génie agréés en 1992.

Ryerson Polytechnic University (RPU)

(see/voir Toronto Metropolitan University)
RPU offered accredited engineering programs from 1992 to 2002.
RPU a offert des programmes de génie agréés de 1992 à 2002.

Ryerson University

(see/voir Toronto Metropolitan University)
Ryerson University offered accredited engineering programs from 2002 to 2023. / RPI a offert des programmes de génie agréés de 2002 à 2023.

Saskatchewan, University of

Saskatoon, Saskatchewan S7N 0W0

- ***College of Engineering***

Agricultural Eng'g: 1965-1992.
Agricultural and Bioresource Eng'g: 1992-2014.
Biological Eng'g: 2014-2016.
Chemical Eng'g: 1965-
Civil Eng'g: 1965-
Computer Eng'g: 2009-
Electrical Eng'g: 1965-
Engineering Physics: 1965-
Environmental Eng'g: 2011-
Geological Eng'g: 1965-
Geological Eng'g (Geophysics): 1975-1999.
Mechanical Eng'g: 1965-
Mining Eng'g: 1974-1976.

Sherbrooke, Université de

Sherbrooke, Québec J1K 2R1

- ***Faculté de génie***

Génie biotechnologique : 2008-
Génie chimique : 1973-
Génie civil : 1965-
Génie du bâtiment : 2021-
Génie électrique : 1965-
Génie informatique : 1997-
Génie mécanique : 1965-
Génie robotique : 2021-

Simon Fraser University

Burnaby, British Columbia V5A 1S6

- ***School of Engineering Science***

Engineering Science: 1986-
Mechatronic Systems Eng'g: 2011-
Sustainable Energy Eng'g: 2022-

Sir George Williams University (SGW)

(see/voir Concordia University)
SGW offered accredited engineering programs from 1969 to 1974.
SGW a offert des programmes de génie agréés de 1969 à 1974.

Thompson Rivers University

Kamloops, British Columbia V2C 0C8

- ***Faculty of Science***

Software Eng'g: 2022-

Toronto, University of

Toronto, Ontario M5S 1A4

- ***Faculty of Applied Science and Engineering***

Chemical Eng'g: 1965-
Civil Eng'g: 1965-
Computer Eng'g: 1994-
Electrical Eng'g: 1965-
Engineering Science: 1965-
Geo-Engineering: 1983-1990.
Geological Eng'g: 1965-1974.
Geological Eng'g and Applied Earth Science: 1975-1982.
Geological and Mineral Eng'g: 1991-1998.
Industrial Eng'g: 1965-
Materials Eng'g: 1996-
Mechanical Eng'g: 1965-
Metallurgical Eng'g and Materials Science: 1986-1995.
Metallurgy & Materials Science: 1965-1985.
Mineral Eng'g: 1999-

Toronto Metropolitan University

Toronto, Ontario M5B 2K3
(formerly/auparavant Ryerson Polytechnical Institute, 1964-1992, and/et Ryerson Polytechnic University, 1992-2002), and/et Ryerson University (2002-2023)

- ***Faculty of Engineering and Architectural Science***

Aerospace Eng'g: 1992-
Biomedical Eng'g: 2012-
Chemical Eng'g: 1992-
Civil Eng'g: 1992-
Computer Eng'g: 2006-
Electrical Eng'g: 1992-
Industrial Eng'g: 1992-
Mechanical Eng'g: 1992-

Victoria, University of

Victoria, British Columbia V8W 2Y2

- ***Faculty of Engineering***

Biomedical Eng'g: 2016-
Civil Eng'g: 2017-
Computer Eng'g: 1988-
Electrical Eng'g: 1988-
Mechanical Eng'g: 1992-
Software Eng'g: 2007-

Waterloo, University of

Waterloo, Ontario N2L 3G1

- ***Faculty of Engineering***

Architectural Eng'g: 2023-
Biomedical Eng'g: 2019-
Chemical Eng'g: 1965-
Civil Eng'g: 1965-
Computer Eng'g: 1989-
Electrical Eng'g: 1965-
Environmental Eng'g: 1999-
Geological Eng'g: 1986-
Management Eng'g: 2012-
Mechanical Eng'g: 1965-
Mechatronics Eng'g: 2008-
Nanotechnology Eng'g: 2010-
Software Eng'g: 2006-
Systems Design Eng'g: 1974-

Western Ontario, The University of

London, Ontario N6A 5B9

- ***Faculty of Engineering***

Chemical Eng'g: 1965-1971, 2007-
Chemical and Biochemical Eng'g: 1972-2006.
Civil Eng'g: 1965-
Computer Eng'g: 2001-
Electrical Eng'g: 1965-
Green Process Eng'g: 2012-
Integrated Eng'g: 2001-
Materials Eng'g: 1968-1999.
Mechanical Eng'g: 1965-
Mechatronic Systems Eng'g: 2014-
Software Eng'g: 2001-

Windsor, University of

Windsor, Ontario N9B 3P4

- ***Faculty of Engineering***

Chemical Eng'g: 1965-1990.
Civil Eng'g: 1965-
Electrical Eng'g: 1965-
Engineering Materials: 1974-1991.
Environmental Eng'g: 1991-
Geological Eng'g: 1972-1989.
Industrial Eng'g: 1974-
Mechanical Eng'g: 1965-

York University

Toronto, Ontario M3J 1P3

- ***Lassonde School of Engineering***

Civil Eng'g: 2018-
Computer Eng'g: 2007-
Electrical Eng'g: 2017-
Geomatics Eng'g: 2007-
Mechanical Eng'g: 2018-
Software Eng'g: 2016-
Space Eng'g: 2007-

Accredited engineering programs by program title
Programmes de génie agréés par titre de programme

See explanatory notes on page 23 / Voir les remarques explicatives à la page 23

Aeronautical Engineering
Royal Military: 2009-

Aerospace Engineering
Carleton: 1992-
Concordia: 2018-
Toronto Metropolitan: 1992-

Agricultural Engineering
(see also/voir aussi Génie rural)
Alberta: 1983-1995.
British Columbia: 1965-1978.
Dalhousie: 1974-2000.
Guelph: 1973-1995.
Manitoba: 1971-1998.
McGill (Macdonald College): 1971-2006.
Saskatchewan: 1965-1992.

Agricultural and Bioresource Engineering
Saskatchewan: 1992-2014.

Architectural Engineering:
Waterloo: 2023-

Architectural Conservation and Sustainability Engineering:
Carleton: 2015-

Automotive Engineering
Ontario Institute of Technology: 2009-

Bioengineering
McGill: 2020-

Biological Engineering
Dalhousie: 1997- 2014.
Guelph: 1973-
Saskatchewan: 2014-2016.

Biomedical Engineering
(see also/voir aussi Génie biomédical)
British Columbia: 2021-
Guelph: 2014-
Toronto Metropolitan: 2012-
Victoria: 2016-
Waterloo: 2019-

Biomedical and Electrical Engineering
Carleton: 2010-

Biomedical and Mechanical Engineering
Carleton: 2012-

Biomedical Mechanical Engineering
Ottawa: 2009-

Bioresource Engineering
McGill: 2005-

Bio-resource Engineering
British Columbia: 1979-2001.

Biosystems Engineering
Manitoba: 1996-

Building Engineering
Concordia: 1982-

Building Systems Engineering
Conestoga: 2022-

Ceramic Engineering
McMaster: 1974-1998.

Chemical and Biochemical Engineering
Western Ontario: 1972-2006.

Chemical and Biological Engineering
British Columbia: 2003-

Chemical and Materials Engineering
Royal Military: 1992-2001.

Chemical and Biomedical Engineering
McMaster: 2022-

Chemical Engineering
(see also/voir aussi Génie chimique)
Alberta: 1965-
British Columbia: 1965-
Calgary: 1969-
Dalhousie: 1965-
Lakehead: 1974-
Laurentian: 2006-
McGill: 1965-
McMaster: 1965-
New Brunswick: 1965-
Ottawa: 1965-
Queen's: 1965-
Royal Military: 1965-1981, 2001-
Saskatchewan: 1965-
Toronto: 1965-
Toronto Metropolitan: 1992-
Waterloo: 1965-
Western Ontario: 1965-1971, 2007-
Windsor: 1965-1990.

Chemical Engineering and Bioengineering
McMaster: 2006-

Civil and Biomedical Engineering
McMaster: 2022-

Civil Engineering
(see also/voir aussi Génie civil)
Alberta: 1965-
British Columbia: 1965-
British Columbia Institute of Technology: 2010-
British Columbia - Okanagan: 2010-
Calgary: 1969-
Carleton: 1965-
Concordia: 1969-
Dalhousie: 1965-
Lakehead: 1974-
Manitoba: 1965-
McGill: 1965-
McMaster: 1989-
Memorial: 1975-
New Brunswick: 1965-
Northern British Columbia: 2023-
Ottawa: 1971-
Queen's: 1965-
Royal Military: 1965-
Saskatchewan: 1965-
Toronto: 1965-
Toronto Metropolitan: 1992-
Waterloo: 1965-
Western Ontario: 1965-
Windsor: 1965-
York: 2018-

Civil Engineering and Computer Systems
McMaster: 1992-1995.

Civil Engineering and Engineering Mechanics
McMaster: 1965-1988.

Communications Engineering
Carleton: 2002-

Computer Engineering
(see also/voir aussi Génie informatique)
Alberta: 1983-
British Columbia: 2000-
Calgary: 2002-2016.
Concordia: 1983-
Dalhousie: 2006-2014.
Guelph: 2014-
Manitoba: 1987-
McGill: 1993-
McMaster: 1981-
Memorial: 2002-
New Brunswick: 2001-2017.
Ottawa: 1990-
Queen's: 2002-
Royal Military: 1983-
Saskatchewan: 2009-
Toronto: 1994-
Toronto Metropolitan: 2006-
Victoria: 1988-
Waterloo: 1989-

Western Ontario: 2001-
York: 2007-

Computer Systems Engineering
Carleton: 1984-

Co-op in Software Engineering
McGill: 2021- *(formerly know as: Software Eng'g. See Software Engineering)*

Electrical and Biomedical Engineering (B.Eng.)
McMaster: 2006-

Electrical and Biomedical Engineering (BME)
McMaster: 2022-

Electrical Engineering
(see also/voir aussi Génie électrique)
Alberta: 1965-
British Columbia: 1965-
British Columbia Institute of Technology: 2011-
British Columbia - Okanagan: 2010-
Calgary: 1969-
Carleton: 1965-
Concordia: 1969-
Dalhousie: 1965-
Lakehead: 1974-
Lakehead (Georgian College): 2021-
Manitoba: 1965-
McGill: 1965-
McMaster: 1965-
Memorial: 1975-
New Brunswick: 1965-
Ontario Institute of Technology: 2009-
Ottawa: 1965-
Queen's: 1965-
Royal Military: 1965-
Saskatchewan: 1965-
Toronto: 1965-
Toronto Metropolitan: 1992-
Victoria: 1988-
Waterloo: 1965-
Western Ontario: 1965-
Windsor: 1965-

Electronic Information Systems Engineering
Regina: 1986-1994.

Electronic Systems Engineering
Conestoga: 2014-
Regina: 1995-

Energy Engineering
Calgary: 2017-

Engineering Chemistry
Queen's: 1979-

Engineering and Management
Royal Military: 1972-1995.

Engineering Materials
Windsor: 1974-1991.

Engineering Physics
(see also/voir aussi Génie physique)
Alberta: 1988-
British Columbia: 1965-
Carleton: 2003-
Dalhousie: 1987-1991.
McMaster: 1974-
Queen's: 1965-
Royal Military: 1975-1995.
Saskatchewan: 1965-

Engineering Physics and Biomedical Engineering
McMaster: 2022-

Engineering Science
Simon Fraser: 1986-
Toronto: 1965-

Engineering Systems and Computing
Guelph: 1994-

Environmental Engineering
British Columbia: 2023-
British Columbia (jointly with Northern British Columbia): 2007-
Carleton: 1996-
Dalhousie: 2006-
Guelph: 1993-
Northern British Columbia: 2023-
Northern British Columbia (jointly with British Columbia): 2007-
Saskatchewan: 2011-
Waterloo: 1999-
Windsor: 1991-

Environmental Systems Engineering
Regina: 1997-

Extractive Metallurgical Engineering
Laurentian: 1987-2006.

Extractive Metallurgy
Laurentian: 1985-1986.

Food Engineering
(see also/voir aussi Génie alimentaire)
Guelph: 1993-2000.

Forest Engineering
New Brunswick: 2012-2016.

Fuels and Materials Engineering
Royal Military: 1982-1991.

Génie aérospatial
(voir aussi/see also Aerospace Engineering)
Polytechnique: 2012-

Génie agroenvironnemental
Laval: 2002-

Génie alimentaire
(voir aussi/see also Food Engineering)
Laval: 1997-

Génie biotechnologique
Sherbrooke: 2008-

Génie biomédical
(voir aussi/see also Biomedical Engineering)
Polytechnique: 2012-

Génie chimique
(voir aussi/see also Chemical Engineering)
Laval: 1965-
Polytechnique: 1965-
Québec à Trois-Rivières: 1990-2016.
Sherbrooke: 1973-

Génie civil
(voir aussi/see also Civil Engineering)
Laval: 1965-
Moncton: 1972-
Polytechnique: 1965-
Québec à Chicoutimi: 2012-
Québec à Rimouski: 2023-
Sherbrooke: 1965-

Génie de la construction
École de technologie supérieure: 1993-

Génie de la production automatisée
École de technologie supérieure: 1990-

Génie des eaux
Laval: 2009-

Génie des matériaux
(voir aussi/see also Materials Engineering)
Polytechnique: 1990-2012.

Génie des matériaux et de la métallurgie
(voir aussi/see also Materials and Metallurgical Engineering)
Laval: 1990-

Génie des mines
(voir aussi/see also Mining Engineering)
Polytechnique: 1991-

Génie des mines et de la minéralurgie
(voir aussi/see also Mining and Mineral Process Engineering and/et Mining and Mineral Resources Engineering)
Laval: 1990-

Génie des opérations et de la logistique
École de technologie supérieure: 2008-

Génie des systèmes électromécaniques
Québec à Rimouski: 1998-

Génie des technologies de l'information
École de technologie supérieure: 2006-

Génie du bâtiment
Sherbrooke: 2021-

Génie du bois
Laval: 2002-

Génie électrique
(voir aussi/see also Electrical Engineering)
École de technologie supérieure: 1990-
Laval: 1965-
Moncton: 1998-
Polytechnique: 1965-
Québec à Chicoutimi: 2004-
Québec à Rimouski: 2009-
Québec à Trois-Rivières: 1978-
Québec en Abitibi-Témiscamingue: 2021-
Québec en Outaouais: 2018-
Sherbrooke: 1965-

Génie électromécanique
Québec en Abitibi-Témiscamingue: 2000-

Génie et gestion de la construction
École de technologie supérieure: 1990-1996.

Génie géomatique
(voir aussi/see also Geomatics Engineering)
Laval: 2007-

Génie géologique
(voir aussi/see also Geological Engineering)
Laval: 1965-
Polytechnique: 1965-
Québec à Chicoutimi: 1983-

Génie industriel
(voir aussi/see also Industrial Engineering)
Laval: 2014-
Moncton: 1975-2009.
Polytechnique: 1973-
Québec à Trois-Rivières: 1980-

Génie informatique
(voir aussi/see also Computer Engineering)
Laval: 1993-
Polytechnique: 1989-
Québec à Chicoutimi: 1992-
Québec en Outaouais: 2002-
Sherbrooke: 1997-

Génie logiciel
(voir aussi/see also Software Engineering)
École de technologie supérieure: 2004-
Laval: 2006-
Polytechnique: 2005-

Génie mécanique
(voir aussi/see also Mechanical Engineering)
École de technologie supérieure: 1990-
Laval: 1965-
Moncton: 1990-
Polytechnique: 1965-
Québec à Chicoutimi: 2004-
Québec à Rimouski: 2009-
Québec à Trois-Rivières : 2000-
Québec à Trois-Rivières, Drummondville: 2020-
Québec en Abitibi-Témiscamingue: 2010-
Sherbrooke: 1965-

Génie mécanique manufacturier
Québec à Trois-Rivières: 1987-1999.

Génie métallurgique
(voir aussi/see also Metallurgical Engineering)
Laval: 1965-1990.
Polytechnique: 1965-1989.

Génie microélectronique
Québec à Montréal: 2007-2018.

Génie minier
(voir aussi/see also Mining Engineering)
Laval: 1965-1990.
Polytechnique: 1965-1991.

Génie physique
(voir aussi/see also Engineering Physics)
Laval: 1965-
Polytechnique: 1965-

Génie robotique
Sherbrooke: 2021-

Génie rural
(voir aussi/see also Agricultural Engineering)
Laval: 1973-2002.

Génie unifié
(voir aussi/see also Integrated Engineering)
Québec à Chicoutimi: 1981-2009.

Geo-Engineering
Toronto: 1983-1990.

Geological and Mineral Engineering
Toronto: 1991-1998.

Geological Engineering
(see also/voir aussi Génie géologique)
British Columbia: 1965-
Manitoba: 1965-2001.
New Brunswick: 1984-
Queen's: 1975-
Saskatchewan: 1965-
Toronto: 1965-1974.
Waterloo: 1986-
Windsor: 1972-1989.

Geological Engineering (Geophysics)
Saskatchewan: 1975-1999.

Geological Engineering and Applied Earth Science
Toronto: 1975-1982.

Geomatics Engineering
(see also/voir aussi Génie géomatique)
Calgary: 1996-
New Brunswick: 1999-
York: 2007-

Green Process Engineering
Western Ontario: 2012-

Industrial Engineering
(see also/voir aussi Génie industriel)
Concordia: 1995-
Dalhousie: 1969-
Manitoba: 1987-2005.
Toronto: 1965-
Toronto Metropolitan: 1992-
Windsor: 1974-

Industrial Systems Engineering
Regina: 1984-

Ingénierie de l'aluminium
Québec à Chicoutimi: 2008-2012.

Integrated Engineering
(see also/voir aussi Génie unifié)
British Columbia: 2003-
Western Ontario: 2001-

Management Engineering
Waterloo: 2012-

Manufacturing Engineering
British Columbia: 2022-
British Columbia – Okanagan: 2022-
Calgary: 1997-2015.
Manitoba: 2003-2013.
McMaster: 1982-2005.
Ontario Institute of Technology: 2007-

Materials and Biomedical Engineering
McMaster: 2022-

Materials and Metallurgical Engineering
(see also/voir aussi Génie des matériaux et de la métallurgie)
Queen's: 1992-2002.

Materials Engineering
(see also/voir aussi Génie des matériaux)
Alberta: 1999-
British Columbia: 2006-
Dalhousie: 2005-2020.
McGill: 2005-
McMaster: 1990-
Toronto: 1996-
Western Ontario: 1968-1999.

Mathematics and Engineering
Queen's: 1974-

Mechanical and Biomedical Engineering
McMaster: 2022-

Mechanical Engineering
(see also/voir aussi Génie mécanique)
Alberta: 1965-
British Columbia: 1965-

British Columbia - Okanagan: 2010-
British Columbia Institute of Technology: 2014-
Guelph: 2013-
Lakehead: 1974-
Laurentian: 2011-
Manitoba: 1965-
McGill: 1965-
McMaster: 1965-
Memorial: 1975-
New Brunswick: 1965-
Ontario Institute of Technology: 2008-
Ottawa: 1971-
Queen's: 1965-
Royal Military: 1965-
Saskatchewan: 1965-
Toronto: 1965-
Toronto Metropolitan: 1992-
Victoria: 1992-
Waterloo: 1965-
Western Ontario: 1965-
Windsor: 1965-
York: 2018-

Mechanical Systems Engineering
Conestoga: 2010-

Mechatronic Systems Engineering
Simon Fraser: 2011-
Western Ontario: 2014-

Mechatronics and Biomedical Engineering
McMaster: 2022-

Mechatronics Engineering
Waterloo: 2008-
McMaster: 2009-
Ontario Institute of Technology: 2020-

Metallurgical Engineering
(see also/voir aussi Génie métallurgique)
Alberta: 1965-2000.
British Columbia: 1965-1987.
Dalhousie: 1965-1977, 1981-2005.
McGill: 1965-2007.
McMaster: 1965-1997.
Queen's: 1965-1991.

Metallurgical Engineering and Materials Science
Toronto: 1986-1995.

Metallurgy and Materials Science
Toronto: 1965-1985.

Metals and Materials Engineering
British Columbia: 1988-2005

Mineral Engineering
Alberta: 1976-1982.
British Columbia: 1965-1979.
Toronto: 1999-
Calgary: 1969-
Carleton: 1965-

Mineral Resources Engineering
Dalhousie: 2007-

Mineral Process Engineering
Alberta: 1983-1991.

Mining and Mineral Process Engineering
(see also/voir aussi Génie des mines et de la minéralurgie)
British Columbia: 1980-2005.

Mining and Mineral Resource Engineering
(see also/voir aussi Génie des mines et de la minéralurgie)
British Columbia Institute of Technology: 2019-

Mining Engineering
(see also/voir aussi Génie minier and/et Génie des mines)
Alberta: 1965-1975, 1983-
British Columbia: 2004-
Dalhousie: 1965-2006.
Laurentian: 1987-
McGill: 1965-
Queen's: 1965-
Saskatchewan: 1974-1976.

Nanotechnology Engineering
Waterloo: 2010-

Naval Architectural Engineering
Memorial: 1986-1996.

Nuclear Engineering
Ontario Institute of Technology: 2007-

Ocean and Naval Architectural Engineering
Memorial: 1997-

Oil and Gas Engineering
Calgary: 2001-

Petroleum Engineering
Alberta: 1978-

Petroleum Systems Engineering
Regina: 2003-

Power Systems Engineering
Conestoga: 2023-

Process Engineering
Memorial: 2013-

Regional Systems Engineering
Regina: 1984-1989.

Regional Environmental Systems Engineering
Regina: 1990-1997.
Concordia: 1969-
Dalhousie: 1965-

Shipbuilding Engineering
Memorial: 1982-1985.

Software and Biomedical Engineering
McMaster: 2022-

Software Engineering
(see also/voir aussi Génie logiciel)
Calgary: 2002-
Carleton: 2003-
Concordia: 2002-
Lakehead: 2002-
McGill: 2007-2021. (Software Eng'g name changed to Co-op in Software Eng'g in 2021. See Co-op in Software Eng'g)
McMaster: 2001-
New Brunswick: 2006-
Ottawa: 2001-
Ontario Institute of Technology: 2009-
Thompson Rivers: 2022-
Victoria: 2007-
Waterloo: 2006-
Western Ontario: 2001-
York: 2016-

Software Systems Engineering
Regina: 2007-

Space Engineering
York: 2007-

Surveying Engineering
Calgary: 1982-1997.
New Brunswick: 1972-1999.

Sustainable and Renewable Energy Engineering
Carleton: 2012-

Sustainable Energy Engineering
Simon Fraser: 2022-

Systems Design Engineering
Waterloo: 1974-

Systems Engineering
Regina: 1981-1983.

Water Resources Engineering
Guelph: 1973-

Substantially equivalent programs

In 1997, Engineers Canada expanded the Accreditation Board's mandate to include evaluations of engineering programs outside Canada. These evaluations follow Accreditation Board policies and procedures and may lead to a decision of "substantial equivalency" of programs offered by foreign institutions. Since Canadian Engineering Accreditation Board accreditation is designed to provide graduates with an education satisfying the academic requirements for licensure as a professional engineer within Canada, the Accreditation Board uses the term "accreditation" only within Canada. Evaluations conducted outside Canada are therefore called substantial equivalency evaluations.

"Substantial equivalency" means comparable in program content and educational experience, and it implies reasonable confidence that the graduates possess the academic competencies needed to begin professional practice at the entry level. The Accreditation Board recommends that Engineers Canada's member engineering regulators treat graduates of programs evaluated as substantially equivalent like graduates of Canadian Engineering Accreditation Board-accredited programs for the period that substantial equivalence is in effect.

The document entitled *Procedures for Engineers Canada substantial equivalency evaluations* is available as an appendix in this document.

Notes:
Institutions listed have voluntarily requested that specific engineering programs be evaluated by the Accreditation Board. The terminology requested by the institution is shown.

A single date which follows the name of a program indicates the year of the first graduating class for which the equivalency applies. It also applies to subsequent years and is still in force.

A double date following the name of a program indicates the period (inclusive of both years) for which the program was judged to be substantially equivalent. This may occur if the institution has discontinued the program under that specific name or has not requested renewal of the equivalency or if the Accreditation Board has denied such renewal.

Programmes substantiellement équivalents

En 1997, Ingénieurs Canada a élargi le mandat du Bureau canadien d'agrément des programmes de génie afin qu'il comprenne l'évaluation des programmes de génie en dehors du Canada. Ces évaluations sont effectuées en conformité avec les politiques et pratiques du Bureau d'agrément et peuvent aboutir à une décision « d'équivalence substantielle » à l'égard des programmes offerts par les établissements étrangers. Comme l'agrément accordé par le Bureau d'agrément vise à procurer aux diplômés une formation répondant aux exigences de formation universitaire pour l'admission à la profession au Canada, le Bureau d'agrément n'utilise le terme « agrément » que pour les programmes offerts au Canada. Les évaluations effectuées en dehors du Canada sont par conséquent appelées des évaluations d'équivalence substantielle.

L'expression « équivalence substantielle » signifie que le contenu et l'expérience éducationnelle d'un programme sont comparables et laisse entendre avec raisonnablement de confiance que les diplômés de ce programme possèdent les titres de compétences requis pour commencer à exercer la profession au niveau d'entrée. Le Bureau d'agrément recommande aux organismes de règlementation du génie membres d'Ingénieurs Canada de traiter les diplômés des programmes jugés substantiellement équivalents comme des diplômés de programmes agréés par le Bureau d'agrément, tant que l'équivalence substantielle est en vigueur.

Le document intitulé *Procédures s'appliquant aux évaluations d'équivalence substantielle d'Ingénieurs Canada* est joint à titre d'annexe sont jointes à ce document à l'annexe.

Remarques :
Les établissements d'enseignement énumérés ont, de leur propre chef, demandé au Bureau d'agrément d'évaluer certains de leurs programmes. La terminologie utilisée est celle qui a été choisie par l'établissement.

Lorsque le nom d'un programme est suivi d'une seule date, cette date correspond à l'année de la première promotion à laquelle l'équivalence substantielle s'applique. L'équivalence substantielle s'applique également aux années subséquentes et est toujours en vigueur.

Lorsque le nom d'un programme est suivi de deux dates, ces dates correspondent à la période (y compris les deux années mentionnées) pour laquelle le programme a bénéficié de l'équivalence substantielle. Une telle situation peut se produire si l'établissement a cessé d'offrir le programme sous ce nom particulier, si l'équivalence substantielle est arrivée à son terme sans que l'établissement en demande le renouvellement, ou encore si le Bureau d'agrément a refusé d'accorder ce renouvellement.

The agreement entitled *Recognition of Equivalency of Engineering Education Courses/Program Leading to the Accredited Engineering Degree* (also called the *Washington Accord*) applies only to programs within the member countries and, therefore, the substantially equivalent programs do not fall under the agreement.

Universidad de Costa Rica
P.O. Box Universidad de Costa Rica
San José, Costa Rica

Chemical Engineering: 2014-2020.
Civil Engineering: 1999-2018.
Electrical Engineering: 2000-2018.
Industrial Engineering: 2000-2020.
Mechanical Engineering: 2008-2020.

Only the five-year program leading to the "Licenciatura" from the Universidad de Costa Rica is judged substantially equivalent.

Pontificia Universidad Católica del Perú
Av. Universitario
Cdra. 18 s/n, San Miguel
Perú

Electronic Engineering: 2008-2017.
Industrial Engineering: 2008-2017.
Informatics Engineering: 2008-2017.

Only the five-year program leading to the "Ingeniero" from the Pontificia Universidad Católica del Perú is judged substantially equivalent.

Instituto Tecnológico de Costa Rica
Central Campus Cartago
Cartago, Costa Rica

Agricultural Engineering: 2013-2022.
Computer Engineering: 2018-2020.
Construction Engineering: 2001-2022.
Electronic Engineering: 2004-2022.
Industrial Maintenance Engineering: 2001-2022.
Industrial Production Engineering: 2004-2022.
Materials Engineering: 2010-2019.
Mechatronic Engineering: 2018-2020.

Only the five-year program leading to the "Licenciatura" from the Instituto Tecnológico de Costa Rica is judged substantially equivalent.

Technische Universität Graz
Kopernikusgasse 24
A-8010 Graz, Austria

Mechanical Engineering: 2001-2007.
Mechanical Engineering-Economics: 2001-2007.

Only the program leading to the "B.Eng. SE" degree from the Technische Universität Graz was judged substantially equivalent.

L'accord intitulé *Reconnaissance de l'équivalence de programmes d'ingénierie accrédités menant au diplôme d'ingénieur* (aussi connu sous le nom d'*Accord de Washington*) s'applique uniquement aux programmes des pays membres et, par conséquent, les programmes substantiellement équivalents ne sont pas couverts par cet accord.

Universidad de Costa Rica
PO Box Universidad de Costa Rica
San José, Costa Rica

Génie chimique : 2014-2020.
Génie civil : 1999-2018.
Génie électrique : 2000-2018.
Génie industriel : 2000-2020.
Génie mécanique : 2008-2020.

Seul le programme de cinq ans menant à la « Licenciatura » de l'Universidad de Costa Rica est jugé comme étant substantiellement équivalent.

Pontificia Universidad Católica del Perú
Av. Universitario
Cdra. 18 s/n, San Miguel
Pérou

Génie électronique : 2008-2017.
Génie industriel : 2008-2017.
Génie informatique : 2008-2017.

Seul le programme de cinq ans menant à la désignation d'« Ingeniero » de la Pontificia Universidad Católica del Perú est jugé comme étant substantiellement équivalent.

Instituto Tecnológico de Costa Rica
Central Campus Cartago
Cartago, Costa Rica

Génie agricole : 2013-2022.
Génie informatique : 2018-2020.
Génie de la construction : 2001-2022.
Génie électronique : 2004-2022.
Génie de la maintenance industrielle : 2001-2022.
Génie de la production industrielle : 2004-2022.
Génie des matériaux : 2010-2019.
Génie mécatronique : 2018-2020.

Seul le programme de cinq ans menant à la « Licenciatura » de l'Instituto Tecnológico de Costa Rica est jugé comme étant substantiellement équivalent.

Technische Universität Graz
Kopernikusgasse 24
A-8010 Graz, Autriche

Génie mécanique : 2001-2007.
Génie mécanique - Économie : 2001-2007.

Seul le programme menant au grade de « B.Eng. SE » de la Technische Universität Graz a été jugé comme étant substantiellement équivalent.

Tomsk Polytechnic University
30, Lenin Avenue
Tomsk 634 050, Russia

Computer Engineering: 2005-2012.

Only the five-year program leading to the “diploma of specialist” from Tomsk Polytechnic University is judged substantially equivalent.

Tomsk Polytechnic University
30, Lenin Avenue
Tomsk 634 050, Russie

Génie informatique : 2005-2012.

Seul le programme menant au grade de « diplôme de spécialiste » de la Tomsk Polytechnic University est jugé comme étant substantiellement équivalent.

International mutual recognition agreements

Engineers Canada, through its International Committee, strives to achieve recognition by the international community of Canadian standards of excellence in engineering education and practice. Where appropriate, Engineers Canada will enter into agreements with other organizations concerning mutual recognition of accreditation systems or professional engineering qualifications.

The Canadian Engineering Accreditation Board assists in this mission by ascertaining the equivalency and acceptability of accreditation systems in other countries and by evaluating, upon request, foreign engineering education programs using Accreditation Board policies and procedures.

Two agreements in force recognize that the systems of the Accreditation Board and the other party for accreditation of programs leading to a degree in engineering are substantially equivalent and that the accredited programs of both parties satisfy the academic requirements for the practice of engineering at a professional level.

Accordingly, the signatories agree that the criteria, policies and procedures used by the signatories in accrediting engineering academic programs are comparable and that the accreditation decisions rendered by one signatory are acceptable to the other signatories, and that those signatories will so indicate by publishing statements to that effect in an appropriate manner.

The first of these agreements was signed in 1980 by the Canadian Engineering Accreditation Board and the Engineering Accreditation Commission of ABET of the United States of America. This agreement was updated by both parties and re-signed most recently in 2018. The agreement is valid for graduates of all programs accredited by the Engineering Accreditation Commission of ABET.

The Washington Accord

The second of these agreements, entitled *Recognition of Equivalency of Engineering Education Courses/Programs Leading to the Accredited Engineering Degree*, was signed in 1989 by representatives of engineering organizations from six countries.

The signatories to this agreement, referred to as the *Washington Accord*, were:

Canada: Canadian Engineering Accreditation Board

Australia: Engineers Australia

Ireland: Engineers Ireland

New Zealand: Engineering New Zealand

United Kingdom: The Engineering Council UK

Accords internationaux de reconnaissance mutuelle

Par l'intermédiaire de son Comité international, Ingénieurs Canada vise à faire reconnaître par la communauté internationale les normes d'excellence canadiennes pour l'enseignement et la pratique du génie. Lorsqu'il y a lieu, Ingénieurs Canada conclut avec d'autres organisations des accords de reconnaissance mutuelle des systèmes d'agrément ou des titres de compétences en génie.

Le Bureau canadien d'agrément des programmes de génie participe à ce processus en vérifiant l'équivalence des systèmes d'agrément d'autres pays pour déterminer s'ils sont acceptables et en évaluant, sur demande, des programmes de formation en génie de pays étrangers à la lumière des politiques et des procédures du Bureau d'agrément.

Deux accords actuellement en vigueur reconnaissent que les systèmes d'agrément utilisés par le Bureau d'agrément et l'autre partie pour évaluer les programmes menant à un diplôme de génie sont substantiellement équivalents et que les programmes agréés des deux parties satisfont aux exigences de formation requises pour l'exercice du génie au niveau professionnel.

Par conséquent, les signataires conviennent que leurs normes, leurs politiques et leurs procédures respectives en matière d'agrément des programmes de génie sont comparables et que les décisions d'agrément rendues par un signataire sont acceptables pour les autres signataires, ce qu'ils confirmeront en publiant des déclarations à cet effet de manière pertinente.

En 1980, le Bureau canadien d'agrément des programmes de génie a signé le premier de ces accords de reconnaissance mutuelle avec l'Engineering Accreditation Commission de l'ABET des États-Unis. Les deux parties ont mis à jour cet accord et ont re-signé en 2018. L'accord s'applique aux diplômés de tous les programmes agréés par l'Engineering Accreditation Commission de l'ABET.

Accord de Washington

En 1989, des représentants d'organisations d'ingénieurs de six pays ont signé le deuxième de ces accords, intitule *Reconnaissance de l'équivalence de programmes d'ingénierie accrédités menant au diplôme d'ingénieur*.

Les signataires de cet accord, maintenant appelé « *Accord de Washington* », étaient :

Canada : Bureau canadien d'agrément des programmes de génie

Australie : Engineers Australia

Irlande : Engineers Ireland

Nouvelle-Zélande : Engineering New Zealand

Royaume-Uni : The Engineering Council UK

United States of America: ABET (Accreditation Board for Engineering and Technology).
Following a series of verification activities by the Accreditation Board, this agreement was approved and ratified by Engineers Canada and is valid for graduates from 1989 onward. The earlier agreement with ABET of the United States remains in force.

South Africa: In 1993, the Engineering Council of South Africa was accepted, subject to satisfactory verification, as a signatory to the Agreement. The Accreditation Board completed its verification activities in 1999 and the agreement is valid for candidates who have graduated since 1999.

Hong Kong: In 1995, the Hong Kong Institution of Engineers was accepted as a signatory and after the Accreditation Board completed its verification activities in 1996, the agreement was ratified by Engineers Canada and is considered to be valid for candidates who have graduated since 1995.
In 1997, the Agreement was revised, mostly with respect to rules and procedures, subject to ratification by each of the signatories. Engineers Canada ratified the Agreement.

Japan: In 2005, the Japan Accreditation Board for Engineering Education was accepted as a signatory to the *Washington Accord*. That agreement was ratified by Engineers Canada and is considered to be valid for candidates who have graduated since 2005.

Singapore: In 2006, the Institution of Engineers, Singapore was accepted as a signatory to the *Washington Accord*. That agreement was ratified by Engineers Canada and is considered to be valid for candidates who have graduated since 2006.

Korea: In 2007, the Accreditation Board for Engineering Education of Korea was accepted as a signatory to the *Washington Accord*. That agreement was ratified by Engineers Canada and is considered to be valid for candidates who have graduated since 2007.

Taiwan (Chinese Taipei): In 2007, the Institute of Engineering Education Taiwan was accepted as a signatory to the *Washington Accord*. That agreement was ratified by Engineers Canada and is considered to be valid for candidates who have graduated since 2007.

Malaysia: In 2009, the Board of Engineers Malaysia was accepted as a signatory to the *Washington Accord*. That agreement was ratified by Engineers Canada and is considered to be valid for candidates who have graduated since 2009.

Turkey: In 2011, MÜDEK was accepted as a signatory of the *Washington Accord*. This agreement was ratified by Engineers Canada and is considered to be valid for candidates who have graduated since 2011.

Russia: In 2012, the Association for Engineering Education of Russia was accepted as a signatory of the *Washington Accord*. This agreement was ratified by Engineers Canada and is considered to be valid for candidates who have graduated since 2012.

États-Unis : ABET (Accreditation Board for Engineering and Technology).
Après que le Bureau d'agrément eut mené une série d'activités de vérification, Ingénieurs Canada a approuvé et ratifié l'Accord qui s'applique aux diplômés de 1989 et des années subséquentes. L'accord conclu antérieurement avec l'ABET des États-Unis demeure en vigueur.

Afrique du Sud : En 1993, l'Engineering Council of South Africa a été accepté à titre de signataire de l'Accord, sous réserve de vérification satisfaisante. Le Bureau d'agrément a effectué sa vérification en 1999 et l'accord s'applique aux diplômés de 1999 et des années subséquentes.

Hong Kong : En 1995, la Hong Kong Institution of Engineers a été acceptée à titre de signataire et, en 1996, une fois la vérification faite par le Bureau d'agrément, Ingénieurs Canada a ratifié l'accord qui est réputé s'appliquer aux diplômés de 1995 et des années subséquentes.
En 1997, l'Accord a été révisé, en particulier sous l'aspect des règles et des procédures, sous réserve de ratification par chacun des signataires. Ingénieurs Canada a ratifié l'Accord.

Japon : En 2005, le Japan Accreditation Board for Engineering Education a été accepté comme signataire de l'*Accord*. Ingénieurs Canada a ratifié l'accord qui est réputé s'appliquer aux diplômés de 2005 et des années subséquentes.

Singapour : En 2006, l'Institution of Engineers, Singapore a été acceptée à titre de signataire de l'*Accord*. Ingénieurs Canada a ratifié l'accord qui est réputé s'appliquer aux diplômés de 2006 et des années subséquentes.

Corée : En 2007, l'Accreditation Board for Engineering Education of Korea a été accepté à titre de signataire de l'*Accord*. Ingénieurs Canada a ratifié l'accord qui est réputé s'appliquer aux diplômés de 2007 et des années subséquentes.

Taiwan (Taipei chinois) : En 2007, l'Institute of Engineering Education Taiwan a été accepté à titre de signataire de l'*Accord*. Ingénieurs Canada a ratifié l'accord qui est réputé s'appliquer aux diplômés de 2007 et des années subséquentes.

Malaisie : En 2009, le Board of Engineers Malaysia a été accepté à titre de signataire de l'*Accord*. Ingénieurs Canada a ratifié l'accord qui est réputé s'appliquer aux diplômés de 2009 et des années subséquentes.

Turquie : En 2011, MÜDEK a été accepté à titre de signataire de l'*Accord*. Ingénieurs Canada a ratifié l'accord qui est réputé s'appliquer aux candidats qui ont obtenu leur diplôme en 2011 et les années subséquentes.

Russie : En 2012, l'Association for Engineering Education of Russia a été acceptée à titre de signataire de l'*Accord*. Ingénieurs Canada a ratifié l'accord qui est réputé s'appliquer aux candidats qui ont obtenu leur diplôme en 2012 et les années subséquentes.

India: In 2014, the National Board of Accreditation (NBA) India was accepted as a signatory of the *Washington Accord*. This applies to candidates who have graduated since June 2014.
Recognition of programs by other signatories applies only to programs accredited by NBA that are offered by education providers accepted by NBA as Tier 1 institutions.

Sri Lanka: In 2014, the Institution of Engineers Sri Lanka was accepted as a signatory of the Washington Accord. This is considered valid for candidates who have graduated since 2014.

China: In 2016, the China Association for Science and Technology (CAST) was accepted as a signatory of the *Washington Accord*. This is considered valid for candidates who have graduated since 2016.

Pakistan: In 2017, the Pakistan Engineering Council (PEC) was accepted as a signatory of the *Washington Accord*. This is considered valid for candidates who have graduated since 2017.

Peru: In 2018, the Instituto de Calidad y Acreditación de Programas de Computación, Ingeniería y Tecnología (ICACIT) was accepted as a signatory of the *Washington Accord*. This is considered valid for candidates who have graduated since 2018.

Costa Rica: In 2020, the Colegio Federado de Ingenieros y de Arquitectos de Costa Rica (CFIA) was accepted as a signatory of the Washington Accord. This is considered valid for candidates who have graduated from 2019.

Mexico: In 2022, Consejo de Acreditación de la Enseñanza de la Ingeniería (CACEI) was accepted as a signatory of the Washington Accord. This is considered valid for candidates who have graduated since 2021.

Indonesia: In 2022, the Indonesian Accreditation Board for Engineering Education (IABEE) was accepted as a signatory of the Washington Accord. This is considered valid for candidates who have graduated from 2021.

Washington Accord Secretariat

International Engineering Alliance
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Secretariat: Mr. Chris Johns
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Inde : En 2014, le National Board of Accreditation (NBA), India a été a accepté comme signataire de l'*Accord*. Cela s'applique aux candidats qui ont obtenu leur diplôme en 2014 et les années subséquentes. La reconnaissance de programmes par d'autres signataires ne s'applique qu'aux programmes agréés par le NBA qui sont offerts par les établissements d'enseignement reconnus par le NBA comme des établissements de niveau 1 (Tier 1 institution).

Sri Lanka : En 2014, l'Institution of Engineers Sri Lanka a été acceptée comme signataire de l'*Accord*. Cela s'applique aux candidats qui ont obtenu leur diplôme en 2014 et les années subséquentes.

Chine : En 2016, la China Association for Science and Technology (CAST) a été acceptée comme signataire de l'*Accord*. Cela s'applique aux candidats qui ont obtenu leur diplôme en 2016 et les années subséquentes.

Pakistan : En 2017, le Pakistan Engineering Council (PEC) a été accepté comme signataire de l'*Accord*. Cela s'applique aux candidats qui ont obtenu leur diplôme en 2017 et les années subséquentes.

Pérou : En 2018, le Instituto de Calidad y Acreditación de Programas de Computación, Ingeniería y Tecnología (ICACIT) Peru a été accepté comme signataire de l'*Accord*. Cela s'applique aux candidats qui ont obtenu leur diplôme en 2018 et les années subséquentes.

Costa Rica : En 2020, le Colegio Federado de Ingenieros y de Arquitectos de Costa Rica (CFIA) a été accepté comme signataire de l'*Accord*. Cela s'applique aux candidats qui ont obtenu leur diplôme en 2019 et les années subséquentes.

Mexique : En 2022, l'organisme Consejo de Acreditación de la Enseñanza de la Ingeniería (CACEI) a été accepté comme signataire de l'Accord de Washington. Cela s'applique aux candidats qui ont obtenu leur diplôme en 2021 et les années subséquentes

Indonésie : En 2022, l'organisme Indonesian Accreditation Board for Engineering Éducations (IABEE) a été accepté comme signataire de l'Accord de Washington. Cela s'applique aux candidats qui ont obtenu leur diplôme en 2021 et les années subséquentes

Secrétariat de l'Accord de Washington

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Commission des Titres d'Ingénieur

France: In 1999, Engineers Canada concluded an agreement with la Commission des Titres d'Ingénieur which considers that the accreditation processes used by la Commission and the Accreditation Board of Engineers Canada are substantially equivalent. The agreement enables recognition of Canadian professional engineers as "ingénieurs diplomés" in France. Ingénieurs diplomés who are graduates of programs recognized by la Commission, are granted access to the Canadian engineering associations or ordre without having to pass technical examinations. (Professional Engineers Ontario has not implemented the agreement, so the agreement is not in force for professional engineers licensed in Ontario.)

International organizations with mutual recognition agreements with Engineers Canada

Engineers Canada has also entered into professional level agreements intended to facilitate international mobility for licensed engineers through mutual recognition agreements (MRAs) with engineering organizations around the world. Currently, Engineers Canada has MRAs with the below organizations*. Additional information can be found at:

https://engineerscanada.ca/become-an-engineer/international-mobility-of-engineers/mutual-recognition-agreements

Commission des Titres d'Ingénieur

France : En 1999, Ingénieurs Canada a conclu un accord avec la Commission des Titres d'Ingénieur de France, accord reconnaissant que les processus d'agrément de la Commission et du Bureau canadien d'agrément des programmes de génie sont substantiellement équivalents. L'accord permet de reconnaître les ingénieurs canadiens comme des « ingénieurs diplômés » en France. Les ingénieurs diplômés issus de programmes reconnus par la Commission peuvent obtenir un permis auprès d'un ordre d'ingénieurs au Canada sans devoir subir d'examens techniques. (Professional Engineers Ontario ne l'ayant pas mis en application, l'accord avec la France ne concerne pas les ingénieurs inscrits en Ontario.)

Organismes internationaux ayant signé avec Ingénieurs Canada un accord de reconnaissance mutuelle

Ingénieurs Canada a également conclu des ententes au niveau professionnel destinées à faciliter la mobilité des ingénieurs à l'échelle internationale par le biais d'ententes de reconnaissance mutuelle (ERM) avec des organisations d'ingénieurs étrangères. À l'heure actuelle, Ingénieurs Canada a des ERM avec les organisations listées ci-dessous*. Des informations complémentaires sont disponibles à :
https://engineerscanada.ca/fr/devenir-ingenieur/repertoires-internationaux/ententes-de-reconnaissance-mutuelle

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Engineers Ireland
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Tel: +353-1-665-1317
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Engineers Australia
Chief Executive Officer: Romilly Madew
The Engineering House
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Barton ACT 2600, Australia
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Web: www.engineersaustralia.org.au

Texas Board of Professional Engineers and Land Surveyors
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Austin, Texas 78741, United States
Tel: 512-440-7723
Email: info@pels.texas.gov
Web: https://engineers.texas.gov/

Nevada State Board of Professional Engineers and Land Surveyors
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Tel: 775-688-1231
Email: board@boe.state.nv.us
Web: https://nvbpels.org/

*The adoption and recognition of these agreements by the Canadian engineering regulators varies across Canada. For information on whether an MRA is recognized in a specific province or territory, consult with the individual Canadian engineering regulatory bodies.

*L'adoption et la reconnaissance de ces ententes par les organismes de réglementation canadiens varient selon les provinces et les territoires. Pour savoir si une ERM est reconnue dans une province ou un territoire en particulier, adressez-vous à l'organisme canadien de réglementation du génie en question.

Chairs, members, and secretaries – from 1965 to date
Président.e.s, membres et secrétaires – de 1965 à ce jour

Chairs / Président.e.s

P.P. Biringer, P.Eng.	Toronto, ON	1965-68
C.A. Brockley, P.Eng.	Vancouver, BC	1968-70
I.W. Smith, P.Eng.	Toronto, ON	1970-72
R.M. Hardy, P.Eng.	Edmonton, AB	1972-74
J.L. Corneille, ing.	Montréal, QC	1974-76
D.J. Clough, P.Eng.	Waterloo, ON	1976-78
G. Ford, P.Eng.	Edmonton, AB	1978-79
P. Grenier, P.Eng.	Québec, QC	1979-80
G.A. Morris, FEC, P.Eng.	Winnipeg, MB	1980-81
J.A.H. Lund, FEC, P.Eng.	Vancouver, BC	1981-82
J. Delisle, ing.	Sherbrooke, QC	1982-83
R.A. Robertson, P.Eng.	St. John's, NF	1983-84
G.R. Slemon, P.Eng.	Toronto, ON	1984-85
G.R. Monforton, P.Eng.	Windsor, ON	1985-86
G.E. Laliberte, FEC, P.Eng.	Winnipeg, MB	1986-87
R.L. Papineau, FIC, ing.	Montréal, QC	1987-88
G.A. Simms, FEC, P.Eng.	Edmonton, AB	1988-89
A. Meisen, FEC, P.Eng.	Vancouver, BC	1989-90
A. Biron, FIC, ing.	Montréal, QC	1990-91
H.A.R. de Paiva, FEC, P.Eng.	Calgary, AB	1991-92
R.C. Biggs, FEC, P.Eng.	Ottawa, ON	1992-93
J.D. Aplevich, FEC, P.Eng.	Waterloo, ON	1993-94
L. Quesnel, FIC, ing.	Montréal, QC	1994-95
L.T. Russell, FEC, P.Eng.	Halifax, NS	1995-96
F.D. Otto, FEC, P.Eng.	Edmonton, AB	1996-97
G.Y. Delisle, FIC, ing.	Ste-Foy, QC	1997-98
R.M. Mathur, FEC, P.Eng.	London, ON	1998-99
W.I. Hughes, FEC, P.Eng.	Sechelt, BC	1999-00
E.R. Norris, FIC, ing.	Montréal, QC	2000-01
W.G. Paterson, FEC, P.Eng.	Fredericton, NB	2001-02
J.-Y. Chagnon, FIC, ing.	Québec, QC	2002-03
D.T. Lynch, FEC, P.Eng.	Edmonton, AB	2003-05
D.W. Ruth, FEC, P.Eng.	Winnipeg, MB	2005-07
G.R. Peters, FEC, P.Eng.	St. John's, NF	2007-09
J. O'Brien, FEC, P.Eng.	Toronto, ON	2009-11
R. Rochette, FIC, ing.	Trois-Rivières, QC	2011-12
M.J. Reeves, FEC, P.Eng.	Saskatoon, SK	2012-14
G. Lachiver, FIC, ing.	Sherbrooke, QC	2014-16
W. MacQuarrie, FEC, P.Eng.	Stratford, PEI	2016-18
L. Benedicenti, FEC, P.Eng.	Fredericton, NB	2018-20
B. Dony, FEC, P.Eng.	Guelph, ON	2020-21
P.G. Lafleur, FIC, ing.	Montréal, QC	2021-22
P.R. Klink, FEC, P.Eng.	Kingston, ON	2022-23
J.P. Cyrus, FEC, P.Eng.	Halifax, NS	2023-

Members / Membres

P.P. Biringer, P.Eng.	Toronto, ON	1965-69
C.A. Brockley, P.Eng.	Vancouver, BC	1965-71
A. Dubé, ing.	Québec, QC	1965-67
J.W. Gregg, P.Eng.	Calgary, AB	1965-69
R.A. Johnson, FEC, P.Eng.	Winnipeg, MB	1965-67
R.H.B. McLaughlin, P.Eng.	Fredericton, NB	1965-68
L. Gendron, ing.	Montréal, QC	1967-70
J.B. Mantle, FEC, P.Eng.	Regina, SK	1967-70
I.W. Smith, P.Eng.	Toronto, ON	1967-73
G.G. Meyerhof, P.Eng.	Halifax, NS	1968-71
R.M. Bartholomew, FEC, P.Eng.	Vancouver, BC	1969-72
R.M. Hardy, P.Eng.	Edmonton, AB	1969-75
J.L. Corneille, ing.	Montréal, QC	1970-77
P.A. Lapp, FEC, P.Eng.	Toronto, ON	1970-74
A.B. Thornton-Trump, P.Eng.	Winnipeg, MB	1970-73
A.M. Stevens, FEC, P.Eng.	Fredericton, NB	1971-74
R.A. Ritter, P.Eng.	Calgary, AB	1972-75
D.J. Clough, P.Eng.	Waterloo, ON	1973-79
D.G. Olafson, FEC, P.Eng.	Calgary, AB	1973-76
J.M. Ham, P.Eng.	Toronto, ON	1974-77
J.C. Maguire, P.Eng.	Lucknow, ON	1974-79
J.D. Smith, P.Eng.	Toronto, ON	1974-77
G. Ford, P.Eng.	Edmonton, AB	1975-80
E. Peters, P.Eng.	Vancouver, BC	1975-78
P. Grenier, ing.	Québec, QC	1976-81
G.A. Morris, FEC, P.Eng.	Winnipeg, MB	1976-82
A.A. Loiselle, ing.	Montréal, QC	1977-80
M. Pettigrew, FEC, P.Eng.	Edmundston, NB	1977-80
J.H. Wade, P.Eng.	Hamilton, ON	1977-80
P.R. Bélanger, ing.	Montréal, QC	1978-81
J.A.H. Lund, FEC, P.Eng.	Vancouver, BC	1978-83
M.J. Ozubko, FEC, P.Eng.	Edmonton, AB	1978-81
J. Delisle, ing.	Sherbrooke, QC	1979-84
E.J. Hinz, FEC, P.Eng.	Saskatoon, SK	1979-82
G.R. Monforton, P.Eng.	Windsor, ON	1980-87
G.V. Parkinson, P.Eng.	Vancouver, BC	1980-83
R.A. Robertson, P.Eng.	St. John’s, NF	1980-85
J.W. Rutter, P.Eng.	Toronto, ON	1980-83
P.J. Carreau, ing.	Montréal, QC	1981-84
I.G. Finlay, P.Eng.	Edmonton, AB	1981-84
G.R. Slemon, P.Eng.	Toronto, ON	1981-86
G.E. Laliberte, FEC, P.Eng.	Winnipeg, MB	1982-88
G.A. Simms, FEC, P.Eng.	Edmonton, AB	1982-90
P.L. Bourgault, P.Eng.	Ottawa, ON	1983-86
A. Meisen, FEC, P.Eng.	Vancouver, BC	1983-91
R.L. Papineau, FIC, ing.	Montréal, QC	1983-89

A. Biron, FIC, ing.	Montréal, QC	1984-92
H.A.R. de Paiva, FEC, P.Eng.	Calgary, AB	1984-93
W.J. Rainbird, P.Eng.	Toronto, ON	1984-86
D. Angers, ing.	Québec, QC	1985-88
R. Masse, ing.	Montréal, QC	1985-89
J.D. Aplevich, FEC, P.Eng.	Waterloo, ON	1986-95
R.C. Biggs, P.Eng.	Ottawa, ON	1986-95
R.E. Burridge, FEC, P.Eng.	Fredericton, NB	1986-89
R.R. Foster, FEC, P.Eng.	Winnipeg, MB	1986-94
B.A. Young, FEC, P.Eng.	Toronto, ON	1987-90
J.R. Grace, P.Eng.	Vancouver, BC	1988-92
M. Sayer, P.Eng.	Kingston, ON	1988-94
L. Quesnel, FIC, ing.	Montréal, QC	1989-96
L.T. Russell, FEC, P.Eng.	Halifax, NS	1989-97
R. Thibault, ing.	Sherbrooke, QC	1989-92
L.B. Halferdahl, P.Eng.	Edmonton, AB	1990-96
F.D. Otto, FEC, P.Eng.	Edmonton, AB	1990-98
G.Y. Delisle, FIC, ing.	Ste-Foy, QC	1991-99
W.I. Hughes, FEC, P.Eng.	Sechelt, BC	1992-01
R.M. Mathur, FEC, P.Eng.	London, ON	1992-00
B. Szabados, FEC, P.Eng.	Hamilton, ON	1992-01
E.R. Norris, FIC, P.Eng.	Montréal, QC	1993-02
M.A. Ball, FEC, P.Eng.	Regina, SK	1994-97
W.G. Paterson, FEC, P.Eng.	Fredericton, NB	1994-03
J.-Y. Chagnon, FIC, ing.	Québec, QC	1995-05
R.D. Venter, P.Eng.	Toronto, ON	1995-01
D.T. Lynch, FEC, P.Eng.	Edmonton, AB	1996-07
G. Turp, ing.	Montréal, QC	1996-98
D.W. Ruth, FEC, P.Eng.	Winnipeg, MB	1997-09
J.H. Willings, P.Eng.	Toronto, ON	1997-98
T.D. Vassos, FEC, P.Eng.	Vancouver, BC	1998-02
N. El-Jabi, P.Eng.	Moncton, NB	1998-01
E. Petriu, P.Eng.	Ottawa, ON	1999-02
P. Pounienkow, ing.	Hull, QC	1999-00
G.R. Peters, FEC, P.Eng.	St. John's, NF	2000-11
R.V. Barham, FEC, P. Eng.	Calgary, AB	2000-06
L. Audy, ing.	Trois-Rivières, QC	2001-03
R.M. Lepp, P.Eng.	Petawawa, ON	2001-07
J.G. Locker, FEC, P.Eng.	Thunder Bay, ON	2001-04
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P.H. Alexander, FEC, P.Eng.	Windsor, ON	2002-08
M.N. Danon-Schaffer, P.Eng.	Vancouver, BC	2002-05
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K.C. Watts, FEC, P.Eng.	Halifax, NS	2002-11
G. Lachiver, FIC, ing.	Sherbrooke, QC	2003-18
M.J. Reeves, FEC, P.Eng.	Saskatoon, SK	2003-16
R. Rochette, FIC, ing.	Trois-Rivières, QC	2003-14
M. Couturier, FEC, P. Eng.	Fredericton, NB	2004-13
S. Brzev, P.Eng.	Burnaby, BC	2005-11
W. MacQuarrie, FEC, P.Eng.	Stratford, PEI	2005-20
P.R. Amyotte, FEC, P.Eng.	Halifax, NS	2006-10
R. Hyde, P.Eng.	Vancouver, BC	2007-13
R.J. Kind, FEC, P.Eng.	Ottawa, ON	2007-16
J.K.W. Lee, FEC, P.Eng.	Kingston, ON	2008-13
G. Gendron, ing., P.Eng.	Laval, QC	2009-14
G. Reader, FEC, P.Eng.	Windsor, ON	2010-17
J. Blatz, FEC, P.Eng.	Winnipeg, MB	2011-14
D. Candido, FEC, P.Eng.	Edmonton, AB	2011-20
M. Isaacson, FEC, P.Eng.	Vancouver, BC	2011-17
J. Paynter, FEC, P.Eng.	Fredericton, NB	2011-17
N. Baaziz, ing.	Gatineau, QC	2012-15
P.G. Lafleur, FIC, ing.	Montréal, QC	2013-22
P.R. Klink, FEC, P.Eng.	Kingston, ON	2013-
B. Dony, FEC, P.Eng.	Guelph, ON	2013-22
J.P. Cyrus, FEC, P.Eng.	Halifax, NS	2014-
J. Pieper, FEC, P.Eng.	Calgary, AB	2014-
L. Benedicenti, FEC, P.Eng.	Fredericton, NB	2014-21
L. Quesnel, FIC, P.Eng.	Brossard, QC	2014-16
E. Cheung, FEC, P.Eng.	Prince George, BC	2014-
R. Gosine, FEC. P.Eng.	St. John's, NF	2016-
D. Isabel, FIC, ing.	Québec, QC	2016-18
S. Barrington, FIC, ing.	Brossard, QC	2017-
S. Kresta, FEC, P.Eng.	Saskatoon, AB	2017-21
A.-M. Laroche, ing.	Moncton, NB	2017-23
J. Pataky, P.Eng.	Vancouver, BC	2017-
T. Zrymiak, FEC, P.Eng.	Saskatoon, SK	2017-
R. Subramanian, FEC, P.Eng.	Sudbury, ON	2018-
J.A. Stewart, P.Eng.	Kingston, ON	2019-
W.H. Elmaraghy, FEC, P.Eng.	Windsor, ON	2019-23
L. Champagne, FIC, ing.	Longueuil, QC	2019-20
J. Card, FEC, P.Eng.	St. John's, NF	2019-21
P. Bourque, ing.	Montréal, QC	2020-
T. Joseph, P.Eng.	Edmonton, AB	2020-22
M. Mandal, P.Eng.	Edmonton, AB	2020-
J. K. W. Lee, P.Eng.	Saskatoon, SK	2021-
D. Spracklin-Reid, P.Eng.	St-John's, NL	2021-23
E. Barber, FEC, P.Eng.	Saskatoon, SK	2022-
D. Kennedy, P.Eng.	Vancouver, BC	2022-
N. Krouglicof, FEC, P.Eng.	Charlottetown, PEI	2022-
J. A. Foster, LLFM	Ottawa, ON	2023-
S. Jha, FEC, P.Eng.	Yellowknife, YT	2023-
M. Roach, P.Eng.	London, ON	2023-

Secretaries / Secrétaires

L.M. Nadeau, P.Eng. (Acting)	Ottawa, ON	1965-66
G.J. McGee, P.Eng.	Ottawa, ON	1966-78
G.M. Matthews, P.Eng.	Ottawa, ON	1978-92
S.W. Ryan-Bacon, P.Eng.	Smiths Falls, ON	1993-98
D.A. Wolfe, FEC, P.Eng.	Ottawa, ON	1998-09
G. Griffith, FEC, ing., P.Eng.	Ottawa, ON	2009-14
L.J. Villeneuve, LL.B.	Ottawa, ON	2014-15
K. Sutherland, FEC, P.Eng., LL.B.	Ottawa, ON	2015-17
L.J. Villeneuve, LL.B., FEC (Hon.)	Ottawa, ON	2017-19
M. Warken	Ottawa, ON	2019-

Members of Engineers Canada
Membres d'Ingénieurs Canada

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CEO & Registrar: Heidi Yang, P.Eng., FEC, FGC (Hon.)
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Interim CEO & Registrar: Michael Gregoire, P.Eng., MBA, FEC
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Appendices

Annexes

Appendix 1 Annexe 1

Regulations for granting transfer credits

Introduction

The following regulations apply to the granting of accreditation unit (AU) equivalencies (herein referred to as "transfer credits") to students for studies completed at the same institution or at an institution other than the one where they will receive their degree.

1.0 General requirements

1.1 The home institution[1] must verify and provide evidence that the curriculum content and quality criteria described in the Accreditation Criteria and Procedures are met by all students.

1.2 The home institution must verify and provide evidence that the academic level of the course for which credit is granted is equal to or above the academic level of the engineering program at the home institution.

1.3 At the discretion of the Accreditation Board a visit may be required to verify any evidence presented by a program. If a visit is required to an international destination, expenses will be borne by the institution.

1.4 There are no restrictions on transfers of credits among Accreditation Board-accredited programs, however in all cases at least 50% of the program shall be completed at the home institution.

1.5 Compliance with these regulations is required since January 1, 2013.

[1] **Home institution:** The degree-granting Canadian higher education institution (HEI) that has requested Accreditation Board accreditation for an engineering degree program that satisfies the academic requirements for the practice of engineering at a professional level. (In the case of substantial equivalency evaluations, the home institution is the HEI outside of Canada requesting Accreditation Board substantial equivalency).

Règlements pour l'octroi de crédits de transfert

Introduction

Les règlements suivants s'appliquent à l'octroi, à des étudiants, d'équivalences d'unités d'agrément (UA) (appelées ici « crédits de transfert ») pour des cours suivis dans le même établissement ou dans un autre établissement que celui où ils recevront leur diplôme.

1.0 Conditions générales

1.1 L'établissement d'attache[1] doit vérifier et prouver que tous les étudiants satisfont aux normes du Bureau d'agrément concernant le contenu et la qualité du programme d'études qui sont décrits dans les Normes et procédures d'agrément.

1.2 L'établissement d'attache doit vérifier et prouver que le niveau du cours pour lequel le crédit est accordé est égal ou supérieur au niveau du programme de génie dispensé par l'établissement d'attache.

1.3 Le Bureau d'agrément peut, à sa discrétion, exiger qu'une visite soit effectuée pour vérifier toute preuve présentée par l'établissement pour un programme donné. S'il s'agit d'une visite à l'étranger, les dépenses sont à la charge de l'établissement.

1.4 Il n'y a pas de restrictions imposées aux transferts de crédits entre des programmes agréés par le Bureau d'agrément; cependant, dans tous les cas, au moins la moitié (50 %) du programme doit être effectuée à l'établissement d'attache.

1.5 La conformité à ces règlements est exigible depuis le 1er janvier 2013.

[1] **Établissement d'attache** : Établissement d'enseignement supérieur (EES) canadien qui décerne le diplôme et qui a présenté une demande d'agrément au Bureau canadien d'agrément des programmes de génie (le Bureau d'agrément) pour un programme menant à un baccalauréat en génie qui satisfait aux exigences de formation pour l'exercice professionnel du génie. (Dans le cas des évaluations d'équivalence substantielle, l'établissement d'attache est l'EES étranger qui présente une demande d'équivalence substantielle au Bureau d'agrément).

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2.0 Granting of transfer credits

2.1 **Case-by-case granting of transfer credits for admission at the start of a program (i.e., individual courses, for individual students)**

When admitting students on a case-by-case basis, transfer credits can be granted for studies at other higher education institutions (HEI) or for non-engineering studies at the home institution. This type of admission applies to students who have either:

i) transferred from another HEI or from non-engineering studies within the home institution, or

ii) completed an undergraduate, graduate or technology program at the home institution or at another HEI.

2.2 **Systematic granting of transfer credits for studies completed at another HEI prior to admission to the home institution**

This applies to student admissions where formal agreements exist permitting students to complete studies at another HEI, including 3-year technical CEGEP (Collège d'enseignement général et professionel) programs. In such cases, the program at the home institution is designed to be a continuation of the studies taken at the other HEI, or alternatively, the program of the other HEI has been designed to facilitate the continuation of studies within the program at the home institution.

2.3 For the systematic granting of transfer credits, a formally documented validation procedure must be in place. The validation procedure could be a demonstration that the home institution monitors or periodically verifies that the content and quality of courses at the other HEI for which credits are being granted are substantially equivalent to courses offered in the program of the home institution. When credits are to be granted for engineering science or engineering design, the verification shall be consistent with article 2.4 herein.

2.3.1 For engineering programs in HEIs designed to admit students from two-year pre-university programs given in CEGEPs, for which a one year of academic upgrading (preparatory studies) exists for students who have completed 12 years of primary and secondary studies

2.0 Octroi de crédits de transfert

2.1 **Octroi, en fonction de chaque cas, de crédits de transfert pour l'admission au début d'un programme (c.-à-d. cours individuels, pour des étudiants individuels)**

Pour l'admission d'étudiants en fonction de chaque cas, des crédits de transfert peuvent être accordés pour des cours suivis dans d'autres établissements d'enseignement supérieur (EES) ou pour des études dans un autre domaine que le génie, suivies dans l'établissement d'attache. Ce type d'admission s'applique aux étudiants qui ont :

i) soit effectué un transfert d'un autre EES ou d'un programme d'un autre domaine que le génie au sein de l'établissement d'attache

ii) soit obtenu un baccalauréat ou un diplôme d'études supérieures ou un diplôme en technologie à l'établissement d'attache ou à un autre EES.

2.2 **Octroi systématique de crédits de transfert pour des études suivies dans un autre EES avant l'admission à l'établissement d'attache**

Cela s'applique aux admissions dans les cas où il existe des ententes officielles permettant aux étudiants de faire des études dans un autre EES, y compris un programme technique de trois ans dans un cégep (Collège d'enseignement général et professionnel). Dans ces cas, le programme offert par l'établissement d'attache est conçu pour permettre la poursuite des études entreprises dans l'autre EES, ou bien le programme donné dans l'autre EES est conçu pour faciliter la poursuite des études dans le cadre du programme donné par l'établissement d'attache.

2.3 Pour l'octroi systématique de crédits de transfert, une procédure de validation officiellement documentée doit être en place. La procédure de validation pourrait être une démonstration que l'établissement d'attache s'assure ou vérifie périodiquement que le contenu et la qualité des cours de l'autre EES pour lesquels des crédits sont accordés sont substantiellement équivalents aux cours offerts dans le programme d'études de l'établissement d'attache. Lorsque des crédits sont accordés pour des cours en sciences du génie ou conception en ingénierie, la vérification doit être conforme à l'article 2.4 ci-dessous.

2.3.1 Dans le cas des programmes de génie dans les EES destinés à admettre des étudiants issus des programmes préuniversitaires de deux ans donnés dans les cégeps, et pour lesquels il existe une année de mise à niveau (année préparatoire) pour les étudiants

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(outside of the CEGEP system), the following restrictions apply:

a. A validation procedure equivalent to that of Article 2.3 must be in place
b. Engineering Science and Design: 0 AU
c. Mathematics: ≤180 AU
d. Natural Sciences: ≤ 180 AU
e. Complementary Studies: ≤ 120 AU;
No credit will be given for the following subjects: engineering economics, impact of technology on society, health and safety, professional ethics, equity and law, or environmental stewardship and sustainable development.

2.3.2 For 2-year pre-university CEGEP programs for which the validation procedure in article 2.3 herein is not performed, the following restrictions apply:

a. Engineering science and engineering design: 0 AU
b. Mathematics: ≤ 112 AU
c. Natural science: ≤ 112 AU
d. Complementary studies: ≤ 112 AU;
No credit is given for the following: engineering economics, impact of technology on society, oral and written communication, health and safety, professional ethics, equity and law, or environmental stewardship and sustainable development.
e. Total (b)+(c)+(d) ≤ 225 AU

2.4 **Transfer of credits with Engineering Science and Engineering Design content**

2.4.1 If transfer credit is granted for engineering science or engineering design, the home institution must verify, for example through a formal agreement, that the expertise, competence and professional status of the faculty are substantially equivalent to those of faculty delivering accredited programs in Canada; or,

2.4.2 For international transfer credits from a program that is:
- determined to be substantially equivalent by the Accreditation Board,
- accredited by a Washington Accord signatory, or
- in a jurisdiction with which Engineers Canada has signed a mutual recognition agreement,

ayant effectué 12 années d'études primaires et secondaires (en dehors du système des cégeps), les restrictions suivantes s'appliquent :

a. Une procédure de validation équivalente à celle décrite à l'article 2.3 doit être en place
b. Sciences du génie et conception en ingénierie : 0 UA
c. Mathématiques : ≤180 UA
d. Sciences naturelles : ≤ 180 UA
e. Études complémentaires : ≤ 120 UA
Aucun crédit de transfert n'est accordé pour les matières suivantes : économie de l'ingénierie, impact de la technologie sur la société, santé et sécurité, déontologie, équité et droit, et gérance environnementale et développement durable.

2.3.2 Dans le cas des programmes pré-universitaires de deux ans donnés dans les cégeps, et pour lesquels la procédure de validation décrite à l'article 2.3 susmentionné n'est pas effectuée, les restrictions suivantes s'appliquent :

a. Sciences du génie et conception en ingénierie : 0 UA
b. Mathématiques : ≤ 112 UA
c. Sciences naturelles : ≤ 112 AU
d. Études complémentaires : ≤ 112 UA
Aucun crédit n'est accordé pour les matières suivantes : économie de l'ingénierie, impact de la technologie sur la société, communication orale et écrite, santé et sécurité, déontologie, équité et droit, et gérance environnementale et développement durable.
e. Total de (b) + (c) + (d) : ≤ 225 AU

2.4 Transfert de crédits – Science du génie et Conception en ingénierie

2.4.1 Si un crédit de transfert est accordé pour des cours en sciences du génie ou en conception en ingénierie, l'établissement d'attache doit vérifier, par exemple par le biais d'une entente officielle, que l'expertise, la compétence et le statut professionnel du corps professoral sont substantiellement équivalents à ceux des enseignants donnant les programmes d'études agréés au Canada; Ou

2.4.2 Dans le cas de crédits de transfert internationaux d'un programme qui est :
- Jugé substantiellement équivalent par le Bureau d'agrément
- Agréé par un signataire de l'Accord de Washington, ou
- Donné dans une zone de compétence avec laquelle Ingénieurs Canada a conclu une entente de reconnaissance mutuelle,

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engineering science and engineering design curriculum content can be transferred provided the courses have been taught by engineers who are permitted to practice engineering according to the laws of the jurisdiction where the transfer credits are acquired. Programs that are substantially equivalent, signatories of the Washington Accord, and Engineers Canada mutual recognition agreements are listed in the *Accreditation Criteria and Procedures*;
or,

2.4.3 For transfer credits not covered under 2.4.1 or 2.4.2 above, at least 600 AU of engineering science and engineering design (combined) and at least 225 AU of engineering design must be completed at and credit granted by the home institution.

2.4.4 In all cases the significant design experience must be completed at or under the control[2] of the home institution and must be under the professional responsibility of faculty licensed to practice engineering in Canada.

The attached charts are intended to illustrate the application of these regulations in most circumstances.

Updated: September 2019

[2] The significant design experience can be acquired outside Canada so long as it is "**under the control of**" the home institution. This means that there is co-supervision of the significant design experience by a professor from the home institution, the evaluation of the significant design experience is done according to the home institution's guidelines, and upon return to the home institution the student provides a report and makes an oral presentation about the experience in the foreign jurisdiction. Based on these or similar conditions, and subject to confirmation that the co-supervision is done by an engineer who is licensed to practice engineering in Canada and that the conditions have been implemented, the Accreditation Board would consider the significant design experience to be under the control of the home institution.

le contenu du programme relié aux sciences du génie et à la conception en ingénierie peut être transféré, pourvu que les cours aient été donnés par des ingénieurs autorisés à exercer le génie conformément aux lois de la zone de compétence où les crédits ont été obtenus. Les programmes qui sont substantiellement équivalents, reconnus par les signataires de l'Accord de Washington, et visés par des ententes de reconnaissance mutuelle d'Ingénieurs Canada, sont énumérés dans les *Normes et procédures d'agrément* ;
Ou

2.4.3 Dans le cas des crédits de transfert non visés aux articles 2.4.1 ou 2.4.2 susmentionnés, au moins 600 UA en sciences du génie et conception en ingénierie (combinées) et au moins 225 UA en conception en ingénierie doivent être obtenues à l'établissement d'attache et créditées par celui-ci.

2.4.4 Dans tous les cas, la vaste expérience en conception doit être acquise à l'établissement d'attache ou sous le contrôle[2] de cet établissement, et sous la responsabilité professionnelle d'un professeur titulaire d'un permis d'exercice du génie au Canada.

Les tableaux suivants visent à illustrer l'application de ces règlements dans la plupart des circonstances.

Mise à jour : septembre 2019

[2] La vaste expérience en conception peut être acquise hors du Canada pourvu que ce soit « **sous le contrôle** » de l'établissement d'attache. Cela signifie qu'il y a co-supervision de l'expérience en conception par un professeur de l'établissement d'attache, que l'évaluation de l'expérience en conception est effectuée conformément aux lignes directrices de l'établissement d'attache, et que, une fois de retour à son établissement d'attache, l'étudiant fournisse un rapport et donne une présentation orale sur l'expérience acquise à l'étranger. Sur la base de ces conditions ou de conditions semblables, et sous réserve de la confirmation que la co-supervision est effectuée par un ingénieur titulaire d'un permis d'exercice du génie au Canada et que les conditions ont été appliquées, le Bureau d'agrément considérera que la vaste expérience en conception est sous le contrôle de l'établissement d'attache.

Appendix 1: Charts Annexe 1 : Tableaux

Credits transferred based on domestic studies

ACCREDITATION ISSUE	From HEI **with** validation arrangements	From HEI **without** validation arrangement	From 2-year CEGEP programs **with** validation arrangements	From 2-year CEGEP programs **without** validation arrangements	From "Feeder Institutions" *(satellite campuses, 3-year technical CEGEP programs)*
Academic level	• Must meet Accreditation Board criteria • Evaluated based on documentation provided by home institution		• See the general requirements above, and in particular item 1.1 as the object here is to ensure that all students meet the requirements		• Formally documented validation procedure must be in place for all credits transferred
Engineering science and engineering design curriculum content	• Evaluated based on documentation provided by home institution	• ≥ 225 AU of engineering design and ≥ 600 AU of engineering science plus engineering design must be completed at the home institution • Evaluated based on documentation provided by home institution	• No credits in engineering sciences and engineering design may be transferred		• Formally documented validation procedures must be in place for all credits transferred. See article 2.3 herein.
Significant design experience	• Evaluated based on documentation provided by home institution. • In all cases, the significant design experience must be completed at or under the control[2] of the home institution and must be under the professional responsibility of faculty licensed to practice engineering in Canada.				
Limits to granting of credits	• At least 50% of the program must be successfully completed at the home institution (Canadian HEI)	• At least 50% of the program must be successfully completed at the home institution (Canadian HEI)	a) A validation procedure equivalent to that of Article 2.3 must be in place b) Engineering Science and Design: 0 AU c) Mathematics: ≤180 AU d) Natural Sciences: ≤ 180 AU e) Complementary Studies: ≤ 120 AU; No credit will be given for the following subjects: engineering economics, impact of technology on society, health and safety, professional ethics, equity and law, or environmental stewardship and sustainable development.	a) Engineering science and engineering design: 0 AU b) Mathematics: ≤ 112 AU c) Natural science: ≤ 112 AU d) Complementary studies: ≤ 112 AU; No credit is given for the following: engineering economics, impact of technology on society, oral and written communication, health and safety, professional ethics, equity and law, or environmental stewardship and sustainable development. e) Total (b)+(c)+(d) ≤ 225 AU	• At least 50% of the program must be successfully completed at the home institution (Canadian HEI)

Appendix 1: Charts Annexe 1 : Tableaux

Crédits transférés en fonction d'études effectuées au Canada

QUESTION D'AGRÉMENT	EES **ayant** des dispositions de validation	EES **n'ayant pas** de dispositions de validation	Programmes de cégep de 2 ans **ayant** des dispositions de validation	Programmes de cégep de 2 ans **n'ayant pas** de dispositions de validation	« Établissements affiliés » *(Campus satellites, programmes techniques de 3 ans donnés dans des cégeps)*
Niveau d'enseignement	• Doit être conforme aux normes du Bureau d'agrément • Évalué en fonction de la documentation fournie par l'établissement d'attache (EES Canadien)		• Voir les exigences générales ci-dessus et, en particulier, l'article 1.1, car l'objet ici est de s'assurer que tous les étudiants satisfont aux mêmes exigences		• Une procédure de validation officiellement documentée doit être en place pour tous les crédits transférés.
Cours de sciences du génie et de conception en ingénierie faisant partie du programme d'études	• Évalué en fonction de la documentation fournie par l'établissement d'attache	• ≥ 225 UA en conception en ingénierie et ≥ 600 UA en sciences du génie, plus conception en ingénierie, doivent être obtenues à l'établissement d'attache • Évalué en fonction de la documentation fournie par l'établissement d'attache	• Aucun crédit en sciences du génie et en conception en ingénierie ne peut être transféré.		• Une procédure de validation officiellement documentée doit être en place pour tous les crédits transférés. Voir l'article 2.3 ci-dessus.
Vaste expérience de la conception en ingénierie	• Évalué en fonction de la documentation fournie par l'établissement d'attache. • Dans tous les cas, la vaste expérience en conception doit être obtenue à l'établissement d'attache ou sous le contrôle[2] de l'établissement d'attache, et sous la responsabilité d'un professeur titulaire d'un permis d'exercice du génie au Canada.				
Limites à l'octroi de crédits	• Au moins 50% du programme doit être suivi avec succès à l'établissement d'attache	• Au moins 50% du programme doit être suivi avec succès à l'établissement d'attache	a) Une procédure de validation équivalente à celle décrite à l'article 2.3 doit être en place b) Sciences du génie et conception en ingénierie : 0 UA c) Mathématiques : ≤180 UA d) Sciences naturelles : ≤ 180UA e) Études complémentaires : ≤ 120 UA Aucun crédit de transfert n'est accordé pour les matières suivantes : économie de l'ingénierie, impact de la technologie sur la société, santé et sécurité, déontologie, équité et droit, et gérance environnementale et développement durable.	a) Sciences du génie et conception en ingénierie : 0 UA b) Mathématiques : ≤ 112 UA c) Sciences naturelles : ≤ 112 UA d) Études complémentaires : ≤ 112 UA. Aucun crédit n'est accordé pour les matières suivantes : économie de l'ingénierie, impact de la technologie sur la société, communication orale et écrite, santé et sécurité, déontologie, équité et droit, et gérance environnementale et développement durable. e) Total de (b)+(c)+(d) ≤ 225 UA	• Au moins 50% du programme doit être suivi avec succès à l'établissement d'attache

Appendix 1: Charts Annexe 1 : Tableaux

Credits transferred based on international studies

ACCREDITATION ISSUE	Formal structure or agreement exists			No formal structure or agreement
	"Satellite Campus" of domestic HEI	*Washington Accord* or Mutual Recognition Agreement	International Exchange agreements negotiated by the HEI	
Academic level	• Must meet Accreditation Board criteria • Evaluated based on documentation provided by home institution	• Acceptable	• Verification required	• Verification required
Engineering science and engineering design curriculum content	• Must meet Accreditation Board criteria • Evaluated based on documentation provided by home institution	• Acceptable, provided the courses have been taught by engineers who are permitted to practice engineering according to the laws of the jurisdiction where the transfer credits are acquired.	• Verification required; the courses must have been taught by engineers who are permitted to practice engineering according to the laws of the jurisdiction where the transfer credits are acquired	• Verification required • ≥225 AU in engineering design must be completed at the home institution • ≥600 AU in engineering science and engineering design must be completed at the home institution
Significant design experience	• Evaluated based on documentation provided by home institution (Canadian HEI). • Must be completed under the control[2] of the Home Institution, see article 2.4 herein. • In all cases, the significant design experience must be completed at or under the control[2] of the home institution and must be under the professional responsibility of faculty licensed to practice engineering in Canada.			
Limits to granting of credits	• At least 50% of the program must be successfully completed at the home institution (Canadian HEI)			

Appendix 1: Charts Annexe 1 : Tableaux

Crédits transférés en fonction d'études effectuées à l'étranger

QUESTION D'AGRÉMENT	Existence d'une structure ou d'ententes officielles			Absence de structure ou d'ententes officielles
	« Campus satellite » d'un EES canadien	*Accord de Washington* ou Entente de reconnaissance mutuelle	Ententes d'échanges internationaux négociées par l'EES	
Niveau d'enseignement	• Doit être conforme aux normes du Bureau d'agrément • Évalué en fonction de la documentation fournie par l'établissement d'attache (EES canadien)	• Acceptable	• Vérification nécessaire	• Vérification nécessaire
Cours de sciences du génie et de conception en ingénierie faisant partie du programme d'études	• Doit être conforme aux normes du Bureau d'agrément • Évalué en fonction de la documentation fournie par l'établissement d'attache (EES canadien)	• Acceptable, pourvu que les cours aient été donnés par des ingénieurs autorisés à exercer le génie conformément aux lois de la zone de compétence où les crédits de transfert ont été obtenus.	• Vérification nécessaire ; les cours doivent avoir été donnés par des ingénieurs autorisés à exercer le génie conformément aux lois de la zone de compétence où les crédits de transfert ont été obtenus.	• Vérification nécessaire • ≥225 UA en conception en ingénierie doivent être obtenues à l'établissement d'attache. • ≥600 UA en sciences du génie et conception en ingénierie doivent être obtenues à l'établissement d'attache.
Vaste expérience de la conception en ingénierie	• Évaluée en fonction de la documentation fournie par l'établissement d'attache (EES canadien). • Doit être obtenue à l'établissement d'attache ou sous le contrôle[2] de l'établissement d'attache ; voir l'article 2.4. • Dans tous les cas, la vaste expérience en conception doit être obtenue à l'établissement d'attache ou sous le contrôle[2] de l'établissement d'attache, et sous la responsabilité d'un professeur titulaire d'un permis d'exercice du génie au Canada			
Limites à l'octroi de crédits	• Au moins 50% du programme doit être suivi avec succès à l'établissement d'attache (EES canadien)			

Appendix 2 Annexe 2

Interpretive statement on natural sciences

(previously entitled *Accreditation Board Statement on the Evaluation of Basic Science Accreditation Units*)

Please note: A terminology change in the amended criteria in May 2008 has resulted in references to Basic Science being changed to Natural Science.

In 2002, the Accreditation Board criteria underwent several changes. One of the most significant changes was the decrease in the required natural science accreditation units (AU) from 225 to 195.

The inclusion of natural sciences in any engineering program is important for a number of reasons. Foremost, is the requirement for engineers to understand the physical world in which they work and live. Additionally, in order for engineers to better understand and communicate with colleagues who are employed in the scientific disciplines, it is vital that they have a solid background in the scientific method and scientific principles. Finally, the natural sciences form the foundation upon which much of engineering science and design is built.

There are fundamental differences between natural science and engineering science. The natural sciences include the exploration of the physical and chemical interactions of the natural world and the systematic observation and understanding of physical and natural phenomena through analytical and/or experimental techniques. The engineering sciences primarily involve the creative application of the principles developed through the natural sciences in the solution of engineering problems. As such, it is vital that all accredited engineering programs have a clearly identifiable natural science component. This can be accomplished in a number of ways and does not necessarily mean that all natural science AU need be in separate and distinct courses. Rather, the AU counted towards natural science must be readily and easily identifiable relative to the engineering science component. It is incumbent upon each engineering program to clearly identify the natural science component in their curricula.

September 26, 2005
Updated: September 2008

Énoncé d'interprétation sur les sciences naturelles

(auparavant intitulé *Énoncé de principe du Bureau canadien d'agrément des programmes d'ingénierie sur l'évaluation des unités d'agrément allouées aux sciences fondamentales*)

Remarque : Dans le cadre de la révision des normes d'agrément en mai 2008, les « sciences fondamentales » ont été renommées « sciences naturelles ».

En 2002, les normes du Bureau d'agrément ont fait l'objet de plusieurs modifications. L'une des plus importantes a été la diminution du nombre d'unités d'agrément (UA) requis pour les sciences naturelles, qui est passé de 225 à 195.

L'inclusion d'éléments de sciences naturelles dans tout programme de génie est importante pour un certain nombre de raisons. Il y a tout d'abord la nécessité pour les ingénieurs de comprendre le monde physique dans lequel ils vivent et travaillent. De plus, pour qu'ils puissent mieux comprendre leurs collègues des domaines scientifiques et mieux communiquer avec eux, les ingénieurs doivent avoir de solides connaissances des principes et des méthodes scientifiques. Enfin, les sciences naturelles constituent les fondements d'une grande partie des sciences du génie et de la conception en ingénierie.

Il existe des différences de base entre les sciences naturelles et les sciences du génie. Les sciences naturelles comprennent l'exploration des interactions physiques et chimiques du monde naturel et l'observation et la compréhension systématiques des phénomènes au moyen de méthodes analytiques et/ou expérimentales. Les sciences du génie, elles, mettent essentiellement en jeu l'application créative des principes élaborés à partir des sciences naturelles, et ce, pour résoudre les problèmes d'ingénierie. Il est donc crucial que tous les programmes de génie agréés aient une composante en sciences naturelles qui soit clairement identifiable. Cela peut se faire de plusieurs façons et ne veut pas forcément dire que toutes les UA des sciences naturelles doivent faire l'objet de cours distincts. Il suffit que les UA allouées aux sciences naturelles soient aisément identifiables dans la composante en sciences du génie. Il incombe à chacun des programmes de génie d'identifier clairement la composante en sciences naturelles dans leurs programmes d'études.

26 septembre 2005
Mise à jour : septembre 2008

Appendix 3 Annexe 3

Interpretive statement on licensure expectations and requirements

Accreditation Board criterion 3.5.3 states:

"The dean of engineering (or equivalent officer) and the head of an engineering program (or equivalent officer with overall responsibility for each engineering program) are expected to provide effective leadership in engineering education and to have high standing in the engineering community. They are expected to be engineers licensed to practice in Canada.

To evaluate this criterion, the Accreditation Board will rely on the Interpretive statement on licensure expectations and requirements, which is attached as an appendix to this document."

Accreditation Board criterion 3.5.5 states:

"Faculty delivering curriculum content that is engineering science and/or engineering design are expected to be licensed to practise engineering in Canada.

To evaluate this criterion, the Accreditation Board will rely on the Interpretive statement on licensure expectations and requirements, which is attached as an appendix to this document."

In the determination of whether the professional engineering licensure situation is compliant with the criteria, the following are the expectations of the Accreditation Board:

1. All forms of engineering licensure in Canada are considered acceptable (P.Eng., temporary engineering license, provisional engineering license, etc.). **Licensure in other countries** (i.e., P.E. in the U.S., CEng in the U.K., etc.) **is not considered to be equivalent to licensure in Canada**.

2. In jurisdictions where teaching engineering at a university is legally defined as the practice of engineering, all faculty members shall be licensed in the jurisdiction of the institution offering the engineering program, according to the timing and curriculum content considerations described below.

Énoncé d'interprétation sur les attentes et les exigences en matière de permis d'exercice

La norme 3.5.3 du Bureau d'agrément stipule :

« Le doyen de la faculté de génie (ou son équivalent) et le directeur du département (ou l'administrateur assumant la responsabilité globale de chaque programme de génie) doivent assurer un leadership efficace de la formation en génie et jouir de la plus haute estime au sein de la profession d'ingénieur. On s'attend à ce qu'ils soient titulaires d'un permis d'exercice du génie au Canada.

Pour évaluer la conformité à cette norme, le Bureau d'agrément se fondera sur l'Énoncé d'interprétation sur les attentes et les exigences en matière de permis d'exercice, qui est joint à ce document à titre d'annexe. »

La norme 3.5.5 du Bureau d'agrément stipule :

« Les professeurs qui donnent des cours portant essentiellement sur les sciences du génie et la conception en ingénierie devraient être titulaires d'un permis d'exercice du génie au Canada.

Pour évaluer la conformité à cette norme, le Bureau d'agrément se fondera sur l'Énoncé d'interprétation sur les attentes et les exigences en matière de permis d'exercice, qui est joint à ce document à titre d'annexe. »

Voici les attentes sur lesquelles se fonde le Bureau d'agrément pour déterminer si la situation d'un établissement en ce qui concerne le droit d'exercice du génie du corps professoral est conforme aux normes :

1. Toutes les formes de permis d'exercice qui sont octroyés au Canada sont acceptables (ing., P.Eng., permis temporaire, permis provisoire, etc.). **Les permis d'exercice octroyés dans un autre pays** (c.-à-d. P.E. aux États-Unis, CEng au Royaume-Uni, etc.) **ne sont pas considérés comme étant équivalents aux permis octroyés au Canada.**

2. Dans les provinces et les territoires où l'enseignement du génie au niveau universitaire est légalement défini comme étant le fait d'exercer le génie, tous les membres du corps professoral doivent être titulaires d'un permis d'exercice délivré dans la province ou le territoire où se trouve l'établissement offrant le programme de génie, conformément aux considérations s'appliquant à la durée de l'expérience d'enseignement et au contenu du programme de génie, tel que décrit ci-après.

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3. Examination of engineering licensure shall be restricted to that of faculty members and other instructors (adjuncts, sessionals, etc.) teaching courses that include engineering science and/or engineering design curriculum content.

4. a. Faculty members who fall under criteria 3.4.4.1 and 3.4.4.4, and are within five years of their initial appointment to a faculty position at an academic institution in Canada are expected to:

   - Initiate an application for professional engineering licensure, or engineer-in-training/ing. jr. status, upon starting their faculty position.

   - Demonstrate continuing progress in meeting any conditions associated with achieving professional licensure (completing assessed examinations, obtaining experience, etc.).

   b. Faculty members who meet the conditions specified in 4(a) would be considered to be compliant with criterion 3.5.5 for the teaching of engineering science, but would not be considered to be compliant with criterion 3.5.5 for the teaching of engineering design.

5. Faculty members who fall under criteria 3.4.4.1 and 3.4.4.4 and have spent five or more years in a faculty position at an academic institution in Canada shall have, and maintain, licensure as defined in point 1.

6. Faculty members who are within five years of their first-time appointment in a Canadian engineering school (and other instructors, such as adjuncts and sessionals, in the registration process) and are actively pursuing licensure can be counted for courses involving engineering science to satisfy the 600 AU of engineering science and engineering design minimum.

7. For team-taught courses, and in the case of multiple sections of a particular course, a "minimum path" approach is taken toward establishing the total AU actually delivered by licensed faculty (as specified in point 1, only, above). For duplicate sections all instructors must meet the licensure requirements in order for the AU to be counted. If the course is team-taught then it must be clear that the engineering science and engineering design components are delivered by faculty holding professional engineering licensure. In some cases, for team-taught courses, a fraction of the total AU could be claimed.

3. La vérification du droit d'exercice des professeurs et des autres enseignants (professeurs auxiliaires, chargés de cours, etc.) se limitera à ceux qui donnent des cours portant sur les sciences du génie et/ou la conception en ingénierie.

4. a. Les membres du corps professoral auxquels s'appliquent les normes 3.4.4.1 et 3.4.4.4, et qui enseignent depuis moins de cinq ans dans un établissement universitaire au Canada doivent :

   - Faire une demande de permis d'exercice ou de statut d'ingénieur stagiaire, dès leur entrée en poste.

   - Démontrer qu'ils font des efforts continus pour satisfaire aux conditions liées à l'obtention du permis d'exercice (réussir les examens prescrits, acquérir de l'expérience, etc.).

   b. Les membres du corps professoral qui satisfont aux conditions spécifiées en 4(a) seront réputés satisfaire à la norme 3.5.5 pour ce qui est de l'enseignement des sciences du génie, mais pas pour ce qui est de l'enseignement de la conception en ingénierie.

5. Les membres du corps professoral auxquels s'appliquent les normes 3.4.4.1 et 3.4.4.4, et qui enseignent depuis au moins cinq ans dans un établissement universitaire au Canada doivent détenir un permis d'exercice, tel qu'il est défini au point 1, et le conserver.

6. Les membres du corps professoral qui enseignent depuis moins de cinq ans dans une école d'ingénierie canadienne (et les autres enseignants, comme les professeurs auxiliaires et les chargés de cours, engagés dans le processus d'inscription) et qui travaillent activement à l'obtention de leur permis d'exercice peuvent être inclus dans le calcul visant les cours de sciences du génie, pour satisfaire au minimum de 600 unités d'agrément combinant des cours de sciences du génie et de conception en ingénierie.

7. Pour ce qui est des cours enseignés en équipe, et dans le cas de multiples parties d'un cours, le nombre total d'unités d'agrément dispensées par des enseignants titulaires du permis est établi selon une approche de « cheminement minimum » (tel que spécifié ci-dessus au point 1, seulement). Dans le cas de parties de cours dupliquées, tous les enseignants doivent satisfaire aux exigences relatives au permis d'exercice pour que les unités d'agrément soient incluses dans le calcul. Si un cours est donné par une équipe, il doit être clair que les éléments de sciences du génie et de conception en ingénierie sont enseignés par des membres du corps professoral titulaires du permis d'exercice. Dans certains cas, une fraction du total d'unités d'agrément pourrait être revendiquée pour les cours donnés par une équipe d'enseignants.

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8. Engineering science, engineering design, natural science, mathematics, and complementary studies curriculum content should be readily and easily identifiable through learning outcomes, learning activities and assessments attributable to each category in each course where they appear.

Effective June 2007
Updated October 2021

8. Les contenus en sciences du génie, en conception en ingénierie, en sciences naturelles, en mathématiques et en études complémentaires devraient être immédiatement et facilement identifiables à l'aide des résultats d'apprentissage, des activités d'apprentissage et des évaluations attribuables à chacune des catégories dans chaque cours dont ils font partie.

En vigueur en juin 2007
Mise à jour : octobre 2021

Appendix 4 Annexe 4

Interpretive statement on curriculum content for options and dual-discipline programs

The Accreditation Board develops statements of interpretation to clarify the intent underlying certain key expectations which generate frequent inquiries and are not otherwise covered by the Accreditation Board accreditation criteria. The following statement of interpretation addresses the issue of curriculum content for options and dual-discipline programs.

In the interest of allowing for flexibility, the Accreditation Board has avoided a strict definition of the requirements for both program options and dual-discipline engineering degrees.

Typically, however, the Accreditation Board seeks the equivalent of one semester of subject-specific content in courses (engineering science and/or engineering design) as the basis for an option. Similarly, the Accreditation Board seeks a rough balance in subject-specific content between the two disciplines named in a dual-discipline program title, and the program must meet the Accreditation Board accreditation requirements for each discipline named.

For the purpose of accreditation, the preceding statement of interpretation should be respected in the development and maintenance of such offerings.

Updated: September 2008

Énoncé d'interprétation : Matière des cours dans les options d'un programme et dans les programmes bidisciplinaires

Le Bureau d'agrément présente des notes d'interprétation afin d'expliciter les motifs sous-tendant quelques attentes majeures qui suscitent de nombreuses demandes de renseignements et qui ne sont pas définies explicitement dans les normes d'agrément du Bureau d'agrément. Cette note porte sur la matière des cours dans les options d'un programme et dans les programmes bidisciplinaires.

Afin de laisser place à la flexibilité, le Bureau d'agrément a évité de définir trop étroitement les exigences spécifiques aux options d'un programme et aux programmes bidisciplinaires.

Cependant le Bureau d'agrément s'attend généralement à retrouver dans les cours d'une option l'équivalent d'un semestre de sujets qui lui sont propres (sciences du génie et/ou conception en ingénierie) et qui constituent le fondement de l'option. De la même façon, le Bureau d'agrément s'attend à un équilibre quantitatif approximatif dans les matières propres à chacune des disciplines mentionnées dans le titre d'un programme bidisciplinaire. De plus, le programme doit satisfaire toutes les normes d'agrément du Bureau d'agrément pour chaque discipline identifiée dans le titre.

Pour fins d'agrément, le développement et le maintien de ces programmes doivent se conformer à cette note d'interprétation.

Mise à jour : septembre 2008

Appendix 5 Annexe 5

Use of the K-Factor

Introduction

The Canadian Engineering Accreditation Board suggests the use of something called a K-Factor for courses that do not follow the traditional lecture/lab format. This document explains the process for calculation of the K-Factor and gives some examples in which the use of the K-Factor (or a similar process) might be used.

Note: the examples provided below are for illustrative purposes only. The final determination of the validity of the use or application of this formula rests with the Accreditation Board.

Definitions

Accreditation Units (AU) are defined as follows (hourly basis) for an activity which is granted academic credit and for which the associated number of hours corresponds to the actual contact time of that activity: one hour of lecture (corresponding to 50 minutes of activity) = 1 AU and one hour of laboratory or tutorial work = 0.5 AU. This definition is applicable to most lectures and periods of laboratory or tutorial work. Classes of other than the nominal 50-minute duration are treated proportionally.

For an activity for which contact hours cannot be used to properly describe the extent of the work involved, such as significant design or research projects or similar work officially recognized by the institution as a degree requirement, an equivalent measure in Accreditation Units must be used by the institution to be consistent with the above definition. One method for determining this equivalence, when a unit of academic credit is defined by the institution to measure curriculum content, is a calculation on a proportionality basis. A factor K is defined as follows:

$$K = \frac{\Sigma \text{ AU for all common and compulsory courses (hourly basis)}}{\Sigma \text{ units defined by the institution for the same courses}}$$

Then, for each course not accounted for on an hourly basis, the number of Accreditation Units is obtained by multiplying the units defined by the institution for that course by K.

Utilisation du facteur K

Introduction

Le Bureau canadien d'agrément des programmes de génie suggère l'utilisation du concept appelé « facteur K » pour calculer le nombre d'unités d'agrément (UA) des cours qui ne suivent pas le format traditionnel « cours magistral/ période de laboratoire ». Ce document explique le processus à suivre pour le calcul du facteur K et donne quelques exemples d'utilisation du facteur K (ou d'un processus semblable).

Note : les exemples présentés ci-dessous le sont à des fins d'illustration uniquement. La détermination finale de la validité de l'utilisation ou de l'application de cette formule relève du Bureau d'agrément.

Définitions

Pour toute activité menant à des crédits universitaires et pour laquelle le nombre d'heures connexes correspond au temps de contact pour cette activité, les unités d'agrément (UA) sont définies comme suit (sur une base horaire) : une heure d'enseignement (correspondant à 50 minutes d'activité) = 1 UA, une heure de laboratoire ou de travail dirigé = 0,5 UA. Cette définition s'applique à la plupart des cours magistraux et des périodes de laboratoire ou de travail dirigé. Les cours d'une durée autre que 50 minutes sont considérés au prorata de cette durée.

Dans le cas d'une activité pour laquelle le concept d'heures de contact ne permet pas de décrire correctement l'ampleur du travail, comme d'importants projets de conception ou de recherche, ou des travaux comparables officiellement reconnus comme étant requis pour l'obtention du diplôme, l'établissement d'enseignement doit utiliser une mesure équivalente en unités d'agrément qui soit compatible avec la définition présentée ci-dessus. Une des façons de déterminer cette équivalence, quand une unité de crédit universitaire est définie par l'établissement pour mesurer le contenu du programme d'études, consiste à effectuer un calcul basé sur la proportionnalité. Un facteur K est défini comme suit :

$$K = \frac{\Sigma \text{ UA pour tous les cours obligatoires et du programme (base horaire)}}{\Sigma \text{ unités définies par l'établissement pour les mêmes cours}}$$

Puis, pour chaque cours dont le contenu n'est pas mesurable sur une base horaire, l'on obtient le nombre d'unités d'agrément en multipliant par K les unités définies par l'établissement pour cette activité.

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Sample calculation

For example, the institutional unit of course credit at Canada University is the credit hour and the Civil Engineering program includes 46 credit hours of core compulsory courses and 51 credit hours of program compulsory courses.
Based on the published lecture and laboratory hours per week and an average of 12.2 weeks per academic term, the accreditation units (AUs) assigned for core compulsory courses were 702 AU and for program compulsory courses 805 AU. The K-Factor calculation is thus:

$$K = \frac{\Sigma\ 702 + 805}{\Sigma\ 46 + 51} = \frac{1507}{97} = 15.5$$

Examples of the use of the K-Factor

Note: these examples are for illustrative purposes only. The final determination of the validity of the use or application of this formula rests with the Accreditation Board.

Design project credit

Canada University has a final year group design project which extends over two terms and involves 1 hour of lecture in the first term only. The remainder of the course includes informal group meetings with faculty members and unsupervised project work. Student groups must produce and present a final report to a panel of faculty and industry representatives to obtain a grade for the course. This course cannot be fairly represented based on either lecture or other contact hours. The university assigns 6 university credit hours to the course based on the recommendation of the Faculty of Engineering. Using the K-Factor the number of AU claimed are 6 × 15.5 = 93 AU in the “engineering design” category.

Coop / internship credit

Canada University has an internship program for which students may register for between two and four four-month work terms. Students must write a report on each work term which is reviewed by their work-term supervisor and a faculty member. This course cannot be fairly represented based on either lecture or other contact hours. The university assigns 2 university credit hours to

Exemple de calcul

Par exemple, à l’université canadienne, l’unité de crédit définie par l’établissement est l’heure-crédit, et le programme de génie civil comprend 46 heures-crédits de cours obligatoires du tronc commun et 51 heures-crédits de cours obligatoires du programme d’études. Sur la base du nombre publié d’heures de cours magistraux et de périodes de laboratoire par semaine et d’une moyenne de 12,2 semaines par session universitaire, le nombre d’unités d’agrément (UA) attribuées aux cours obligatoires du tronc commun était de 702 UA et le nombre d’UA attribuées aux cours obligatoires du programme d’études était de 805 UA. Le calcul du facteur K est donc le suivant :

$$K = \frac{\Sigma\ 702 + 805}{\Sigma\ 46 + 51} = \frac{1507}{97} = 15,5$$

Exemples d’utilisation du facteur K

Note : Ces exemples ne sont que des illustrations. La détermination finale de la validité de l’utilisation ou de l’application de cette formule relève du Bureau d’agrément.

Crédit pour projet de conception

L’université canadienne prévoit un projet de conception réalisé en équipe – pendant la dernière année du programme – qui s’étend sur deux sessions et comprend 1 heure de cours magistral au cours de la première session seulement. Le reste du cours est constitué de réunions de groupe informelles avec des membres du corps professoral et du travail non supervisé sur le projet. Pour obtenir une note pour ce cours, les équipes d’étudiants doivent produire et présenter un rapport final à un panel constitué d’enseignants et de représentants de l’industrie. Ce cours ne peut pas être représenté équitablement sur la base d’heures de cours magistraux ou d’heures de contact. À la recommandation de la faculté de génie, l’université attribue à ce cours 6 heures-crédits. En utilisant le facteur K, le nombre d’UA revendiquées est : 6 × 15,5 = 93 UA dans la catégorie « conception en ingénierie ».

Crédit pour stage / programme coop

L’université canadienne offre un programme de stages dans le cadre duquel les étudiants peuvent s’inscrire à des stages allant de deux à quatre périodes de quatre mois. Pour chaque période de stage, les étudiants doivent rédiger un rapport qui est évalué par leur superviseur de stage et par un membre du corps professoral. Ce cours ne peut pas être représenté équitablement sur la base

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each work term based on the recommendation of the Faculty of Engineering. Using the K-Factor the number of AUs claimed are 2 × 15.5 = 31 AU per work term. Because Canada University cannot quantify or guarantee the exact content for such work terms, they chose to claim 31 AU (one term) to 124 AU (four terms). Substantive evidence would be required for this claim (reviewed and supervised by a P.Eng./ing.).

E-Learning credit

Canada University has an on-line course in engineering economics for which students may register at any time after completing one-year of general engineering. Students must complete a series of on-line self assessment tests and can participate in computer-mediated group exercises. This course cannot be fairly represented based on either lecture or other contact hours. The university assigns 3 university credit hours to the course based on the recommendation of the Faculty of Engineering. Using the K-Factor the number of AU claimed are 3 × 15.5 = 46 AU (no decimals should be used in the reporting of AU) in the "complementary studies" category.

Field camp credit

Canada University has a two-week field camp where students learn a variety of field mapping, instrumentation and data collection techniques under faculty supervision. The students work seven hours a day for 10 days excluding travel time and meal breaks. Daily design assignments using field data are completed in the evenings and graded by faculty. Students must also design their group data collection exercises to solve a specified problem for the final 5 days of the course. This course cannot be fairly represented based on either lecture or other contact hours.

The university assigns 3 university credit hours to the course based on the recommendation of the Faculty of Engineering. Using the K-Factor the number of AU claimed are 3 × 15.5 = 46 AU in the "engineering science and engineering design" categories.

d'heures de cours magistraux ou d'heures de contact. À la recommandation de la faculté de génie, l'université attribue à chaque période de stage 2 heures-crédits. En utilisant le facteur K, le nombre d'UA revendiquées est : 2 × 15,5 = 31 UA par période de stage. Étant donné qu'elle ne peut quantifier ni garantir le contenu exact de ces périodes de stage, l'université canadienne a choisi de réclamer de 31 UA (une période de stage) à 124 UA (quatre périodes de stage). Cette revendication devrait s'appuyer sur des preuves concrètes (examinées et supervisées par un ingénieur titulaire d'un permis d'exercice).

Crédit pour apprentissage en ligne

L'université canadienne offre un cours en ligne d'économie de l'ingénierie auquel les étudiants peuvent s'inscrire en tout temps après avoir terminé une année de cours généraux en génie. Les étudiants doivent exécuter une série de tests d'évaluation en ligne et peuvent participer à des exercices de groupe assistés par ordinateur. Ce cours ne peut pas être représenté équitablement sur la base d'heures de cours magistraux ou d'heures de contact. À la recommandation de la faculté de génie, l'université attribue à ce cours 3 heures-crédits. En utilisant le facteur K, le nombre d'UA revendiquées est 3 × 15,5 = 46 UA (aucune décimale ne doit être utilisée dans la déclaration des UA) dans la catégorie « études complémentaires ».

Crédit pour « camp de terrain »

L'université canadienne offre un « camp de terrain » de deux semaines où les étudiants apprennent une variété de techniques de levés, d'instrumentation et de collecte de données sous la supervision de professeurs. Les étudiants travaillent sept heures par jour pendant dix jours, à l'exclusion du temps de déplacement et des pauses repas. Chaque soir, les étudiants doivent effectuer des travaux de conception en utilisant les données recueillies sur le terrain, travaux qui sont notés par les professeurs. Les étudiants doivent aussi concevoir leurs exercices de collecte de données afin de résoudre un problème spécifié au cours des cinq derniers jours du cours. Ce cours ne peut pas être représenté équitablement sur la base d'heures de cours magistraux ou d'heures de contact.

À la recommandation de la faculté de génie, l'université attribue à ce cours 3 heures-crédits. En utilisant le facteur K, le nombre d'UA revendiquées est : 3 × 15,5 = 46 UA dans les catégories « sciences du génie et conception en ingénierie ».

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Problem-based learning credit

Canada University has an entire term where students are required to solve specific problems that require skills in mathematics, natural science and engineering science. The project groups may use a group of faculty as resources from which they can request help as and when required. The students are expected to work 8-12 hours a day 5 days a week throughout the term. Students are graded by faculty based on their application of skills to the assigned problems. This term of study cannot be fairly represented based on either lecture or other contact hours. The university assigns 16 university credit hours to the PBL-term based on the recommendation of the Faculty of Engineering. Using the K-Factor the number of AU claimed are 16 × 15.5 = 248 AU in the "mathematics, natural science
and engineering science" categories.

Crédit pour apprentissage basé sur la résolution de problèmes

L'université canadienne prévoit une session entière où les étudiants doivent résoudre des problèmes précis exigeant des connaissances en mathématiques, en sciences naturelles et en sciences du génie. Les équipes de projet peuvent s'adresser à un groupe d'enseignants pour leur demander de l'aide au besoin. Les étudiants sont censés travailler de huit à douze heures par jour, cinq jours par semaine, pendant toute la session. Les étudiants sont notés par les enseignants sur la base de l'application de leurs connaissances à la résolution des problèmes prescrits. Cette session ne peut pas être représentée équitablement sur la base d'heures de cours magistraux ou d'heures de contact. À la recommandation de la faculté de génie, l'université attribue 16 heures-crédits à cette session de résolution de problèmes. En utilisant le facteur K, le nombre d'UA revendiquées est : 16 × 15,5 = 248 UA dans les catégories « mathématiques, sciences naturelles et sciences du génie ».

Appendix 6 Annexe 6

Interpretive statement on distance learning[1]

1. Introduction

Engineers Canada, through the Canadian Engineering Accreditation Board, encourages innovative approaches to program design and delivery leading to flexible options for the benefit of students and for the provision of new engineering education products. In allowing for flexibility in delivery options, the Accreditation Board expects programs to achieve the same educational outcomes regardless of the delivery method(s). This is particularly relevant when neither the title of the program nor the identification of the course is differentiated on the basis of delivery mode.

At the present time in Canada, students may complete distance learning courses as part of an engineering degree program but the majority of accredited programs are campus based. In future, engineering education in Canada may evolve such that students follow a program that is based predominantly on distance learning.

To provide guidance to higher education institutions (HEI) offering distance learning courses that are embedded in programs that have received Accreditation Board accreditation and in anticipation of distance learning programs, the Accreditation Board has developed this interpretive statement.

Accreditation Board criteria do not limit accreditation to any particular mode of delivery; distance learning courses and programs are not excluded.

2. Definition of distance learning

Distance learning is a mode that does not require the student to attend particular classes or events at particular times or particular locations.

[1]This interpretive statement has been prepared by referencing many similar documents prepared by other accreditation bodies, in particular, they are derived from the documentation of Engineers Australia and of the UK Joint Board of Moderators.

Énoncé d'interprétation sur la formation à distance[1]

1. Introduction

Ingénieurs Canada, par l'intermédiaire du Bureau canadien d'agrément des programmes de génie, encourage les approches novatrices en matière de conception et de prestation de programmes qui offrent des options souples pour les étudiants et la fourniture de nouveaux produits de formation en génie. En autorisant une certaine souplesse dans les options de prestation, le Bureau d'agrément s'attend à ce que ces programmes produisent les mêmes résultats éducatifs, quelles que soient les méthodes de prestation. Cela est particulièrement pertinent quand aucune différenciation n'est établie dans le titre du programme ou l'identification du cours sur la base du mode de prestation.

Actuellement, au Canada, les étudiants peuvent suivre des cours à distance dans le cadre d'un programme de génie, mais la majeure partie des programmes agréés se donne sur les campus. Dans l'avenir, la formation en génie au Canada pourrait évoluer vers la possibilité pour les étudiants de suivre un programme principalement basé sur la formation à distance.

Le Bureau canadien d'agrément des programmes de génie a élaboré cet énoncé d'interprétation afin de guider les établissements d'enseignement supérieur (EES) qui offrent des cours de formation à distance intégrés à des programmes agréés, et en prévision de l'implantation de programmes de formation à distance.

Les normes du Bureau d'agrément ne limitent pas l'agrément à un mode de prestation particulier; la formation à distance n'est pas exclue.

2. Définition de la formation à distance

La formation à distance est un mode de prestation qui n'exige pas que l'étudiant assiste à des cours ou à des activités à des heures ou des endroits particuliers.

[1]Cet énoncé d'interprétation s'inspire de nombreux documents semblables préparés par d'autres organismes d'agrément; en particulier, il s'inspire de la documentation provenant d'Engineers Australia et de l'UK Joint Board of Moderators.

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3. Key principles

Accreditation criteria and procedures that apply to performance expectations apply to distance learning courses as for any other type of course delivery mode. The effectiveness of any quality systems, purpose-built for distance learning, should be assessed.

Assessment of distance learning assignments and student performance must be at the same level as any equivalent full or part-time courses being delivered by the academic institution.

For accreditation visits, higher education institutions (HEI) should be notified as early as possible about any requirements for information, evidence or visit arrangements that are additional or different to those normally required for campus-based courses.

There is a requirement to train visiting team members so that they can carry out accreditation of distance learning. Teams will be reviewing different types of material used for a distance learning course delivery but these are no less valid than the many other modes encountered in programs. Distance learning will be examined by visiting teams using the same rigour and standards applied to any other delivery mode.

4. Distance learning issues that may affect accreditation

The inherent flexibility of distance learning courses can pose challenges to established accreditation policies and procedures. Particular issues that may arise in relation to distance learning and account should be taken of these issues and any other aspects of distance learning provision when carrying out accreditation.

4.1. Issues primarily relevant to program organization and delivery

1. The potentially open-ended nature of distance learning programs
2. The involvement of a range of delivery partners
3. The diversity of student groups
4. The opportunity for individually tailored programs

3. Principes clés

Les normes et procédures d'agrément qui s'appliquent au rendement attendu valent aussi pour la formation à distance, comme pour tout autre type de mode de prestation de cours. L'efficacité de tout système de contrôle de la qualité construit expressément pour la formation à distance devrait être évaluée.

L'évaluation des travaux des étudiants inscrits à des cours de formation à distance et les résultats de ces étudiants doivent être de même niveau que ceux de tout cours équivalent à temps plein ou à temps partiel donné par l'établissement d'enseignement.

En ce qui concerne les visites d'agrément, les établissements d'enseignement supérieur devraient être avisés dès que possible des exigences particulières en matière d'information, de preuves ou de préparation des visites qui pourraient différer de celles qui s'appliquent normalement aux cours données sur le campus.

Il faudra former les membres des équipes de visiteurs pour qu'ils puissent procéder à l'évaluation de la formation à distance. Ces équipes examineront les différents types de matériel didactique utilisés dans la prestation de formation à distance, matériel qui est tout aussi valable que les nombreux autres modes de livraison employés dans les programmes. Les équipes de visiteurs examineront la formation à distance en utilisant la même rigueur et les mêmes normes que celles qui s'appliquent à tout autre mode de prestation.

4. Questions pouvant avoir une incidence sur l'agrément de la formation à distance

La souplesse inhérente aux cours de formation à distance peut poser certains défis pour les politiques et procédures établies en matière d'agrément. Des questions particulières peuvent se poser en ce qui concerne l'apprentissage à distance et il faudra tenir compte de ces questions et des autres aspects de la prestation de formation à distance lors de l'agrément.

4.1. Questions touchant principalement l'organisation et la prestation de programmes

1. Durée potentiellement prolongée des programmes de formation à distance
2. Participation de divers partenaires de prestation
3. Diversité des groupes d'étudiants
4. Possibilité de programmes personnalisés

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4.1.1 The potentially open-ended nature of distance learning programs

In view of the pace of change in engineering practice, concern has been expressed about students taking long periods to complete a distance learning degree, such that older courses included in degree programs may no longer be current.

The length of time that students might take to complete a program need not be a barrier to accreditation if the required learning outcomes are being achieved. However, the rapid pace of change warrants overall time limits for program completion, individual Canadian institutions typically require completion of degree requirements within periods shorter than 10 years. There is no reason for distance learning to extend the time students take to complete programs beyond the current norms.

HEI should specify in the accreditation self-study questionnaire submission document the maximum length of time permitted for completion of their distance learning program(s).

4.1.2 The involvement of a range of delivery partners

The Accreditation Board criteria include an option to require an accreditation visit to all locations where courses are delivered (satellite campuses, feeder institutions) and this applies to distance learning provision.

The home (awarding) institution is responsible for the academic standards of its awards and the quality of provision leading to them. The arrangements for assuring quality and standards should be as rigorous, secure and open to scrutiny as those for courses provided wholly within the responsibility of a single institution and through conventional class-based modes of teaching.

A home institution may class as distance learning a course that is in fact being delivered under a credit-transfer agreement. Careful scrutiny of accreditation submission documentation should be undertaken to identify any misrepresentation and ensure that appropriate accreditation activity is undertaken.

4.1.1 Durée potentiellement prolongée des programmes de formation à distance

Compte tenu de la rapidité des changements survenant dans l'exercice du génie, certaines préoccupations ont été soulevées quant au fait que des étudiants prennent beaucoup de temps pour compléter un programme de formation à distance, compte tenu du risque que les cours plus « anciens » inclus dans les programmes ne soient plus d'actualité.

Le temps que les étudiants peuvent prendre pour terminer un programme n'est pas nécessairement un obstacle à l'agrément, si les résultats de l'apprentissage sont atteints. Cependant, l'évolution rapide du génie justifie l'imposition de limites de temps globales pour la réussite d'un programme. Les établissements d'enseignement canadiens imposent généralement un délai maximal de 10 ans pour la réussite d'un programme menant à un diplôme. Il n'y a aucune raison pour que la formation à distance prolonge au-delà des normes actuelles le délai dont les étudiants ont besoin pour terminer un programme.

Les établissements d'enseignement supérieur devraient indiquer, dans leur réponse au questionnaire d'autoévaluation pour l'agrément, le délai maximum autorisé pour la réussite de leurs programmes de formation à distance.

4.1.2 Participation de divers partenaires de prestation

Les normes du Bureau d'agrément prévoient l'option d'exiger une visite d'agrément dans tous les endroits où des cours sont donnés (campus satellites, établissements affiliés) et cela s'applique également à la prestation de formation à distance.

L'établissement d'attache est responsable des normes des grades universitaires décernés et de la qualité de la prestation de cours menant à ces grades. Les dispositions prises pour assurer la qualité et le respect des normes devraient être aussi rigoureuses, sûres et sujettes à examen que celles qui s'appliquent aux cours donnés entièrement sous la responsabilité d'un même établissement et au moyen de modes d'enseignement traditionnels (cours donnés en classe).

Un établissement d'attache peut catégoriser comme étant de la formation à distance un cours qui est en fait donné en vertu d'un accord de transfert de crédits. Il y aurait donc lieu d'examiner attentivement la documentation soumise à l'appui d'une demande d'agrément afin d'identifier toute déclaration erronée et de veiller à ce qu'une évaluation appropriée soit réalisée.

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4.1.3 The diversity of student groups

The flexibility of distance learning is attractive to those who may not wish, or be able, to attend campus. Progression and promotion data are required as for any program. Levels of progression should be similar to those for a campus-based program.

HEI are increasingly offering multiple entry points during the academic year and students may not move through distance learning programs as a cohort. Therefore, it is important that the reference point for time-in-program is the point at which the individual student enters the program.

4.1.4 The opportunity for individually tailored programs

While distance learning potentially enables more flexibility in tailoring programs to individual students, Accreditation Board accreditation requires satisfaction of all Accreditation Board curriculum content criteria by every student, regardless of delivery mode.

Students should be properly advised about course choices. Information about the flagging of groups of courses as providing particular pathways within an overall program may be required.

4.2. Issues primarily relevant to individual course organization and delivery

1. The robustness of systems to support students
2. The support of project work, team work, and access to laboratories
3. The need to confirm the authenticity of the student

4.1.3 Diversité des groupes d'étudiants

La souplesse de la formation à distance est attrayante pour ceux qui ne souhaitent pas ou ne peuvent pas assister à des cours donnés sur un campus. Des données sur la progression des étudiants et leur passage d'une année à la suivante sont exigées comme pour tout autre programme. Les niveaux de progression devraient être semblables à ceux d'un programme donné sur le campus.

De plus en plus, les établissements d'enseignement supérieur offrent de multiples points d'entrée durant l'année scolaire, et les étudiants ne progressent pas nécessairement dans les programmes de formation à distance en tant que cohortes. Il est donc important que le point de référence pour le délai de réussite d'un programme soit le moment où un étudiant commence le programme.

4.1.4 Possibilité de programmes personnalisés

Bien que la formation à distance offre, potentiellement, davantage de souplesse pour personnaliser des programmes en fonction d'étudiants individuels, l'agrément exige la satisfaction, par chaque étudiant, de toutes les normes du Bureau d'agrément relatives au contenu du programme d'études, quel que soit le mode de prestation de la formation.

Les étudiants devraient être adéquatement informés des choix de cours. Il pourrait être nécessaire de leur fournir de l'information sur des groupes de cours offrant des cheminements particuliers dans le cadre d'un programme général.

4.2. Questions touchant principalement l'organisation et la prestation de cours individuels

1. Robustesse des systèmes de soutien destinés aux étudiants
2. Soutien des activités de projet et du travail d'équipe et accès aux laboratoires
3. Nécessité de confirmer l'identité de l'étudiant

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4.2.1 The robustness of systems in support of students

Courses delivered by distance learning must be underpinned by a sound delivery platform. There must be evidence that the communications systems in place enable interaction between students and both their instructors and peers, so that distance learning students are not disadvantaged by comparison with campus-based students. There should be appropriate access to student, academic and administrative services, and timely feedback on assignments. The platform may be a virtual learning environment (VLE)[2] or similar system.

Visiting teams will require access to this platform, and where appropriate in advance of a visit, as part of the accreditation process. Greater emphasis will be placed on the delivery and communications systems, and academic institutions may be required to provide more detail about this than is required for campus-based courses.

The views of distance learning students shall be included in student feedback and questions about distance learning shall be included. These may cover, for example, the quality of web-based learning systems and access to the library. There must be a meeting with some distance learning students during the accreditation visit. It would be acceptable to make use of video conferencing facilities.

4.2.2 The support of project work, teamwork, and access to laboratories

Some learning outcomes for courses are most appropriately demonstrated by way of practical work. The visiting team will consider a range of ways by which this may be demonstrated that need not necessarily be limited to campus laboratories. For example, work-based distance learning students may be able to achieve the required standards through workplace activity.

[2]A virtual learning environment (VLE) is a system designed to support teaching and learning in an educational setting. A student will normally work over the Internet and the VLE will provide a set of tools for assessment, communication, uploading of content, return of students' work, peer assessment, administration of student groups, collecting and organizing student grades, questionnaires, tracking tools, etc.

4.2.1 Robustesse des systèmes de soutien destinés aux étudiants

Les cours de formation à distance doivent être soutenus par une solide plateforme de livraison. Les établissements d'enseignement doivent prouver que les systèmes de communications mis en place permettent les interactions entre les étudiants, leurs instructeurs et leurs pairs, de sorte que ces étudiants ne soient pas désavantagés par rapport aux étudiants qui suivent des cours en classe. Les étudiants devraient avoir un accès adéquat aux services aux étudiants, pédagogiques et administratifs, et obtenir une rétroaction rapide au sujet de leurs travaux. La plateforme de livraison peut être un environnement d'apprentissage virtuel (EAV)[2] ou un système semblable.

Dans le cadre du processus d'agrément, les équipes de visiteurs devront pouvoir accéder à cette plateforme, s'il y a lieu, préalablement à une visite. Les évaluateurs accorderont plus d'importance aux systèmes de prestation et de communications, et les établissements d'enseignement pourraient être tenus de fournir davantage de détails à ce sujet que ce qui est exigé pour les cours dispensés en classe.

Les opinions des étudiants inscrits à des cours à distance devront être incluses dans les commentaires des étudiants, et des questions concernant la formation à distance devront être prévues. Ces questions pourraient porter, par exemple, sur la qualité des systèmes d'apprentissage basés sur le Web et l'accès à la bibliothèque. La visite d'agrément devra comporter une rencontre avec des étudiants inscrits à des cours de formation à distance. Il serait possible d'utiliser à cette fin des installations de vidéoconférence.

4.2.2 Soutien des activités de projet et du travail d'équipe et accès aux laboratoires

Dans certains cas, les travaux pratiques constituent la façon la plus probante de démontrer que les résultats escomptés d'un cours ont été atteints. L'équipe de visiteurs tiendra compte d'un éventail de façons de démontrer ces résultats, façons qui ne se limiteront pas nécessairement aux laboratoires de l'établissement. Par exemple, les étudiants inscrits à un programme de formation à distance pourraient être en mesure de satisfaire aux normes établies par leur activité en milieu de travail.

[2]Un environnement d'apprentissage virtuel (EAV) est un système conçu pour soutenir l'enseignement et l'apprentissage dans un cadre éducatif. Normalement, l'étudiant travaille sur Internet et l'EAV fournit un ensemble d'outils pour l'évaluation, la communication, le téléversement de contenu, le retour des travaux de l'étudiant, l'évaluation par les pairs, l'administration de groupes d'étudiants, la collecte et l'organisation des notes des étudiants, des questionnaires, des outils de suivi, etc.

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There is a need for a greater emphasis on the systems in place to ensure that practical skills-based activities are developed, and it may be necessary for universities to provide additional material to demonstrate how distance learning courses achieve the skill-based outcomes. This may include mandatory on-campus course components.

The same rigour and standards apply to the assessment of work based practical work as would apply to full-time campus provision. Similar considerations apply to project work and team work.

4.2.3 The need to confirm the authenticity of students

Robust systems must be in place to ensure that the work being assessed is the student's own work. This may include:

- the use of recognized centres outside Canada;
- holding assessments in regional centres;
- students attending residential courses; and,
- on line visual oral assessments.

HEI already make provision for confirming the authenticity of students writing examinations and similarly rigorous procedures must be used for online materials submitted for evaluation.

February 25, 2012

Il faut accorder davantage d'importance aux systèmes en place pour assurer le développement d'activités pratiques visant l'acquisition de compétences, et les universités pourraient être tenues de fournir de la documentation supplémentaire pour démontrer comment les cours de formation à distance produisent des résultats axés sur les compétences. Cela pourrait comprendre des éléments de cours obligatoires donnés sur le campus.

La même rigueur et les mêmes normes s'appliquent à l'évaluation des travaux pratiques en milieu de travail qu'aux cours à temps plein dispensés sur le campus. Des considérations semblables s'appliquent aux travaux reliés à des projets et au travail en équipe.

4.2.3 Nécessité de confirmer l'identité de l'étudiant

Des systèmes robustes doivent être en place pour garantir que les travaux évalués sont bien ceux de l'étudiant. Cela pourrait comprendre les mesures suivantes :

- l'utilisation de centres reconnus à l'extérieur du Canada;
- la tenue d'évaluations dans des centres régionaux;
- l'obligation pour les étudiants d'assister à des cours donnés « en résidence »;
- des évaluations orales et visuelles en ligne.

Les établissements d'enseignement supérieur prennent déjà des mesures pour confirmer l'identité des étudiants qui passent des examens, et des mesures aussi rigoureuses doivent s'appliquer aux travaux soumis en ligne à des fins d'évaluation.

25 février 2012

Appendix 7 Annexe 7

Interpretive statement on accreditation unit (AU) categories

This Interpretative statement is intended to provide a clarification with respect to the flexibility associated with the required 305 accreditation units (AUs) beyond the minimum sub-total of 1,545 AUs arising from the five specified AU categories (mathematics, natural sciences, complementary studies, engineering science and engineering design).
As indicated under Criterion 3.4.2, the minimum AU requirements with respect to the different categories are as follows:

AU Category	Minimum AU required
Mathematics	195
Natural sciences	195
Mathematics and natural science	*420*
Engineering science	225
Engineering design	225
Engineering science and engineering design	*900*
Complementary studies	225
Sub-total	*1,545*
TOTAL AU	**1,850**

For clarification, the required 305 AUs beyond the minimum sub-total of 1,545 AUs shown above may be assigned to any learning activity that complements the technical content of the curriculum, is consistent with the program objectives and is assigned academic credit by the institution. While curriculum AU credits may be assigned for co-op work terms and/or internships, as is the current practice, regulators will determine whether these activities will count towards licensure work experience requirements whether or not the home institution grants academic credit for these activities.

The 305 AUs may be assigned to any combination of mathematics, natural sciences, engineering science, engineering design and complementary studies, as well as a distinct category "other" if considered desirable. The latter is intended to cover learning activities that may not otherwise be categorized but complement the technical content of the curriculum, is consistent with the program objectives and is assigned academic credit by the institution.

September 2020 / septembre 2020

Énoncé d'interprétation sur les catégories d'unités d'agrément (UA)

Cet énoncé d'interprétation a pour objet de clarifier la question de la souplesse que permettent les 305 unités d'agrément (UA) requises en plus du sous-total minimum de 1 545 UA dans les cinq catégories précisées (mathématiques, sciences naturelles, études complémentaires, sciences du génie et conception et ingénierie).
Comme l'indique la norme 3.4.2, le nombre minimum d'UA exigé dans les différentes catégories se répartit comme suit :

Catégorie d'UA	Nombre minimum d'UA exigé
Mathématiques	195
Sciences naturelles	195
Mathématiques et sciences naturelles	*420*
Sciences du génie	225
Conception en ingénierie	225
Sciences du génie et conception en ingénierie	*900*
Études complémentaires	225
Sous-total	*1545*
NOMBRE TOTAL D'UA	**1850**

Il convient de préciser que les 305 UA qui s'ajoutent au sous-total minimum de 1545 UA comme indiqué ci-dessus peuvent être attribuées aux activités d'apprentissage qui viennent compléter le contenu technique du programme d'études, qui sont conformes aux objectifs du programme et pour lesquelles l'établissement d'enseignement a approuvé l'octroi de crédits universitaires. Bien que des crédits (UA) puissent être accordés aux stages coopératifs ou aux stages réguliers, comme cela se fait couramment, il revient aux organismes de réglementation de déterminer si ces activités peuvent être prises en compte dans l'expérience de travail exigée pour l'obtention du permis d'exercice, que l'établissement d'attache accorde ou non des crédits universitaires à ces activités.

Ces 305 UA peuvent être attribuées à toute combinaison de mathématiques, de sciences naturelles, de sciences du génie, de conception en ingénierie et d'études complémentaires, ainsi que comme catégorie « autre », si cela est jugé souhaitable. Cette dernière option concerne les activités d'apprentissage qui n'entrent dans aucune catégorie, mais qui complètent le contenu technique du programme d'études, qui sont conformes aux objectifs du programme et pour lesquelles l'établissement d'enseignement a approuvé l'octroi de crédits universitaires.

Appendix 8 Annexe 8

Interpretive statement on graduate attributes

1. Introduction

This statement sets out the Accreditation Board's expectations regarding minimum levels of conformance with Criterion 3.1. It is intended in part to assure common reporting requirements across institutions.

Graduates of accredited engineering programs are expected to possess the attributes of Criterion 3.1 to a degree that would be judged acceptable by professional engineers who are familiar with undergraduate engineering education in Canada. To enable visiting teams to arrive at evidence-based assessments, HEI's must provide sufficient documentation that describes the learning activities that are intended to impart the various graduate attributes, and that describes the processes, procedures and tools used to assess the extent to which graduates actually acquire the various attributes.

The Questionnaire for Evaluation of an Engineering Program specifies the information to be provided in advance of an accreditation visit; this is intended to provide an overview and much of it comprises only partial information such as samples and examples. More detailed information should be available to visiting teams on-site through a Graduate Attributes Dossier that describes the HEI's processes, procedures and assessment tools as well as assessment data and processed results.

2. Principles

Outcomes-based (Criterion 3.1) and curriculum content and quality input (Criterion 3.4) criteria are considered complementary, often addressing different aspects of a program, so that the reliance on one does not preclude the need for the other.

Criterion 3.1 assesses the success of the program in delivering a specified set of skills, values and competencies (attributes) to each and every graduating class.

Criterion 3.4 certifies through the "minimum path" and the institutional examination process that every individual student has satisfied the minimum academic requirements for entry to the profession.

Énoncé d'interprétation sur les qualités requises des diplômés

1. Introduction

Le présent énoncé établit les attentes du Bureau d'agrément en ce qui concerne le niveau de conformité minimal à la norme 3.1. Il vise notamment à assurer l'uniformité des exigences de rapports d'un établissement à un autre.

On s'attend à ce que les diplômés d'un programme de génie agréé possèdent les qualités requises de la norme 3.1 que des ingénieurs au fait des programmes de premier cycle en génie au Canada jugeraient acceptables. Afin de permettre aux équipes de visiteurs d'en arriver à des évaluations fondées sur des données probantes, les établissements d'enseignement supérieur doivent fournir une documentation suffisante qui décrit les activités d'apprentissage destinées à conférer les diverses qualités requises des diplômés ainsi que les processus, procédures et outils utilisés pour évaluer dans quelle mesure les diplômés ont effectivement acquis ces qualités.

Le Questionnaire pour l'évaluation d'un programme de génie précise les renseignements à transmettre avant une visite d'agrément; cela vise à donner un aperçu et ne se compose en bonne partie que de renseignements partiels, comme des échantillons et des exemples. Il faudrait donc que les équipes de visiteurs aient accès à des renseignements plus détaillés, sur place, dans un dossier sur les qualités requises des diplômés qui présenterait les processus, procédures et outils d'évaluation de l'établissement ainsi que les données d'évaluation et les résultats du traitement.

2. Principes

On considère que les critères de l'évaluation axée sur les résultats (norme 3.1) ainsi que ceux portant sur le contenu et la qualité du programme d'études (norme 3.4) sont complémentaires, abordant souvent différents aspects d'un programme. Donc, la dépendance envers un n'empêche pas le besoin de l'autre.

La norme 3.1 permet d'évaluer si le programme réussit à faire acquérir un ensemble précis d'habiletés, de valeurs et de compétences (qualités requises) à chacune des promotions sans exception.

La norme 3.4 permet d'attester, en passant par le « cheminement minimal » et le processus d'examen de l'établissement, que chacun des étudiants a satisfait aux exigences de formation universitaire minimales pour être admis à la profession.

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It is recognized that the extent of student learning and the extent of assessments made may differ widely across the twelve attributes.

It is recognized that the assessment of the individual attributes and associated program improvements must occur over a cycle of six years or less.

Although, a range of reporting formats and assessment approaches are possible, the Accreditation Board expects reasonably consistent reporting across institutions, reflecting the approaches that are laid out herein.

3. Elements

Conformance to Criterion 3.1 will be assessed with respect to the following five elements:

a. Organization and Engagement
b. Curriculum Maps
c. Indicators
d. Assessment Tools
e. Assessment Results

Criterion 3.1.1 – Organization and engagement

It is expected that suitable committee and reporting structures are in place to assure the sustainable development and measurement of graduate attributes. All faculty members of the relevant academic unit are expected to be aware of and engaged in outcomes-based assessment. For institutions offering more than one accredited program, there needs to be a suitable balance between multiple-program versus program-specific activities.

Criterion 3.1.2 – Curriculum maps

The curriculum map as adopted by the Accreditation Board shows the relationship between learning activities (courses) –for each of the graduate attributes (rows) and the semesters in which these take place (columns). The map must also provide an identification of those activities in which attribute assessments are made.

In certain circumstances, curriculum maps may be adapted as follows:

- For a program with options and/or more than one primary cohort, distinct maps may be developed, or an option and/or cohort may be distinguished by a colour code or some other designation.

- For a program with many elective courses, a single entry may be used for multiple elective courses unless any such courses are used in the assessments carried out.

Il va de soi que le niveau d'acquisition et le champ d'évaluation des 12 qualités requises pourront différer considérablement.

Il va de soi que l'évaluation de chacune des qualités requises et les améliorations de programme qui y sont liées doivent s'inscrire dans un cycle d'au plus six ans.

Bien qu'il soit possible d'adopter un éventail de formats de rapport et d'approches d'évaluation, le Bureau d'agrément attend des rapports raisonnablement uniformes d'un établissement à un autre qui tiennent compte des approches exposées aux présentes.

3. Éléments

La conformité à la norme 3.1 sera évaluée à l'égard des cinq éléments suivants :

a. Organisation et engagement
b. Cartes de programme d'études
c. Indicateurs
d. Outils d'évaluation
e. Résultats d'évaluation

Norme 3.1.1 – Organisation et engagement

On s'attend à ce que des structures de comité et de rapport appropriés soient en place pour assurer l'acquisition durable des qualités requises par les diplômés, ainsi que leur évaluation. Tout le corps professoral du département concerné devrait connaître l'évaluation axée sur les résultats et y participer. Les établissements offrant plus d'un programme agréé doivent présenter un équilibre approprié entre les activités multiprogrammes et les activités monoprogrammes.

Norme 3.1.2 – Carte du programme d'études

La carte du programme d'études adoptée par le Bureau d'agrément montre la relation entre les activités d'apprentissage (les cours), et ce, pour chacune des qualités requises des diplômés (rangées) et chacun des semestres (colonnes). La carte doit également désigner les activités au cours desquelles les qualités requises sont évaluées.

Dans certaines situations, des cartes du programme d'études peuvent être adaptées comme suit :

- En ce qui concerne un programme comprenant des options ou plus d'une cohorte principale, il est possible de mettre au point différentes cartes, sinon de distinguer une option ou une cohorte au moyen d'un code de couleur ou d'une autre désignation.
- Dans le cas d'un programme comptant de nombreux cours à option, il est possible d'avoir recours à une seule entrée pour plusieurs cours à option, à moins que ces cours soient utilisés dans le cadre des évaluations.

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Criterion 3.1.3 – Indicators

Indicators are attribute-specific descriptors of what measurable outcomes students must achieve in order to be considered competent in the corresponding attribute. The Accreditation Board expects that sufficient indicators (typically 3 to 4 per attribute) to cover the entire scope of the graduate attribute are adopted for the 12 attributes. For institutions offering more than one accredited program, there needs to be a suitable balance between common, multiple-program indicators versus program-specific indicators.

Criterion 3.1.4 – Assessment tools

Assessment tools are measurements made to develop data on student learning. These may be activity-specific measurements addressing one or more indicators within an attribute, or surveys or other tools that may span multiple indicators or attributes. There may be other forms of assessment, such as those arising from third party reviews or self-assessment.

To some extent, assessment tools need to be suitably distributed over the program duration in order to track progress towards the achievement of a particular attribute to assist in curriculum design and the continual improvement process.

In selecting an assessment tool, the Accreditation Board expects that attention will be given to the validity and reliability of the results to be obtained; the applicability of the results to continual improvement; and the sustainability of the data collection effort over the long term.

Criterion 3.1.5 – Assessment results

The Accreditation Board expects that assessment results will be obtained regularly, with results for all twelve attributes obtained over a period of six years or less. These periodic assessment results are in support of the continual improvement process. Most often, activity-specific assessment results are to be provided in the form of achievement levels. These indicate the levels of student achievement with respect to the assessment tool used, and will typically be on a four-point scale: Fails to meet expectations, Minimally meets expectations, Adequately meets expectations, Exceeds expectations.

Effective August 2015
Updated February 2019

Norme 3.1.3 – Indicateurs

Les indicateurs sont les descripteurs, spécifiques à une qualité requise, des résultats mesurables que les étudiants doivent obtenir pour être considérés comme compétents. Le Bureau d'agrément s'attend à ce que l'on adopte un nombre suffisant d'indicateurs (en gros trois ou quatre par qualité) pour couvrir toute l'étendue des 12 qualités requises des diplômés. Les établissements offrant plus d'un programme agréé doivent présenter un équilibre approprié entre les indicateurs communs, multiprogrammes, et les indicateurs monoprogrammes.

Norme 3.1.4 – Outils d'évaluation

Les outils d'évaluation sont des mesures créées pour établir des données sur l'apprentissage des étudiants. Il s'agira de mesures liées à une activité visant un ou plusieurs indicateurs d'une même qualité, sinon d'enquêtes ou d'autres outils qui pourront s'étendre à plusieurs indicateurs ou qualités. Des contrôles de tiers ou des autoévaluations pourront donner lieu à de nouvelles formes d'évaluation.

Dans une certaine mesure, il faut que les outils d'évaluation soient répartis de façon appropriée sur la durée des programmes pour suivre le progrès vers l'acquisition d'une qualité particulière, et ce, afin d'appuyer la conception de programmes d'études et le processus d'amélioration continue.

En choisissant un outil d'évaluation, le Bureau d'agrément s'attend à ce que l'on tienne compte : de la validité et de la fiabilité des résultats à obtenir; de l'applicabilité des résultats à l'amélioration continue; enfin, du caractère durable des efforts de collecte de données à long terme.

Norme 3.1.5 – Résultats d'évaluation

Le Bureau d'agrément s'attend à ce que l'on obtienne des résultats d'évaluation de façon régulière et à ce que les résultats pour les 12 qualités requises aient été obtenus pendant une période d'au plus six ans. Ces résultats périodiques doivent être utilisés pour l'amélioration continue du programme. Le plus souvent, les résultats d'évaluation liés à une activité sont exprimés en niveau d'acquisition des qualités requises. Ils indiquent le niveau de rendement des étudiants à l'égard de l'outil d'évaluation utilisé, habituellement sur une échelle de un à quatre : Ne satisfait pas aux attentes, Satisfait à peine aux attentes, Satisfait adéquatement aux attentes et Dépasse les attentes.

En vigueur en août 2015
Mise à jour : février 2019

Appendix 9 Annexe 9

Interpretive statement on continual improvement

1. Introduction

This statement sets out the Accreditation Board's expectations regarding minimum levels of conformance with Criterion 3.2. It is intended in part to assure common reporting requirements across institutions.

HEIs must have a documented process for periodically examining and evaluating the data on achievement of graduate attributes in the context of continual improvement.

The Questionnaire for Evaluation of an Engineering Program specifies the information to be provided in advance of an accreditation visit; this is intended to provide an overview. More detailed information should be available to visiting teams on-site through a Continual Improvement Dossier that describes the HEI's processes for consultation of stakeholders, decision making and both responsibility and timelines for implementation of actions.

2. Principles

The criteria for accreditation are intended to support the continual improvement of the quality of engineering education. The "minimum path" criterion certifies the individual student. The graduate attributes criterion validates the program and provides the data necessary to develop a process for continual improvement.

3. Elements

Conformance to Criterion 3.2 will be assessed with respect to the following three elements:

a. Improvement Process
b. Stakeholder Engagement
c. Improvement Actions

These elements represent the minimum that need to be assessed with respect to conformance with Criterion 3.2.

Criterion 3.2.1 – Improvement process

The Accreditation Board expects the program to have developed a clear continual improvement process, with a suitable committee structure, an appropriate engagement of the relevant stakeholders, and a well-defined timetable. The roles of the

Énoncé d'interprétation sur l'amélioration continue

1. Introduction

Le présent énoncé établit les attentes du Bureau d'agrément en ce qui concerne le niveau de conformité minimal à la norme 3.2. Il vise notamment à assurer l'uniformité des exigences de rapports d'un établissement à un autre.

Les établissements d'enseignement supérieur doivent s'être dotés d'un processus pour scruter et évaluer les données sur l'acquisition des qualités requises des diplômés au regard de l'amélioration continue.

Le Questionnaire pour l'évaluation d'un programme de génie précise les renseignements à transmettre avant une visite d'agrément; cela vise à donner un aperçu. Il faudrait donc que les équipes de visiteurs aient accès à des renseignements plus détaillés, sur place, dans un dossier sur l'amélioration continue qui présenterait les processus de l'établissement pour la consultation des intervenants, la prise de décisions ainsi que la responsabilité et les échéances de la mise en œuvre des mesures.

2. Principes

Les normes d'agrément visent à favoriser l'amélioration continue de la qualité des programmes d'études en génie. La norme de « cheminement minimum », permet de confirmer la formation acquise par l'étudiant. La norme des qualités requises des diplômés, elle, permet de valider le programme et fournit les données nécessaires pour mettre en place un processus d'amélioration continue.

3. Éléments

La conformité à la norme 3.2 sera évaluée à l'égard des trois éléments suivants :

a. Processus d'amélioration
b. Engagement des intervenants
c. Actions d'amélioration

Ces éléments représentent le minimum qu'il faut évaluer pour établir la conformité à la norme 3.2.

Norme 3.2.1 – Processus d'amélioration

Le Bureau d'agrément s'attend à ce que les responsables du programme aient mis en place un processus d'amélioration continue clair, en même temps qu'une structure de comité appropriée, qu'un engagement approprié des intervenants concernés et qu'un calendrier bien défini. Il convient de préciser le

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various participants consulted, including those external to the program and to the institution, should be identified.

It is recognized that activity-specific assessment tools and surveys do not provide the only form of program assessment that are used in continual improvement. Other forms of assessment, including a reliance on third party reviews and student self-assessment, may be utilized.

Criterion 3.2.2 – Stakeholder engagement

The Accreditation Board expects that the continual improvement process will involve consultation with a broadly-based set of stakeholders both external and internal to the program and institution.

The consultation process may be structured in any way the program considers appropriate, for example, as a single broadly-based forum or as a series of attribute-specific groups or focused groups arising from issues identified by data collection and analysis.

Criterion 3.2.3 – Improvement actions

The Accreditation Board expects to see evidence that the continual improvement process will result in specific curriculum or other program improvements, improvements in the achievement of graduate attributes, and/or improvements in the assessment process itself. It is expected that such improvements are clearly articulated and that they are each supported by a clear rationale. It is expected that timelines and implementation plans will be established and carried through.

Decisions to postpone action or not act as a result of a review process are considered to be actions in the context of this criterion.

Effective August 2015

rôle des différents participants consultés, y compris ceux qui ne font pas partie du programme ou de l'établissement.

Il va de soi que les outils d'évaluation et les sondages liés à une activité n'engendrent pas la seule forme d'évaluation des programmes utilisée dans le cadre de l'amélioration continue. On pourra donc avoir recours à de nouvelles formes d'évaluation, y compris les contrôles de tiers et les autoévaluations d'étudiants.

Norme 3.2.2 – Engagement des intervenants

Le Bureau d'agrément s'attend à ce que le processus d'amélioration continue donne lieu à la consultation d'un ensemble élargi d'intervenants, qu'ils fassent partie ou non du programme et de l'établissement.

Il sera possible d'organiser le processus de consultation d'une façon que les responsables du programme considéreront comme appropriée, par exemple, en un forum à larges assises ou en une série de groupes affectés à une qualité, sinon en groupes de consultation formés autour de questions soulevées par la collecte et l'analyse des données.

Norme 3.2.3 – Actions d'amélioration

Le Bureau d'agrément s'attend à constater que le processus d'amélioration continue entraînera des améliorations précises à un programme d'études ou à d'autres programmes, des améliorations dans l'acquisition des qualités requises des diplômés ou des améliorations au processus d'évaluation lui-même. On s'attend à ce que de telles améliorations soient clairement énoncées et toutes étayées par un raisonnement clair. On s'attend également à ce que des calendriers et des plans de mise en œuvre soient établis et suivis.

Les décisions prises pour retarder une action ou pour ne pas donner suite à un contrôle sont considérées comme des actions au regard de cette norme.

En vigueur en août 2015

Appendix 10 Annexe 10

Confidentiality: policies and procedures

1. General statement on confidentiality policy

The accreditation of undergraduate engineering programs in Canada is a voluntary process. As such, the Accreditation Board requires that all records and deliberations of the Accreditation Board are kept confidential insofar as accreditation activities and actions are concerned. This has been the policy of the Accreditation Board since its inception. Furthermore, the Accreditation Board guarantees, to each institution seeking accreditation, that the Accreditation Board will not publicly reveal any information concerning the institution other than a list of accredited programs together with the effective or dates of the accreditation period and that any information disclosed to participants in the accreditation process will be subject to safeguards to protect its confidentiality.

The general policy statement is: "No information relative to accreditation emitting from or received by the Canadian Engineering Accreditation Board is to be transmitted or revealed in writing or by word of mouth by any member of the Accreditation Board, member of an Accreditation Board committee or visiting team, Engineers Canada official or staff, or observer of the Accreditation Board to any other individual or organization, except as specifically permitted".

This document sets forth the procedures the Accreditation Board follows on accreditation activities in maintaining this confidentiality.

Restrictions are placed upon documents of the Accreditation Board. Restrictions are also placed upon individuals having access to Accreditation Board accreditation information.

Engineers Canada constituent members who receive information about accreditation decisions, as permitted by these procedures must have entered into a written agreement to protect the confidentiality of any such information and not to disclose it, unless required to do so by law.

Special note

The Terms of Reference of the Accreditation Board provide a mechanism for a formal review of an Accreditation Board decision to deny or terminate accreditation of a degree program.

The Formal Review Committee, established by the Engineers Canada Board, will establish its own confidentiality policy.

Politiques et procédures de confidentialité

1. Énoncé général sur la politique de confidentialité

L'agrément des programmes de génie de premier cycle au Canada est un processus qui se fait sur une base volontaire. Ainsi, les dossiers et les délibérations du Bureau d'agrément doivent demeurer strictement confidentiels en ce qui concerne les activités et les décisions d'agrément. Cela a toujours été la politique du Bureau. En outre, le Bureau d'agrément garantit à tous les établissements qui présentent une demande d'agrément qu'aucun renseignement à leur sujet ne sera divulgué, à l'exception d'une liste des programmes agréés et des dates d'entrée en vigueur de la période d'agrément. Il garantit également que tous les renseignements divulgués aux personnes qui prennent part au processus d'agrément sont assujettis à des mesures de sécurité afin d'assurer leur confidentialité.

L'énoncé de politique général stipule ce qui suit : « Nul renseignement rattaché à l'agrément provenant du Bureau canadien d'agrément des programmes de génie ou reçu par ce bureau ne doit être transmis ni révélé, par écrit ou de vive voix, par un membre quelconque du Bureau d'agrément, d'un comité ou d'une équipe de visiteurs du Bureau d'agrément, ni par un dirigeant ou membre du personnel d'Ingénieurs Canada, un observateur du Bureau d'agrément, à tout autre personne ou organisme, sauf ainsi qu'il aura été expressément autorisé.»

Le présent document décrit les procédures que suit le Bureau d'agrément dans le cadre de ses activités d'agrément en vue de préserver la confidentialité.

Des restrictions sont imposées pour ce qui est des documents du Bureau d'agrément. Les particuliers qui ont accès aux renseignements du Bureau d'agrément sur l'agrément font également l'objet de restrictions.

Les membres constituants d'Ingénieurs Canada qui reçoivent des renseignements touchant aux décisions d'agrément, tel que permis par ces procédures, doivent avoir conclu une entente écrite suivant laquelle ces renseignements demeurent confidentiels et ne seront pas divulgués, à moins que les membres constituants soient tenus par la loi de le faire.

Remarque particulière

Le mandat du Bureau d'agrément prévoit un mécanisme d'appel des décisions du Bureau d'agrément afin de refuser ou de mettre fin à l'agrément d'un programme menant à un diplôme.

Le comité de révision, établi par le conseil d'Ingénieurs Canada, établira sa propre politique de confidentialité. Toutefois, cette politique doit s'inscrire dans la perspective de l'énoncé de

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However, this policy must be within the spirit of the general policy statement unless otherwise required by subsequent legal action.

2. Individuals and organizations

2.1 Members of the Accreditation Board

The Accreditation Board consists of 20 voting members appointed by the Engineers Canada Board, and a non-voting secretary.

To avoid any conflict of interest, Accreditation Board members shall withdraw from the meeting for those agenda items related to the accreditation of programs at the institution where that Accreditation Board member holds an appointment or other conflict.

2.2 Observers at Accreditation Board meeting

Each member of Engineers Canada and the Canadian Engineering Qualifications Board are invited to send a representative(s) to serve as an observer at each Accreditation Board meeting

The Canadian Federation of Engineering Students, the Commission des titres d'ingénieur, the signatories of the *Washington Accord*, and other relevant organizations are invited to send a representative(s) to serve as an observer at each Accreditation Board meeting.

A duly appointed Accreditation Board member may attend the spring Accreditation Board meeting immediately preceding his/her appointment date, as a "member-elect".

2.3 Members of Accreditation Board committees and visiting teams

Members of Accreditation Board committees and visiting teams (normally the team chair) who are not members of the Accreditation Board, may be non-voting members "pro-tempore" of the Accreditation Board for the agenda item(s) related to their activity. Such members are invited to attend Accreditation Board meetings by the Accreditation Board chair or by the secretary at the Accreditation Board chair's request. Normally they shall be in attendance only for the agenda item related to their activity but they may be invited to be observers for other agenda items at the discretion of the Accreditation Board chair.

politique général, à moins d'indication contraire en fonction des procédures judiciaires ultérieures.

2. Particuliers et organismes

2.1 Membres du Bureau d'agrément

Le Bureau d'agrément est composé de 20 membres votants nommés par le conseil d'Ingénieurs Canada, ainsi que d'un secrétaire sans droit de vote.

Pour éviter les conflits d'intérêt, ou tout autre genre de conflit, tout membre du Bureau d'agrément qui occupe une charge auprès d'un établissement d'enseignement se retirera de la réunion pour les points à l'ordre du jour qui ont trait à l'agrément de programmes auprès de cet établissement.

2.2 Observateurs aux réunions du Bureau d'agrément

Tous les membres d'Ingénieurs Canada et le Bureau canadien des conditions d'admission en génie sont invités à désigner un(des) représentant(s) à titre d'observateur, à chacune des réunions du Bureau d'agrément.

La Fédération canadienne des étudiants et étudiantes en génie, la Commission des titres d'ingénieur, les signataires de l'*Accord de Washington* et d'autres organisations pertinentes peuvent sélectionner un observateur, qui assistera à chacune des réunions du Bureau d'agrément.

Un membre dûment nommé du Bureau d'agrément peut, à titre de membre élu, assister à la réunion du printemps du Bureau d'agrément qui précède immédiatement sa date de nomination.

2.3 Membres des comités et des équipes de visiteurs du Bureau d'agrément

Les membres des comités et des équipes de visiteurs (en règle générale le président) du Bureau d'agrément qui ne sont pas membres du Bureau d'agrément peuvent être considérés comme membres « temporaires » sans droit de vote du Bureau d'agrément à l'égard des points à l'ordre du jour rattachés à leur fonction. Ces personnes peuvent, à la discrétion du président ou du secrétaire du Bureau d'agrément, être priées d'assister aux réunions du Bureau d'agrément. Normalement, ces personnes peuvent assister seulement aux périodes consacrées aux points à l'ordre du jour rattachés à leur fonction, mais le président du Bureau d'agrément est libre de les inviter à titre d'observateur aux périodes consacrées à d'autres points à l'ordre du jour.

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2.4 Other individuals and organizations

The confidentiality of documents as described in sections 3.2 through 3.9 (inclusive) and the information contained therein shall be respected.

Public documents shall be treated as such.

"Official use" documents are to be treated as normal business documents at the discretion of the recipient.

3. Accreditation Board documents

3.1 General statements

All Accreditation Board documents are available to Accreditation Board members and the Accreditation Board Secretariat.

Accreditation Board members or the Accreditation Board Secretariat may classify Accreditation Board documents as "AB CONFIDENTIAL" if it is deemed appropriate to do so, or when requested to do so by the submitter of a document.

3.2 Documents available to Accreditation Board members and the Accreditation Board Secretariat only

(labelled "AB CONFIDENTIAL)

- Members manual
- Unabridged minutes of Accreditation Board meetings (see Section 3.5)
- Unabridged agenda and attachments for Accreditation Board meetings (see Section 3.5)
- List of potential visiting team members
- Unedited visiting team reports
- Dean's comments on visiting team reports
- Visiting team chair's comments on dean's comments
- Report received from dean in response to a previous accreditation decision requirement
- Previous visiting team's comments on above report
- Accreditation Board chair's accreditation decision report to dean
- Response from dean on accreditation decisions – if not a formal review

2.4 Autres particuliers et organismes

La confidentialité de documents telle que décrite aux sections 3.2 à 3.9 (inclusivement) et les renseignements qu'ils contiennent doit être respectée.

Les documents publics doivent être traités de la même manière.

Les documents « d'usage officiel » seront traités comme des documents d'affaires courantes à la discrétion du destinataire.

3. Documents du Bureau d'agrément

3.1 Énoncés généraux

Tous les documents du Bureau d'agrément sont à la disposition des membres du Bureau d'agrément et du secrétariat du Bureau d'agrément.

Les membres du Bureau d'agrément ou le secrétariat du Bureau d'agrément peuvent attribuer la désignation « BA – CONFIDENTIEL » à certains documents du Bureau d'agrément lorsque la situation le justifie, ou à la demande de la personne qui a soumis le document.

3.2 Documents réservés aux membres du Bureau d'agrément et au secrétariat du Bureau d'agrément

(mention « BA – CONFIDENTIEL »)

- Manuel des membres
- Procès-verbaux intégraux des réunions du Bureau d'agrément (voir aussi la Section 3.5)
- Ordre du jour et documentation intégraux des réunions du Bureau d'agrément (voir aussi la Section 3.5)
- Liste de membres potentiels de l'équipe de visiteurs
- Rapports intégraux de l'équipe de visiteurs
- Commentaires du doyen sur les rapports de l'équipe de visiteurs
- Commentaires du président de l'équipe de visiteurs sur les commentaires du doyen
- Rapport reçu du doyen en réponse à une exigence relative à une décision d'agrément antérieure
- Commentaires de la dernière équipe de visiteurs au sujet du rapport susmentionné
- Rapport du président du Bureau d'agrément à l'intention du doyen sur la décision d'agrément
- Réponse du doyen au sujet des décisions d'agrément, s'il ne s'agit pas d'un appel officiel

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3.3 Documents transmitted from the Accreditation Board to the dean

(The transmitted document becomes the property of the recipient and is labelled "AB CONFIDENTIAL".)

- Edited visiting team report
- Accreditation Board chair's accreditation decision letter

The dean is free to convey the information contained in the edited visiting team report and the Accreditation Board chair's accreditation decision letter as he/she sees fit. As a minimum, the dean must inform students and staff of the process of accreditation and of the accreditation status of the program(s).

3.4 Documents transmitted from the Accreditation Board to the association for the relevant jurisdiction

Accreditation Board chair's accreditation decision letter to the dean and attached appendix.

The documents provided to an association are subject to an obligation to maintain confidentiality contained in an agreement between Engineers Canada and the association.

3.5 Documents transmitted from the Accreditation Board to team chairs and members, and observers

- Labelled: "AB CONFIDENTIAL"
- Labelled: "DO NOT COPY – RETURN TO THE ACCREDITATION BOARD SECRETARIAT"

Visiting team chair – Forthcoming visit

- Accreditation Board chair's accreditation decision report to dean of previous accreditation decisions. This may be accompanied by pertinent correspondence and or other documents, (e.g. Report requested by the Accreditation Board, dean's comments, correspondence related to accreditation decisions, etc). The visiting team chair may share this information with team members as the need arises.

- Dean's comments on the edited visiting team report

3.3 Documents transmis par le Bureau d'agrément au doyen

(Les documents transmis deviennent la propriété du destinataire et portent la mention « BA – CONFIDENTIEL »)

- Le rapport révisé de l'équipe de visiteurs
- La lettre de décision d'agrément du président du Bureau d'agrément

Le doyen peut transmettre les renseignements contenus dans le rapport révisé de l'équipe de visiteurs et dans la lettre de décision d'agrément du président du Bureau d'agrément s'il le juge nécessaire. Le doyen doit cependant au moins informer les étudiants et le personnel du processus d'agrément et du statut d'agrément du programme ou des programmes en cause.

3.4 Documents transmis par le Bureau d'agrément à l'ordre de la zone de compétence concernée

La lettre de décision d'agrément du président du Bureau d'agrément au doyen et l'annexe.

Les documents soumis aux ordres sont assujettis à une disposition de confidentialité incluse dans une entente conclue entre d'Ingénieurs Canada et l'ordre concerné.

3.5 Documents transmis par le Bureau d'agrément aux présidents d'équipe de visiteurs et aux membres, ainsi qu'aux observateurs

- Mention « BA – CONFIDENTIEL »
- Mention « REPRODUCTION INTERDITE – RETOURNER AU SECRÉTARIAT DU BUREAU D'AGRÉMENT »

Président de l'équipe de visiteurs – Visite à venir

- Rapport sur la décision d'agrément du président du Bureau d'agrément à l'intention du doyen au sujet des décisions d'agrément antérieures. Ce rapport peut être accompagné de correspondance pertinente et/ou d'autres documents (p. ex., le rapport demandé par le Bureau d'agrément, les commentaires du doyen, la correspondance relative aux décisions d'agrément, etc.). Le président de l'équipe de visiteurs peut partager cette information avec les membres de son équipe au besoin.
- Commentaires du doyen sur le rapport révisé de l'équipe de visiteurs

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Visiting team chair and selected team members – Previous visit

- Report received from dean in response to a previous accreditation decision requirement.

Observers

See sections 3.6 and 3.7

3.6 Minutes of Accreditation Board meetings

(labelled "AB CONFIDENTIAL")

- "Unapproved" minutes (those signed by the secretary only)
- "Approved" minutes (those approved at the following Accreditation Board meeting signed by the Accreditation Board chair and secretary)

Accreditation Board members

Receive the "unapproved" minutes as soon as possible after the Accreditation Board meeting. The "approved" minutes are kept in the Accreditation Board Secretariat offices. These minutes are provided to Accreditation Board members upon request and to new Accreditation Board members.

Observers at Accreditation Board meetings

Observers in attendance at an Accreditation Board meeting will have access to the dossiers during the meeting only, and they will receive a set of abridged "unapproved" minutes with accreditation actions deleted. Observers who have not attended the meeting may, upon request, receive the abridged "unapproved" minutes with accreditation actions deleted. Other confidential items in the minutes may also be deleted at the discretion of the Accreditation Board chair and/or secretary.

3.7 Agenda and attachments for Accreditation Board meetings

The preliminary agenda is distributed with the invitation to attend the next Accreditation Board meeting. The final agenda is distributed to Accreditation Board members. Observers receive the abridged final agenda with "accreditation action"

Président de l'équipe de visiteurs et membres sélectionnés de l'équipe – Visite précédente

- Rapport reçu du doyen en réponse à une exigence relative à une décision antérieure d'agrément

Observateurs

Voir sections 3.6 et 3.7

3.6 Procès-verbaux des réunions du Bureau d'agrément

(mention « BA – CONFIDENTIEL »)

- Les procès-verbaux « non approuvés » (ceux qui sont signés par le secrétaire seulement)
- Les procès-verbaux « approuvés » (ceux qui ont été approuvés à la réunion suivante du Bureau d'agrément et signés par le président et le secrétaire du Bureau d'agrément)

Membres du Bureau d'agrément

Reçoivent les procès-verbaux « non approuvés » dès que possible après la réunion du Bureau d'agrément. Les procès-verbaux « approuvés » sont conservés aux bureaux des secrétariats d'Ingénieurs Canada et du Bureau d'agrément. Ces procès-verbaux sont fournis sur demande aux membres du Bureau d'agrément, et aux nouveaux membres du Bureau d'agrément.

Observateurs aux réunions du Bureau d'agrément

Les observateurs qui assistent à une réunion du Bureau d'agrément pourront consulter les dossiers seulement pendant la réunion; ils recevront un ensemble abrégé des procès-verbaux « non approuvés » dans lesquels les décisions d'agrément ont été supprimées. Les observateurs qui n'ont pas assisté à la réunion, peuvent recevoir sur demande, un ensemble abrégé des procès-verbaux « non approuvés » (sans les décisions d'agrément). D'autres éléments confidentiels des procès-verbaux peuvent également avoir été supprimés à la discrétion du président et/ou du secrétaire du Bureau d'agrément.

3.7 Ordre du jour et documents des réunions du Bureau d'agrément

L'ordre du jour préliminaire accompagne l'invitation à la prochaine réunion du Bureau d'agrément. L'ordre du jour final est distribué aux membres du Bureau d'agrément. Les observateurs reçoivent l'ordre du jour final et abrégé, dans

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items deleted. Accreditation Board agenda are labelled "AB CONFIDENTIAL".

Attachments to the final agenda are distributed to Accreditation Board members. Observers may receive attachments that are not related to accreditation actions. Attachments are labelled "AB CONFIDENTIAL" where appropriate.

3.8 Public documents

- Accreditation Board accreditation criteria and procedures
- Calendar of Events for Accreditation Visits
- Manual of accreditation procedures
- Questionnaire for Evaluation of an Engineering Program
- Visiting Team Report Template
- General visitor manual

3.9 "OFFICIAL USE" documents

- Includes all other documents not included in 3.1 through 3.7 above
- Distributed on a need-to-know basis
- No confidentiality label

3.10 Destruction of confidential documents

The Accreditation Board requires that all confidential documents (except documents transmitted to the dean and records kept by the Accreditation Board Secretariat) be appropriately destroyed at the end of each accreditation cycle in accordance with the procedures established by the Accreditation Board. These procedures are conveyed to the participants of each accreditation undertaken by the Accreditation Board, and may be revised or updated as required.

4. Rules of confidentiality at Accreditation Board meetings

4.1 General policy statement

"No information relative to accreditation emitting from or received by the Canadian Engineering Accreditation Board is to be transmitted or revealed in writing or by word of mouth by any member of the Accreditation Board, member of an Accreditation Board committee or visiting team, Engineers Canada official or staff, or observer of the Accreditation Board to any other individual or organization, except as specifically permitted".

lequel les décisions d'agrément ont été supprimées. L'ordre du jour final, porte la mention « BA – CONFIDENTIEL ».

Les documents qui accompagnent l'ordre du jour final sont distribués aux membres du Bureau d'agrément. Les observateurs peuvent recevoir les documents sur les questions qui ne touchent pas aux décisions d'agrément. Les documents portent la mention « BA – CONFIDENTIEL » au besoin.

3.8 Documents publics

- Normes et procédures d'agrément du Bureau d'agrément
- Calendrier des étapes pour les visites d'agrément
- Manuel des procédures d'agrément
- Questionnaire pour l'évaluation d'un programme de génie
- Modèle de rédaction du rapport de l'équipe de visiteurs
- Manuel du visiteur général

3.9 Documents « À L'USAGE OFFICIEL »

- Tous les autres documents qui ne figurent pas aux sections 3.1 à 3.7 ci-dessus
- Accès sélectif
- Aucune mention de confidentialité

3.10 Destruction des documents confidentiels

Le Bureau d'agrément exige que tous les documents confidentiels (hormis ceux qui sont acheminés au doyen et les dossiers conservés par le secrétariat du Bureau d'agrément) soient détruits de façon appropriée à la fin de chaque cycle d'agrément, conformément aux procédures du Bureau d'agrément. Ces procédures sont données aux participants de chaque évaluation d'agrément entreprise par le Bureau d'agrément, et peuvent être révisées ou mises à jour, le cas échéant.

4. Règles de confidentialité aux réunions du Bureau d'agrément

4.1 Énoncé de politique général

« Nul renseignement rattaché à l'agrément provenant du Bureau canadien d'agrément des programmes de génie ou reçu par ce bureau ne doit être transmis ni révélé, par écrit ou de vive voix, par un membre quelconque du Bureau d'agrément, d'un comité ou d'une équipe de visiteurs du Bureau d'agrément, ni par un dirigeant ou membre du personnel d'Ingénieurs Canada, un observateur du Bureau d'agrément, à tout autre personne ou organisme, sauf ainsi qu'il aura été expressément autorisé. »

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4.2 Accreditation Board meetings

Observers are those individuals designated by members of Engineers Canada to attend Accreditation Board meetings. Representatives of the Canadian Engineering Qualifications Board, the Canadian Federation of Engineering Students, the Commission des titres d'ingénieur, the signatories of the Washington Accord, and other relevant organizations are also observers.

A duly appointed Accreditation Board member may attend the spring Accreditation Board meeting immediately preceding his/her appointment date, as a "member-elect".

Members of Accreditation Board committees or visiting teams (normally the chair), who are not Accreditation Board members, may be non-voting members "pro-tempore" of the Accreditation Board for agenda items related to their activity. Such persons may be invited to be observers for other agenda items at the discretion of the Accreditation Board chair.

Observers may be in attendance throughout the Canadian Engineering Accreditation Board meeting, or may be required (at the discretion of the Accreditation Board chair) to withdraw from the meeting for the duration of agenda items related to accreditation decisions.

Observers may have access to meeting documents, but such documents shall not be removed from the meeting room without the permission of the Accreditation Board chair.

During portions of some agenda items, a dean/designated official may be in attendance. A separate procedure governs the activities and participation of such individuals at the meeting.

By a majority vote, the Accreditation Board may move into "closed session" for any portion of a meeting. Only Accreditation Board members and the Accreditation Board Secretariat staff may be present during a closed session.

Updated: October 2021

4.2 Réunions du Bureau d'agrément

Les observateurs sont les personnes désignées par les membres d'Ingénieurs Canada afin d'assister aux réunions du Bureau d'agrément. Les représentants du Bureau canadien des conditions d'admission en génie, de la Fédération canadienne des étudiants et étudiantes en génie, la Commission des titres d'ingénieur, les signataires de l'Accord de Washington et d'autres organisations pertinentes agissent également à titre d'observateur.

Un membre dûment nommé du Bureau d'agrément peut, à titre de membre élu, assister à la réunion du printemps du Bureau d'agrément qui précède immédiatement sa date de nomination.

Les membres des comités ou des équipes de visiteurs (en règle générale le président) du Bureau d'agrément qui ne sont pas membres du Bureau d'agrément peuvent être considérés comme membres « temporaires » sans droit de vote du Bureau d'agrément, à l'égard des points à l'ordre du jour rattachés à leur fonction. Le président du Bureau d'agrément peut, à sa discrétion, inviter ces personnes à titre d'observateurs à l'égard d'autres points à l'ordre du jour.

Les observateurs peuvent assister à la totalité de la réunion du Bureau canadien d'agrément des programmes de génie ou peuvent devoir se retirer de la réunion pour la période ayant trait aux points à l'ordre du jour portant sur les décisions d'agrément.

Les observateurs auront accès aux documents de la réunion, mais lesdits documents ne pourront quitter la salle de réunion sans la permission du président du Bureau d'agrément.

En ce qui concerne les discussions à l'égard de certaines portions de points à l'ordre du jour, un doyen ou un représentant dûment nommé peut être présent. Une procédure distincte régit ces activités et la présence de ces personnes aux réunions.

Par vote majoritaire, le Bureau d'agrément pourra invoquer le « huis clos » pour toute partie d'une réunion. Seuls les membres du Bureau d'agrément peuvent assister à une séance à « huis clos ».

Mise à jour : octobre 2021

Appendix 11 Annexe 11

Conflicts of interest guideline

Conflicts of interest are real, perceived or potential situations in which the judgments and actions of individuals, institutions or other entities could be affected because of multiple or competing interests. Such competing interests can make it difficult for someone to fulfill his or her duties impartially. A conflict of interest exists even if no unethical or improper act results from it. A conflict of interest can create an appearance of impropriety that can undermine confidence in the person, the organization he or she represents or the profession.

A conflict of interest may result in the Accreditation Board making a decision that would not be in the best interest of the engineering profession. Conflict under this policy shall be interpreted broadly.

What is defined as a conflict of interest, or the perception of a conflict, can change depending on the circumstances. This is to provide guidance but may not address every possible situation faced by a volunteer acting on behalf of the Accreditation Board.

Disclosure: All members of the Accreditation Board shall disclose all conflicts or perceived conflicts of which they are aware. This means that they will advise the Accreditation Board secretariat of all institutions where they have been a student, faculty or held (or applied for) any appointment at any time in the past, including professional collaborations/research, and will update that information as required during their term(s) on the Board.

A conflict of interest may be deemed to exist or perceived as such when an accreditation visiting team member:

- is a relative or close friend, or have a personal relationship with the applicants, faculty or staff at the faculty offering engineering programs;
- are closely professionally affiliated with faculty or staff, as a result of having in the last six years:
    - frequent and regular interactions with faculty or staff in the course of their duties at their department or institution;
    - been a supervisor or a trainee of faculty or staff;

Lignes directrices sur les conflits d'intérêts

Les conflits d'intérêts sont des situations réelles, apparentes ou potentielles susceptibles d'influencer le jugement et les actes de personnes, d'établissements ou d'autres entités en raison d'intérêts multiples ou divergents. Il peut alors être difficile pour quelqu'un de s'acquitter de ses fonctions de façon impartiale. Un conflit d'intérêts existe même si aucun acte non éthique ni aucune irrégularité n'en découlent. Le conflit d'intérêts peut créer une apparence d'irrégularité susceptible de miner la confiance envers la personne, l'organisation qu'elle représente ou la profession.

Un conflit d'intérêts peut amener le Bureau d'agrément à prendre une décision qui ne soit pas dans le meilleur intérêt de la profession. Le conflit au sens de la présente politique doit être interprété de façon générale.

Le conflit d'intérêts tel qu'on le définit ou la perception de conflit d'intérêts peuvent changer selon les circonstances. L'objectif est ici de fournir une ligne de conduite, non d'aborder chacune des situations possibles auxquelles est confronté le bénévole agissant pour le compte du Bureau d'agrément.

Divulgation : Les membres du Bureau d'agrément sont tenus de divulguer tout conflit, réel ou perçu, dont ils sont conscients. Plus précisément, ils doivent indiquer au secrétariat du Bureau d'agrément tous les établissements où ils ont déjà étudié, enseigné, occupé un poste ou posé leur candidature à un poste quelconque, y compris pour de la collaboration ou de la recherche professionnelles, et actualiser ces informations pendant toute la durée de leur(s) mandat(s) au Bureau d'agrément.

Un conflit d'intérêts peut être avéré ou perçu comme tel lorsqu'un membre d'une équipe de visiteurs :

- est parent ou ami ou a un lien personnel avec les demandeurs ou les membres du corps professoral ou du personnel de la faculté offrant les programmes de génie.
- a un lien professionnel étroit avec des membres du corps professoral ou du personnel, étant donné qu'il a, au cours des six dernières années :
    - eu des interactions fréquentes et régulières avec le corps professoral ou le personnel dans le cadre de fonctions exercées au sein du département ou de l'établissement;
    - été le superviseur ou le stagiaire d'un membre du corps professoral ou du personnel;

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- collaborated, published or shared funding with faculty or staff, or have plans to do so in the immediate future; or
- been employed by the institution being visited
- feel for any reason unable to provide an impartial review of the program.

Unavoidable Conflict: Notwithstanding the guidelines above, a particular individual's conflict of interest may be determined to be unavoidable if, for example, the individual's qualifications, knowledge, and experience are particularly valuable to the accreditation visit in question and the Accreditation Board is unable to identify another individual with comparable qualifications, knowledge, and experience who does not also have a conflict of interest and who is able to participate on the visit in a timely fashion. In that case, the conflict must be disclosed to the institution being visited, and consent of the institution for that visitor to participate on the accreditation visit must be obtained.

In any case of potential conflict, final determination of the person's eligibility to participate on the visit is made by the Accreditation Board Executive Committee in consultation with the Accreditation Board Secretariat.

Effective June 3, 2017

- collaboré, fait des publications ou partagé des fonds avec des membres du corps professoral ou du personnel ou prévu de le faire prochainement;
- été employé par l'établissement faisant l'objet d'une visite.
- estime, pour une raison quelconque, ne pas être en mesure de fournir une évaluation impartiale du programme visé.

Conflit inévitable : malgré la ligne directrice ci-dessus, le conflit d'intérêts peut s'avérer inévitable si, par exemple, les qualifications, les connaissances et l'expérience d'une personne en particulier la rendent tout particulièrement compétente pour participer à la visite d'agrément en question et que le Bureau d'agrément ne réussit pas à trouver une autre personne au bagage semblable qui ne présente aucun conflit d'intérêts et qui peut participer à la visite à la date prévue. Dans ce cas, il faut informer l'établissement de ce conflit et obtenir son consentement quant à la participation de la personne en question à la visite d'agrément.

Dans tous les cas de conflit potentiel, la décision finale quant à l'admissibilité de la personne à participer à la visite est prise par le comité exécutif du Bureau d'agrément en collaboration avec le secrétariat du Bureau.

En vigueur le 3 juin 2017

Appendix 12 Annexe 12

CEAB Complaints Policy

1. Scope

1.1. This policy has been developed to handle and direct the receipt of complaints about a CEAB-accredited engineering program, or a program which has a current application for initial accreditation pending.

1.2. The CEAB will consider only those complaints which address a program's compliance with CEAB accreditation criteria or established accreditation policies.

2. Purpose

2.1. This policy is intended to:

2.1.1. provide direction to individuals who wish to submit a complaint about a CEAB-accredited engineering program or a program which has a current application for accreditation pending; and

2.1.2. provide direction to the CEAB and its Secretariat on how to handle the receipt of such complaints.

3. Policy

3.1. As a first step, complainants should attempt resolution through the program in question's internal complaint resolution mechanism, if any, before initiating a complaint with the CEAB.

3.2. The CEAB is limited to considering information that will assist it to assess the academic engineering program in question. It will review and consider complaints made by persons only insofar as they relate to one or more of the Engineers Canada accreditation criteria or accreditation procedures. The CEAB will not intervene on behalf of individuals or act as an adjudicator in matters of admission or in any labour or employment issues, including but not limited to appointments, promotions or dismissals involving faculty, staff or students

3.3. The CEAB will not take any action on complaints which it receives verbally

Politique du BCAPG en matière de plaintes

1. Portée

1.1. Cette politique a été élaborée en vue d'orienter la réception et le traitement des plaintes formulées au sujet d'un programme de génie agréé par le BCAPG ou d'un programme dont la première demande d'agrément est en instance.

1.2. Le BCAPG examinera uniquement les plaintes relatives à la conformité d'un programme aux normes ou politiques d'agrément établies par le BCAPG.

2. Objet

2.1. Cette politique vise à :

2.1.1. Fournir des orientations aux personnes qui souhaitent déposer une plainte au sujet d'un programme de génie agréé par le BCAPG ou d'un programme dont la demande d'agrément est en instance ;

2.1.2. Fournir au BCAPG et à son secrétariat des orientations sur le traitement des plaintes reçues.

3. Politique

3.1. Comme première étape, les plaignants devraient avoir recours au processus interne de résolution des plaintes du programme en question, s'il en existe un, avant de déposer une plainte auprès du BCAPG.

3.2. Le BCAPG se limitera à examiner l'information qui l'aidera à évaluer le programme universitaire en question. Il étudiera les plaintes reçues seulement dans la mesure où ces plaintes se rapportent à une ou plusieurs des normes ou procédures d'agrément d'Ingénieurs Canada. Le BCAPG n'interviendra pas au nom de personnes, ni n'agira comme juge dans des questions d'admission, de travail ou d'emploi concernant notamment des nominations, promotions ou congédiements visant des enseignants, des employés ou des étudiants.

3.3. Le BCAPG ne traitera pas les plaintes formulées verbalement.

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3.4. Anonymous complaints are not accepted.

3.5. The CEAB, upon request, will take every reasonable precaution to prevent disclosure of the complainant's identity to the program or any individual(s) who is the subject of the complaint; however, the CEAB cannot guarantee confidentiality and in some cases, the nature of the complaint will give away the identity of the complainant

3.6. When an inquiry about filing a complaint is received by the CEAB Secretariat, the CEAB, or a program visitor, the inquirer will be provided with a copy of this Complaints Policy.

4. Procedure

4.1. All published institutional grievance policies must be pursued and exhausted by those issuing complaints before the complaint can be reviewed by the CEAB executive committee. The complainant(s) should demonstrate that reasonable efforts have been made to resolve the complaint per the institution's grievance policies. Additional documentation may be requested to support the complainant's reasonable efforts.

4.2. After the CEAB Secretariat is confident that all institutional channels for grievance have been exhausted, the letter of complaint is forwarded to the CEAB executive committee to determine if the complaint is a relevant allegation as related to the CEAB criteria.

4.3. If the CEAB executive committee determines that the complaint relates to a relevant allegation, the CEAB Secretariat will send a copy of the complaint to the program and requesting a response within 30 days. The CEAB secretariat will send a letter outlining the status of the complaint to the complainant(s) requesting any additional documentation and informing the complainant(s) that all documentation and institutional response will be reviewed at the next CEAB face to face meeting. If the complaint is determined not be a relevant allegation relating to the criteria, the complainant will be notified that no action can be taken by the CEAB.

3.4. Les plaintes anonymes ne seront pas acceptées.

3.5. Le BCAPG prendra, sur demande, toutes les précautions raisonnables pour empêcher la divulgation de l'identité d'un plaignant au responsable du programme ou à toute personne visée par une plainte ; le BCAPG ne peut toutefois pas garantir la confidentialité ; dans certains cas, la nature même d'une plainte révélera l'identité du plaignant.

3.6. Lorsque le secrétariat du BCAPG, le BCAPG, ou un visiteur de programme reçoit une demande d'information sur la façon de déposer une plainte, on doit fournir une copie de la présente politique au demandeur.

4. Procédure

4.1. Le plaignant doit avoir utilisé et épuisé toutes les politiques institutionnelles publiées en matière de plaintes avant que sa plainte ne soit examinée par le comité exécutif du BCAPG. Le plaignant devrait démontrer qu'il a fait des efforts raisonnables pour résoudre la plainte conformément aux politiques pertinentes de l'établissement d'enseignement. De la documentation supplémentaire pourrait être requise à l'appui des efforts raisonnables du plaignant

4.2. Une fois que le secrétariat du BCAPG est convaincu que tous les processus de règlement des plaintes de l'établissement d'enseignement ont été épuisés, la lettre de plainte est acheminée au comité exécutif du BCAPG, qui déterminera s'il s'agit d'une allégation pertinente se rapportant aux normes du BCAPG.

4.3. Si le comité exécutif du BCAPG détermine que la plainte constitue une allégation pertinente, le secrétariat du BCAPG enverra une copie de la plainte au responsable du programme, en exigeant une réponse dans les 30 jours. Le secrétariat du BCAPG enverra par ailleurs au plaignant une lettre décrivant l'état de sa plainte, lui demandant de la documentation supplémentaire et l'informant que cette documentation et la réponse de l'établissement seront examinées lors de la prochaine réunion en personne du BCAPG. S'il détermine que la plainte ne constitue pas une allégation pertinente se rapportant aux normes d'agrément, le comité exécutif avisera le plaignant qu'aucune mesure ne peut être prise par le BCAPG.

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4.4. The CEAB, upon review of all submitted documentation, will determine if the program is in non-compliance with the criteria, according to the complaint. The following actions are available to The CEAB may make any of the following determinations:

4.4.1. No action is required because non-compliance with the criteria could not be established. A letter to the complainant(s) and the institution will summarize the disposition of the complaint;

4.4.2. Non-compliance is established, and the CEAB will request of the program a plan of action and appropriate progress report(s) to address criteria not met or administers corrective action relevant to accreditation policy(ies). A letter to the complainant(s) will summarize the disposition of the complaint; or

4.4.3. Other appropriate actions, as determined by the CEAB and consistent with CEAB policy.

5. Definitions

5.1. **Complaint** is defined as an expression of dissatisfaction related to an engineering program's compliance with CEAB accreditation criteria or established accreditation policies.

5.2. **Anonymous complaint** is defined as a complaint filed by an individual who has elected to keep his or her identify confidential to the CEAB and to the program.

5.3. **CEAB executive committee** is composed of the chair, vice-chair and past chair of the CEAB

Effective June 2019

4.4. Après avoir examiné toute la documentation fournie, le BCAPG déterminera si le programme est en situation de non-conformité aux normes, tel qu'allégué par le plaignant. Le BCAPG peut rendre les décisions suivantes:

4.4.1. Aucune intervention n'est requise, car la non-conformité aux normes n'a pas pu être établie. Une lettre adressée au plaignant et à l'établissement résumera l'issue de la plainte ;

4.4.2. La non-conformité est établie, et le BCAPG demandera au responsable du programme de lui fournir un plan d'action et des rapports d'avancement appropriés pour corriger la situation, ou prendra des mesures correctives pertinentes conformément aux politiques en matière d'agrément. Une lettre adressée au plaignant résumera l'issue de la plainte ; ou

4.4.3. D'autres mesures appropriées seront prises, telles que déterminées par le BCAPG conformément à sa politique.

5. Définitions

5.1. **Plainte** : expression d'insatisfaction concernant la conformité d'un programme de génie aux normes ou politiques d'agrément établies par le BCAPG.

5.2. **Plainte anonyme** : plainte déposée par une personne qui a choisi de taire son identité au BCAPG et au responsable du programme d'études.

5.3. **Comité exécutif du BCAPG** : instance composée du président, du vice-président et du président sortant du BCAPG.

En vigueur en juin 2019

Appendix 13 Annexe 13

Program development advisory procedure

Three procedures are available for Higher Education Institutions to get support from the Accreditation Board and Secretariat to provide advice when making changes in engineering educational delivery:

- informal communication by phone, email or meeting,
- curriculum assessment, and
- informal visit.

These procedures are strictly advisory in nature, and are not a mandatory part of the accreditation process. Institutions developing new programs, new options, or making other changes to program delivery may make use of any of these advisory opportunities.

Informal communication

Informal phone calls, emails, meetings, and other communication with the CEAB Secretariat at Engineers Canada provides support to the HEIs. This communication is documented by the Secretariat. The institution may provide this information to the CEAB visit chair when considering accreditation issues.

Members of the CEAB are not involved in this type of consultation.

Curriculum assessment

Upon HEI request, a subcommittee of CEAB members (minimum 3 constituents, may consist of immediate past members of CEAB) could review documentation or meet with representatives of HEIs either in person or by teleconference to provide additional guidance with respect to accreditation for program innovations. Neither the proposals made by the HEIs nor the advice by the subcommittee are binding: the HEIs may choose not to go forward with the plans, change plans based on feedback, or ignore the feedback and proceed with planning. The proposals will not trigger any change in the HEI's accreditation status.

If a new program is being developed, a curriculum report should be submitted by the HEI after the program has been approved by the engineering faculty and after approval of the university senate. The curriculum report will consist of the appropriate parts of the

Procédure consultative pour l'élaboration des programmes

Les établissements d'enseignement supérieur (EES) disposent de trois procédures pour obtenir le soutien et les conseils du Bureau d'agrément et de son secrétariat lorsqu'ils envisagent d'apporter des changements à la prestation de la formation en génie :

- Communication informelle par téléphone, par courriel ou dans le cadre d'une rencontre
- Évaluation des programmes
- Visite informelle

Ces procédures sont de nature strictement consultative et ne sont pas obligatoires dans le cadre du processus d'agrément. Les EES qui élaborent de nouveaux programmes ou de nouvelles options, ou qui apportent d'autres changements à la prestation des programmes peuvent se servir de ces procédures consultatives.

Communications informelles

Les EES peuvent obtenir le soutien du secrétariat du BCAPG au moyen d'appels téléphoniques, de courriels, de rencontres ou d'autres contacts informels. Ces communications sont documentées par le secrétariat. L'EES peut fournir l'information obtenue au président de l'équipe de visiteurs du Bureau d'agrément lors de l'examen des questions relatives à l'agrément.

Les membres du Bureau d'agrément ne participent pas à ce genre de consultation.

Évaluation des programmes

À la demande d'un EES, un sous-comité de membres du Bureau d'agrément (représentant au moins trois organismes de réglementation et pouvant être constitué de membres sortants du Bureau d'agrément) peut examiner la documentation ou rencontrer des représentants de l'EES, en personne ou par téléconférence, pour fournir des conseils supplémentaires concernant l'agrément des innovations visant un programme. Ni les propositions faites par l'EES, ni les conseils du sous-comité n'ont force exécutoire : l'EES peut choisir de ne pas donner suite à ses plans de changement, de les modifier en fonction des commentaires reçus, ou de ne pas tenir compte des commentaires et de poursuivre la planification des innovations. Les propositions n'entraîneront aucun changement dans le statut d'agrément du programme de l'EES.

Lorsqu'un nouveau programme est élaboré, l'EES devrait soumettre un rapport sur le programme une fois que le programme a été approuvé par la faculté de génie et l'assemblée de l'université. Le rapport sur le programme doit comprendre les

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Questionnaire for Evaluation of an Engineering Program which deal with the identification of the institution and program, including, but not limited to:

- a detailed description of the change being considered,
- curriculum content analysis encompassing course information, graduate attribute mapping, and improvement processes,
- proposed timelines for implementing the change, including information on when graduates of the changed program are expected, and
- if applicable, updated curriculum content tables showing changes in AU.

The information should be complete enough to perform a minimum path analysis. A subcommittee of CEAB members will examine the curriculum report, and the findings are will be submitted to the institution by the Secretariat. The results of the curriculum analysis may be shared with the CEAB visiting chair if the HEI chooses.

As development of an existing program progresses (including implementation of innovative educational changes which may or may not lead to significant changes), the HEI could provide the CEAB with a brief (two to four pages) overview summary of changes considered to their program. A subcommittee of CEAB members will review the submission, and respond in writing. Any concerns the CEAB has regarding significant changes will be clearly stated in the response, so plans for mitigation can be instituted before a Notice of Significant Change is submitted. If necessary, a curriculum report may be requested if more information is needed. This notice of intent will not affect the HEI's existing accreditation status and duration. Meetings with the subcommittee can occur as needed.

A team of Accreditation Board members examines the curriculum report and the findings are submitted to the institution by the Secretariat. The HEI may include the subcommittee's response in the material provided to visitors for the next accreditation visit.

sections pertinentes du Questionnaire pour l'évaluation d'un programme de génie qui portent sur l'identification de l'EES et du programme, notamment :

- Une description détaillée du changement envisagé
- L'analyse du contenu du programme, comprenant l'information sur les cours, la mise en correspondance des qualités requises des diplômés et les processus d'amélioration
- Le calendrier proposé pour la mise en œuvre du changement, y compris l'année de promotion des étudiants inscrits au programme faisant l'objet du changement.
- S'il y a lieu, des tableaux actualisés du contenu du programme indiquant les changements touchant les unités d'agrément (UA).

L'information devrait être suffisamment complète pour permettre une analyse du cheminement minimum. Un sous-comité de membres du Bureau d'agrément examinera le rapport sur le programme, et le secrétariat du Bureau soumettra les conclusions du sous-comité à l'EES. Si l'EES le désire, les résultats de l'analyse du programme seront communiqués au président de l'équipe de visiteurs du Bureau d'agrément.

Au fur et à mesure du perfectionnement d'un programme (comprenant la mise en œuvre de changements pédagogiques novateurs qui peuvent ou non mener à des changements importants), l'EES peut fournir au Bureau d'agrément un bref aperçu (de deux à quatre pages) des changements envisagés. Un sous-comité de membres du Bureau d'agrément examinera le rapport et répondra par écrit. Le cas échéant, les préoccupations du Bureau d'agrément concernant les changements importants seront clairement indiquées dans la réponse, afin que des plans d'atténuation puissent être établis avant qu'un Avis de changements importants ne soit soumis. Au besoin, un rapport sur le programme peut être demandé si des renseignements supplémentaires sont nécessaires. Cet avis d'intention n'aura aucune incidence sur le statut d'agrément ni sur la durée de l'agrément du programme de l'EES. Des rencontres avec le sous-comité peuvent se tenir au besoin.

Une équipe de membres du Bureau d'agrément examine le rapport du programme et les conclusions sont présentées à l'EES par le secrétariat. L'EES peut inclure la réponse du sous-comité dans la documentation fournie aux visiteurs lors de la prochaine visite d'agrément.

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Informal visit

The Accreditation Board Secretariat can assist HEIs in arranging informal visits of new programs, or programs undergoing significant changes. This visit will typically occur when the first students are in the two or three years of the program. The Secretariat could provide the institution with a list of recent past Accreditation Board members to contact to undertake this evaluation; the Secretariat does not contact the members. The institution and evaluator(s) agree on the timing, format, and desired outcomes of the informal visit.

The Accreditation Board Secretariat will supply the HEI and the evaluator(s) with any required documentation, including copies of the current accreditation criteria and procedures document, the questionnaire for evaluation of engineering programs, the visiting team report manual, and any communication from the informal consultations or curriculum assessment.

The informal visit report prepared by the evaluator(s) is the property of the HEI and is not shared or submitted to any other body unless the HEI explicitly consents to sharing the contents.

All travel expenses incurred by the evaluator(s) during an informal visit (including hotel, meals, transportation, and incidentals) are to be paid by the HEI requesting the visit. The institution will reimburse the evaluator(s) directly for such expenses.

Conclusion

Obtaining program development advisory services is completely voluntary on the part of the HEI. Members of the CEAB who provide advisory services will not participate on the team making the next accreditation visit to the program.

Visite informelle

Le secrétariat du Bureau d'agrément peut aider les EES à organiser des visites informelles visant les nouveaux programmes ou les programmes faisant l'objet de changements importants. Ces visites informelles se tiennent généralement quand les premiers étudiants inscrits en sont à la deuxième ou à la troisième année du programme. Le secrétariat peut fournir à l'EES une liste de membres sortants du Bureau d'agrément à contacter pour effectuer cette évaluation; le secrétariat ne contacte pas lui-même les membres. L'EES et l'évaluateur (ou les évaluateurs) s'entendent sur le moment, le format et les résultats souhaités de la visite informelle.

Le secrétariat du Bureau d'agrément fournira à l'EES et à l'évaluateur la documentation nécessaire, notamment les normes et procédures d'agrément en vigueur, le Questionnaire pour l'évaluation d'un programme de génie, le Manuel de rédaction du rapport de l'équipe de visiteurs, ainsi que toute communication découlant des consultations informelles ou de l'évaluation du programme.

Le rapport de la visite informelle préparé par l'évaluateur appartient à l'EES et n'est communiqué à aucune autre instance, à moins que l'EES n'y consente explicitement.

Tous les frais de voyage encourus par l'évaluateur pendant la visite informelle (y compris, l'hôtel, les repas, les déplacements ainsi que les frais accessoires) doivent être payés par l'EES ayant demandé la visite. L'EES doit rembourser l'évaluateur directement pour ces dépenses.

Conclusion

L'obtention de services consultatifs pour l'élaboration d'un programme est une démarche entièrement volontaire de la part d'un EES. Les membres du Bureau d'agrément qui fournissent ces services ne feront pas partie de l'équipe qui effectuera la prochaine visite d'agrément du programme.

Appendix 14 Annexe 14

Procedures for Engineers Canada substantial equivalency evaluations

Introduction

Engineers Canada is the national organization of the 12 provincial and territorial associations that regulate the profession of engineering in Canada. In Canada, each province and territory requires by law that engineers obtain registration where they intend to perform engineering services. Those individual associations are Engineers Canada's regulators. They are autonomous and are responsible for registration of engineers in their province or territory. Although Engineers Canada has no authority over its members, it works co-operatively with them to ensure the highest standard of engineering education, professional qualifications and ethical conduct.

Since 1965, evaluations of university engineering education programs leading to baccalaureate degrees in Canada have been conducted by the Accreditation Board. Evaluations are performed upon request by the institutions granting the degrees. If a program meets the accreditation criteria, it is granted the label of "Accreditation Board-Accredited Program". Graduates of accredited programs are deemed to meet the academic requirements for registration with one of the regulators.

In 1997, Engineers Canada expanded the Accreditation Board's mandate to include the evaluations of engineering programs outside of Canada. These evaluations are called "Substantial Equivalency" evaluations.

Substantial equivalency

"Substantial equivalency" means comparable in program content and educational experience. It implies reasonable confidence that the graduates possess the academic competencies needed to begin professional practice at the entry level, but such programs may not be absolutely identical.

A Substantial Equivalency evaluation will follow policies and procedures similar to those used for accreditation, but no accreditation action will be taken, nor will there be any inference that a program is undergoing accreditation or will be accredited as a result of such a review. The term "accreditation" or "accredited" is reserved for Canadian programs, whereas the term "substantial equivalency/ substantially equivalent" is used in relation to

Procédures s'appliquant aux évaluations d'équivalence substantielle d'Ingénieurs Canada

Introduction

Ingénieurs Canada est l'organisme national regroupant les 12 ordres provinciaux et territoriaux qui réglementent la profession d'ingénieur au Canada. Au Canada, les dispositions législatives provinciales et territoriales exigent que les ingénieurs soient titulaires d'un permis d'exercice du génie de la province ou du territoire où ils comptent exercer. Ces ordres, les membres constituants d'Ingénieurs Canada, sont autonomes et chargés de l'inscription des ingénieurs dans leur province/territoire. Bien qu'il n'exerce aucun pouvoir sur ses membres, Ingénieurs Canada collabore avec eux afin d'assurer le respect des normes les plus rigoureuses en matière de formation en génie, de compétences professionnelles et de déontologie.

Depuis 1965, l'évaluation des programmes universitaires de formation en génie menant à un diplôme de baccalauréat au Canada est effectuée par le Bureau d'agrément. Ces évaluations sont réalisées à la demande des établissements d'enseignement qui décernent ces diplômes. S'il répond aux normes d'agrément, le programme reçoit le titre de « Programme agréé par le Bureau d'agrément ». Les diplômés de programmes agréés sont réputés répondre aux exigences de formation requises pour obtenir un permis d'exercice du génie au Canada attribué par l'un des organismes de réglementation du génie.

En 1997, Ingénieurs Canada a élargi le mandat du Bureau d'agrément pour y inclure l'évaluation de programmes de génie dispensés par des établissements étrangers. Il s'agit alors d'évaluations dites « d'équivalence substantielle ».

Équivalence substantielle

L'expression « équivalence substantielle » signifie que le contenu d'un programme et l'expérience éducative sont comparables à ceux d'un programme canadien agréé, mais que ces programmes ne sont peut-être pas tout à fait identiques. Cela laisse supposer que l'on a raisonnablement confiance que les diplômés possèdent les connaissances universitaires nécessaires pour commencer à exercer leur profession au niveau d'entrée.

Une évaluation d'équivalence substantielle suit les mêmes politiques et procédures que celles utilisées pour l'agrément, mais aucune mesure d'agrément ne sera prise, et on ne conclura pas non plus qu'un programme est en cours d'agrément ou qu'il sera agréé à la suite de cette évaluation. Les termes « agrément » ou « agréé » sont réservés aux programmes canadiens, tandis que les termes « équivalence substantielle » et « substantiellement

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evaluations outside of Canada. In the case where an institution outside Canada wants to have a program recognized on a substantial equivalency basis, a specific request should be addressed to the Accreditation Board secretary, at Engineers Canada, who will in turn submit the request to the Accreditation Board.

Procedures

In order to be considered for evaluation, a program must meet already accepted standards in multi-lateral forums, such as a minimum number of 16 years of schooling prior to the granting of an undergraduate level or equivalent diploma. As a general rule, Engineers Canada will review programs offered in any language provided that documentation can be provided in either English or French and that a sufficient number of people in charge of the program can express themselves reasonably well in one of these two languages. Translation and related services must be judged adequate to allow an appropriate review despite language differences.

Applicable documents

Except as noted in this document and as necessary to adapt to local conditions, international evaluations will be guided by the criteria and procedures for accrediting Canadian engineering education programs as published in the most recent Accreditation Criteria and Procedures report.

The procedures for substantial equivalency process initiation and formation of the visiting team are outlined in this document. The applicable documents are as follows:

1. Current Accreditation Board *Accreditation Criteria and Procedures* (available on the Engineers Canada website)

2. Request for substantial equivalency evaluation (form available from the Accreditation Board secretariat on request).

3. Completion of the self-study *Questionnaire for Evaluation of an Engineering Program*. The completed Questionnaire must be received by visiting team members no later than two months prior to the date of the on-site visit.

Note that a more detailed example of timelines is included in appendix 14-A to this guideline. In addition, a sample visit schedule is available on the Engineers Canada website under “Accreditation Board Supplementary Documents”.

équivalent » s’appliquent aux évaluations de programmes offerts à l’extérieur du Canada. L’établissement étranger qui souhaite qu’un programme soit reconnu comme étant substantiellement équivalent doit présenter une demande expresse en ce sens au secrétariat du Bureau canadien d’agrément des programmes de génie, demande qui sera ensuite transmise au Bureau.

Procédures

Pour qu’il puisse faire l’objet d’une évaluation, un programme doit déjà répondre aux normes reconnues dans les forums multilatéraux, comme un nombre minimum de 16 années de scolarité avant l’obtention du baccalauréat ou d’un diplôme équivalent. En règle générale, Ingénieurs Canada étudiera les programmes offerts dans n’importe quelle langue, pourvu que l’on puisse fournir de la documentation en français ou en anglais et qu’un nombre suffisant de personnes responsables du programme puissent s’exprimer raisonnablement bien dans l’une de ces deux langues. La traduction et les services connexes doivent être de qualité suffisante pour permettre une évaluation adéquate malgré les différences linguistiques.

Documents pertinents

Sauf dans les cas mentionnés dans le présent document et lorsqu’il est nécessaire de s’adapter à la réalité locale, les évaluations internationales sont réalisées en fonction des normes et des procédures qui s’appliquent à l’agrément des programmes de génie canadiens, dont la liste figure dans le plus récent Rapport sur les normes et les procédures d’agrément.

Les procédures d’amorce du processus d’évaluation d’équivalence substantielle et de formation de l’équipe de visiteurs sont énoncées dans le présent document. Les documents pertinents sont les suivants:

1. Version la plus récente des *Normes et procédures d’agrément* du Bureau d’agrément (accessible dans le site Web d’Ingénieurs Canada).

2. Demande d’évaluation d’équivalence substantielle (formulaire accessible sur demande auprès du secrétariat du Bureau d’agrément).

3. *Questionnaire pour l’évaluation d’un programme de génie*. Ce questionnaire d’auto-évaluation doit être rempli par l’établissement et renvoyé au secrétariat du Bureau d’agrément au plus tard deux mois avant la date de la visite sur place.

Un exemple de calendrier détaillé est présenté à l’annexe 14-A de ce guide. De plus, un exemple d’horaire de visite est disponible sur le site Web d’Ingénieurs Canada sous la rubrique « Documents complémentaires du Bureau d’agrément ».

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Process initiation

Engineers Canada recommends that the institution arrange, through the Accreditation Board secretary, for a preliminary visit by a representative of the Accreditation Board, prior to submitting a formal request for a review. The purpose of such a visit would be to discuss any questions regarding the criteria for a substantial equivalency evaluation, the visit process, the documentation required and other issues. The results of the preliminary visit will assist the parties in determining if a review should be considered. If requested, Engineers Canada can also arrange to provide a workshop to the institution on the process and how to complete the documentation. The costs associated with a preliminary visit and/or workshop are to be agreed upon by the parties prior to the preliminary visit and/or workshop.

An institution wishing to have (a) program(s) reviewed may request such review in writing to the Accreditation Board secretary at Engineers Canada. The Accreditation Board secretary will consult with the Accreditation Board chair, and the secretary, International Committee to recommend on whether to proceed further with the application. The final decision to proceed will be made by the Accreditation Board.

If the decision is to proceed, the visiting team going on-site on behalf of Engineers Canada shall then be constituted by the chair of the Accreditation Board working with the Accreditation Board secretary. The Accreditation Board secretary shall ensure that relevant information is given to the host institution and shall advise that the self-study questionnaire must be completed and returned to the Accreditation Board secretary no later than two months prior to the date of the on-site visit. A formal proposal outlining the costs related to the evaluation will be provided to the host institution, and must be signed prior to further steps being taken. The template of a proposal is attached as appendix 14-A to this document.

Selection of visiting team

Following acceptance of a specific request, the Accreditation Board chair and secretary, will jointly propose the visiting team chair and visiting team membership. The appointed team chair should normally be an Accreditation Board member or recent past-member. The Accreditation Board secretary will advise the institution of the make-up of the team. Whenever possible, selection shall be made from the current list of experienced Accreditation Board evaluators and members. The Accreditation Board secretary will confirm that there is no conflict of interest for any visitor.

Amorce du processus

Ingénieurs Canada recommande que l'établissement d'enseignement organise, par l'entremise du secrétariat du Bureau d'agrément, une visite préliminaire d'un représentant du Bureau d'agrément, et ce, avant de présenter une demande officielle d'évaluation. Le but de cette visite est de discuter de toutes les questions relatives aux normes s'appliquant à l'évaluation d'équivalence substantielle, à la procédure à suivre pour la visite, aux documents nécessaires et à d'autres questions. Les résultats de cette visite préliminaire aideront les parties à déterminer s'il y a lieu de procéder à une évaluation. Ingénieurs Canada peut aussi, sur demande, prendre des dispositions pour organiser un atelier visant à expliquer le processus et à indiquer à l'établissement comment remplir la documentation. Les coûts liés à une visite préliminaire et/ou à un atelier doivent être établis et acceptés par les deux parties avant la visite et/ou l'atelier.

L'établissement d'enseignement qui souhaite faire évaluer un ou plusieurs de ses programmes peut en faire la demande par écrit auprès du secrétariat du Bureau canadien d'agrément des programmes de génie. Le secrétariat du Bureau d'agrément consultera alors le président du Bureau et le secrétariat du Comité international, afin de déterminer s'il y a lieu de poursuivre la démarche. La décision finale à cet égard sera prise par le Bureau d'agrément.

Si l'on décide de poursuivre la démarche, l'équipe internationale devant représenter Ingénieurs Canada sera alors constituée par le président du Bureau d'agrément, en collaboration avec le secrétariat. Le secrétariat du Bureau d'agrément veillera alors à transmettre les renseignements pertinents à l'établissement d'accueil et l'informera qu'il doit remplir le questionnaire d'auto-évaluation et le retourner au secrétariat du Bureau d'agrément, au plus tard deux mois avant la date de la visite. Une proposition officielle indiquant les coûts liés à l'évaluation sera fournie à l'établissement d'accueil, qui devra la signer avant que d'autres étapes soient exécutées. Un modèle de proposition est présenté à l'annexe 14-A du présent document.

Sélection de l'équipe de visiteurs

Une fois qu'une demande précise a été acceptée, le président et le secrétariat du Bureau d'agrément proposent ensemble le président et les membres de l'équipe de visiteurs. La personne choisie comme président de l'équipe doit normalement être un membre ou un ex-membre du Bureau d'agrément. Le secrétariat du Bureau d'agrément avise alors l'établissement d'enseignement de la composition de l'équipe. Dans la mesure du possible, la sélection s'effectue à partir de la liste actuelle des évaluateurs et membres expérimentés du Bureau d'agrément. Le secrétariat du Bureau d'agrément veillera à ce qu'aucun visiteur ne soit placé en situation de conflit d'intérêts.

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The team normally consists of a chair, a vice-chair and one program visitor per program being evaluated. In situations where the country is developing its own accreditation system, the country may wish to request additional accreditation experts, typically drawn from the Accreditation Board membership, to accompany the team in an advisory or training role. The associated costs of these additional team members will also be borne by the institution. Translation services will be required by the visiting team when it is conducting its evaluation of the program(s).

Pre-visit documentation

In addition to the Accreditation Board's Questionnaire for Evaluation of an Engineering Program, institutions may be requested to provide information regarding:

- the primary and secondary school systems leading to eligibility to attend engineering programs at the university level, such as types of pre-university education, and national examinations/leaving certificates, etc.
- types of post-secondary institutions and the framework within which university-level engineering programs exist, including descriptions of applicable legislation/ regulations, funding sources and governance, including decision-making responsibilities
- the framework within which professional engineering exists, including applicable legislation/regulations, governance of the profession, recognition of professional engineers and approaches to enforcement

Evaluation process

To the extent possible, the team chair will follow visit procedures applicable to Accreditation Board visits with due consideration given to the cultural sensitivities and unique circumstances of the institution being evaluated. The evaluation process will include:

- completion of a self-study questionnaire by the institution being visited,
- an on-site visit lasting a minimum of three days at the end of which there will be an oral report by the team to convey its initial findings
- a written report provided to the institution approximately four to six weeks after the visit.

L'équipe de visiteurs est normalement composée d'un président et d'un vice-président, ainsi que d'un évaluateur de programmes pour chaque programme à évaluer. Les pays qui sont en train de créer leur propre système d'agrément pourraient demander que d'autres experts en agrément, provenant généralement du Bureau d'agrément, accompagnent l'équipe à titre de conseillers ou de formateurs. Les coûts connexes à la présence de ces experts sont également à la charge de l'établissement d'enseignement. Des services de traduction seront nécessaires à l'équipe de visiteurs lors de l'évaluation du ou des programmes.

Documentation préalable à la visite

En plus de demander à l'établissement de remplir le Questionnaire en vue de l'évaluation d'un programme de génie du Bureau d'agrément, on pourrait lui demander de fournir des renseignements au sujet de ce qui suit :

- les systèmes d'enseignement primaire et secondaire menant à l'admissibilité aux programmes de génie de niveau universitaire, comme le genre de formation préuniversitaire, les examens nationaux ou certificats d'études, etc.
- les genres d'établissements d'enseignement postsecondaire et le cadre dans lequel existent les programmes de génie de niveau universitaire, notamment la description des lois ou des règlements applicables, les sources de financement et la gouvernance, ainsi que les personnes chargées de la prise de décisions
- le cadre dans lequel évolue la profession d'ingénieur, notamment les lois et les règlements applicables, la gouvernance de la profession, la reconnaissance des ingénieurs de profession et les méthodes utilisées pour faire respecter les lois

Processus d'évaluation

Dans la mesure du possible, le président de l'équipe suivra les procédures qui s'appliquent aux visites d'agrément, en tenant compte des différences culturelles et du caractère unique de l'établissement d'enseignement faisant l'objet de l'évaluation. Le processus d'évaluation comprendra les étapes suivantes :

- L'établissement visité remplira un questionnaire d'auto-évaluation.
- L'équipe procédera à une visite sur les lieux d'une durée minimale de trois jours, à l'issue de laquelle l'équipe présentera un rapport verbal faisant état de ses conclusions préliminaires.
- Un rapport écrit sera fourni à l'établissement dans les quatre à six semaines suivant la visite.

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The on-site visit will be scheduled at a time mutually convenient for the visiting team and the host institution. The team chair, in cooperation with the dean of engineering or equivalent officer of the host institution, will establish the agenda for the visit. Each visitor will be given the freedom to make travel arrangements that best fit his/ her schedule and geographic location without incurring unreasonable expenditures to the host institution. Engineers Canada staff and the host institution will make all necessary logistical arrangements.

All reasonable efforts should be made by visiting team members to arrive early the day prior to the visit start date. If this is not possible, visiting team members are encouraged to arrive two days prior to the visit's scheduled start date. In both cases, the purpose of early arrival is to allow for adjustment to the time-zone change.

Team members will be available to make presentations to the faculty and students on topics related to the activities of Engineers Canada.

Observers may be invited to accompany the visiting team, normally for international training, with the approval of the chair of the Accreditation Board and the team chair. The Accreditation Board will fund such observers, as appropriate; not the institution.

Visit schedule development

The institution should develop a visit schedule that best demonstrates the strengths of their program in consultation with the visiting team chair. The visit schedule should be developed within a general framework of approximately three days and must include time to review course materials and for the team to deliver an oral presentation of the team's observations at the end of the visit. Furthermore, the visiting team will benefit from:

a. the visit taking place when students are on-site and in the classrooms and laboratories

b. Visits to relevant satellite locations. If such is the case the normal three-day visit may be extended as appropriate

c. one-on-one meetings with individual faculty members. Group meetings may be scheduled if time permits

d. an emphasis on undergraduate engineering programs, and how specific facilities, courses and events contribute to the undergraduate engineering educational experience.

La visite aura lieu à un moment qui convient à la fois à l'équipe de visiteurs et à l'établissement d'accueil. Le président de l'équipe, en collaboration avec le doyen de la faculté de génie ou du représentant officiel de l'établissement d'accueil, établira le calendrier de la visite. Chaque visiteur pourra prendre les dispositions de voyage qui conviennent le mieux à son horaire et à son emplacement géographique, sans toutefois engager de dépenses excessives pour l'établissement d'accueil. Le personnel d'Ingénieurs Canada et l'établissement d'accueil se chargeront de régler toutes les questions de logistique.

Les membres de l'équipe de visiteurs s'efforceront d'arriver tôt, la veille du jour où commencera la visite. Si cela est impossible, nous encourageons les membres de l'équipe de visiteurs à arriver deux jours avant la date du début de la visite. Dans les deux cas, nous invitons les membres à arriver tôt afin qu'ils puissent s'adapter au fuseau horaire.

Les membres de l'équipe seront à la disposition de l'établissement d'enseignement pour présenter des exposés au corps professoral et aux étudiants sur des sujets relatifs aux activités d'Ingénieurs Canada.

Des observateurs pourraient être invités à accompagner l'équipe de visiteurs, normalement dans le but de dispenser de la formation, avec l'autorisation du président du Bureau d'agrément et du président de l'équipe de visiteurs. Le Bureau d'agrément, et non l'établissement, se chargera du financement de ces observateurs, selon les besoins.

Établissement de l'horaire de visite

L'établissement devrait établir, pour la visite, un horaire qui mette le mieux en valeur les points forts de son programme. L'horaire de la visite devrait généralement s'étaler sur une période d'environ trois jours, et prévoir du temps pour permettre à l'équipe d'examiner le contenu des cours et de présenter un compte rendu verbal de ses observations, à la fin de la visite. De plus, l'équipe de visiteurs aura intérêt à ce que :

a. la visite ait lieu alors que les étudiants sont sur place, dans les classes et les laboratoires;

b. des visites soient effectuées dans des sites satellites pertinents. Le cas échéant, la visite normale de trois jours pourrait être prolongée;

c. des rencontres en tête-à-tête aient lieu avec les membres du corps professoral. On pourrait aussi prévoir des rencontres en groupe, si l'on dispose d'assez de temps;

d. l'on mette l'accent sur les programmes de génie de premier cycle, et sur la façon dont les installations particulières, les cours et les événements contribuent, pour les étudiants de premier cycle, à enrichir leur formation en génie.

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Consultation with the team chair during development of the visit schedule is recommended.

Attendance at report of team's observations

At the end of the visit, the entire visiting team should meet with the institutions' dean (or equivalent) for the purpose of delivering an oral presentation of the team's initial observations. The purpose of this presentation is to make the dean aware of all the major findings that will be included in the *Visiting Team Report* to the Accreditation Board. It is not a discussion, nor a debate: its strict purpose is for the visiting team to convey their major findings. In Canada, attendance at this meeting is typically limited to the dean and, if appropriate, the department heads.

Reports

Within approximately six weeks after the completion of the visit, a complete report of the team's findings will be sent to the institution which will include perceived strengths and weaknesses, areas of conformance to and deviation from the Accreditation Board criteria as interpreted by the visiting team, matters of concern (both for the present and for the future) and any suggestions for improvement. No recommendations as to the Accreditation Board's decision on "substantial equivalency" are included in the report.

The report will be submitted by the Secretariat to the institution for comment and reaction and to ensure accuracy and completeness. This also provides an opportunity for the institution to advise on improvements being made in the current academic year. Any comments submitted by the institution will be given to the team chair for consideration. The Accreditation Board secretariat may communicate with both the institution and the visiting team chair with the intent of ensuring that the program dossier is complete.

Evaluation actions

The decision as to "substantial equivalency" is made by the Accreditation Board as the result a discussion of the information gained from the visit process. In arriving at its decision following a visit, the Accreditation Board considers selected information from the completed questionnaire, the visiting team report, the institution's response to the visiting team report, any further clarifying correspondence and any other relevant information. The visiting team chair will present the report to a meeting of the Accreditation Board. A representative from the institution is permitted to attend portions of the meeting where the substantial equivalency decision will be made but the representative leaves

Nous recommandons que l'élaboration de l'horaire de la visite s'effectue en consultation avec le président de l'équipe de visiteurs.

Personnes présentes au compte-rendu des observations de l'équipe

À la fin de la visite, toute l'équipe de visiteurs devrait rencontrer le doyen de l'établissement (ou son mandataire), afin de présenter un compte rendu verbal de ses premières observations. Cette rencontre a pour objet d'informer le doyen des principales constatations qui seront indiquées dans le rapport que l'équipe soumettra au Bureau d'agrément. Il ne s'agit pas de tenir une discussion ni un débat, mais simplement de communiquer les constatations de l'équipe de visiteurs. Selon la pratique en vigueur au Canada, seuls le doyen et, au besoin, les chefs de départements assistent à cette réunion.

Rapports

Dans un délai d'environ six semaines après la visite, le Bureau d'agrément fera parvenir à l'établissement un rapport complet des constatations de l'équipe, comprenant les éléments suivants : les points forts et les points faibles perçus, les aspects qui sont conformes aux normes du Bureau d'agrément et ceux qui y dérogent selon les membres de l'équipe de visiteurs, les aspects préoccupants (autant pour le moment présent que pour l'avenir), ainsi que des suggestions d'amélioration, le cas échéant. Ce rapport ne formule aucune recommandation quant à la décision d'« équivalence substantielle » du Bureau d'agrément.

Le secrétariat du Bureau d'agrément transmettra le rapport à l'établissement d'enseignement afin d'obtenir ses commentaires et de s'assurer que les renseignements fournis sont exacts et complets. L'établissement aura ainsi l'occasion de signaler les améliorations apportées pendant l'année universitaire en cours. Les commentaires formulés par l'établissement seront transmis au président de l'équipe. Le secrétariat du Bureau d'agrément pourra communiquer avec l'établissement et le président de l'équipe de visiteurs, afin de s'assurer que le dossier du programme est complet.

Décisions concernant l'évaluation

La décision concernant « l'équivalence substantielle » est prise par le Bureau d'agrément à la lumière des renseignements obtenus dans le cadre de la visite. Pour en arriver à une décision à la suite d'une visite, le Bureau d'agrément étudie les renseignements fournis dans le questionnaire dûment rempli, le rapport de l'équipe de visiteurs, la réaction de l'établissement au rapport de l'équipe de visiteurs, toute correspondance échangée en vue de fournir des précisions, ainsi que tout autre renseignement pertinent. Le président de l'équipe de visiteurs présentera le rapport à l'occasion d'une réunion du Bureau d'agrément. Un représentant de l'établissement pourra assister à la partie de la

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the meeting when the Accreditation Board makes deliberations related to the institution. Expenses of the team chair and the representative from the institution to attend the Accreditation Board meeting are borne by the institution.

The letter to the institution detailing the decisions and reasons for the decisions is prepared by the Accreditation Board Executive Committee. The Accreditation Board secretary prepares a covering letter elaborating on the decision and sends the package to the institution.

"Substantial equivalency" of a program will be granted for a period, usually three to six years. The period of substantial equivalency will be subject to review for cause at any time during that period. "Substantial equivalency" status will be granted if current conditions are judged to meet or exceed the minimum requirements. The name of any program granted substantial equivalency will be published in the current version of the Accreditation Board report *Accreditation Criteria and Procedures* in the section "Substantially Equivalent Programs".

At least one year prior to the end of the term of recognition, the Accreditation Board secretary will advise the host institution that a return visit and a substantial equivalency evaluation will be necessary in order for the recognition to remain in effect.

Confidentiality

Information supplied by the institution is for the confidential use of the visiting team, the Accreditation Board, and Engineers Canada and will not be disclosed without the specific written permission of the institution concerned. The statements to the institution are confidential. Direct quotations in whole or in part from any statement are not authorized. Correspondence and reports between the Accreditation Board and the institution are confidential documents and should be released only to authorized personnel of the institution. Wherever institutional policy or government laws require the release of a confidential document, the entire document must be released. In any case, the *Visiting Team Report* must not be released to the public as it is a working document and does not form part of the decision letter.

Public release

Programs deemed "substantially equivalent" will be listed in Engineers Canada public documents and communicated to interested parties, as appropriate, for as long as the period of

réunion où la décision d'équivalence substantielle sera prise, mais ne pourra pas assister aux délibérations du Bureau d'agrément concernant l'établissement. Les dépenses engagées par le président de l'équipe et le représentant de l'établissement d'enseignement pour assister à la réunion du Bureau d'agrément sont à la charge de l'établissement.

La lettre destinée à l'établissement pour lui expliquer en détail la décision et les raisons la justifiant sera préparée par le comité exécutif du Bureau d'agrément. Le secrétariat du Bureau d'agrément préparera une lettre de présentation donnant plus de précisions quant à la décision et expédiera le tout à l'établissement d'enseignement.

L'« équivalence substantielle » d'un programme est accordée pour une période déterminée, habituellement de trois à six ans. Ce statut peut être réexaminé pour un motif valable en tout temps au cours de la période. Le statut d'« équivalence substantielle » est accordé si l'on juge que le programme satisfait aux exigences minimales ou les dépasse. Le nom de tout programme auquel on accorde l'équivalence substantielle sera publié dans la version en vigueur du rapport du Bureau d'agrément intitulé « Normes et procédures d'agrément », à la section « Programmes substantiellement équivalents ».

Au moins un an avant la fin de la période de reconnaissance de l'équivalence, le secrétariat du Bureau d'agrément informera l'établissement d'accueil qu'une nouvelle visite et une nouvelle évaluation d'équivalence substantielle devront être effectuées pour que la reconnaissance soit maintenue.

Confidentialité

Les renseignements fournis par l'établissement d'enseignement sont destinés à l'usage exclusif de l'équipe de visiteurs, du Bureau d'agrément et d'Ingénieurs Canada, et ils ne seront pas divulgués sans la permission écrite de l'établissement concerné. Les déclarations faites à l'établissement sont confidentielles. Les citations directes, intégrales ou partielles, tirées de toute déclaration sont interdites. La correspondance et les rapports échangés entre le Bureau d'agrément et l'établissement d'enseignement sont des documents confidentiels, qui ne doivent être transmis qu'aux personnes autorisées de l'établissement. Dans les cas où une politique de l'établissement ou des lois du gouvernement exigent la publication d'un document confidentiel, la version intégrale du document doit être diffusée. Quoi qu'il en soit, le *Rapport de l'équipe de visiteurs* ne doit pas être rendu public, car il s'agit d'un document de travail qui ne fait pas partie de la lettre de décision.

Diffusion publique

Les noms des programmes jugés « substantiellement équivalents » seront inscrits dans des documents publics d'Ingénieurs Canada et communiqués aux parties intéressées, au besoin, tant que la

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recognition remains in effect. The length of the recognition period is not published and is confidential between the institution and Engineers Canada. Because "substantial equivalency" is program specific, all statements made by the institution regarding "substantial equivalency" must refer only to those programs that are evaluated as "substantially equivalent".

Fees

It is Engineers Canada policy that the "substantially equivalent" evaluation process will normally be self-sustaining financially from fees charged to the requesting institution. Within its international mandate however, either determined by the Engineers Canada Board of Directors or specific requests from the Canadian government, it is possible that a portion of the total costs may be borne by other sources.

The fees for international visits can be obtained from the Accreditation Board Secretariat and are subject to change. The fees normally include travel expenses for all visitors, accommodations expenses, transportation and incidentals. Airfares will be at the business class level and ground transportation will be first class. Engineers Canada will also charge an administrative fee to cover the direct and indirect costs related to the visit. Typically this fee is in the order of $5000 CDN per institution, but as many circumstances may affect this policy, the administration fee will be dealt with on a case by case basis.

To comply with Revenue Canada laws, all payments will be made to Engineers Canada, which will, in turn reimburse visitors for travel expenses.

Hospitality

The purpose of every Accreditation Board visit is to examine the engineering programs being offered by the institution. Hospitality extended to visiting team members should be limited to essentials related to the visit. It is appropriate for the institution to offer transportation to and from the institution each day, lunch on the first full day of the visit, and lunch prior to the report of team's observations. Elaborate meals, tours not related to the programs, and gifts are discouraged.

Updated: December 2011

période de reconnaissance demeurera en vigueur. La durée de la période de reconnaissance n'est pas publiée et constitue un renseignement confidentiel entre l'établissement et Ingénieurs Canada. Étant donné que l'« équivalence substantielle » s'applique à un programme particulier, toutes les déclarations faites par l'établissement concernant cette équivalence ne doivent faire allusion qu'aux programmes qui sont évalués comme étant « substantiellement équivalents ».

Tarifs

Selon la politique d'Ingénieurs Canada, le processus d'évaluation en vue d'accorder l'« équivalence substantielle » doit normalement s'autofinancer à partir des frais facturés à l'établissement qui présente une demande d'évaluation. Dans le cadre de son mandat international, toutefois, à la recommandation du conseil d'Ingénieurs Canada ou à la demande expresse du gouvernement du Canada, il se peut qu'une partie des coûts soit assumée par d'autres sources.

On peut se procurer la grille des tarifs pour les visites internationales, qui est sujette à modification, en s'adressant au secrétariat du Bureau d'agrément. Les frais comprennent normalement les frais de voyage de tous les visiteurs, notamment l'hébergement, les frais de transport et les frais accessoires. Le transport aérien sera en classe affaires et le transport terrestre en première classe. Ingénieurs Canada impose aussi des frais d'administration pour couvrir les coûts directs et indirects de la visite. En règle générale, ces frais sont de l'ordre de 5 000 $ CAN par établissement; cependant, du fait que de nombreuses circonstances peuvent avoir une incidence sur cette politique, les frais d'administration sont déterminés au cas par cas.

Afin de se conformer aux lois de Revenu Canada, tous les paiements doivent être versés à Ingénieurs Canada, qui se chargera de rembourser aux visiteurs leurs frais de voyage.

Hospitalité

La visite du Bureau d'agrément a pour but d'examiner les programmes de génie offerts par l'établissement d'enseignement. L'hospitalité offerte aux membres de l'équipe de visiteurs devrait se limiter aux éléments essentiels de la visite. Il est acceptable que l'établissement offre chaque jour le transport aller-retour entre l'hôtel et l'établissement, le déjeuner du midi le premier jour complet de la visite et le déjeuner du midi avant la réunion de compte rendu des observations de l'équipe. Nous déconseillons aux établissements d'offrir aux visiteurs des repas sophistiqués, des excursions non liées aux programmes et des cadeaux.

Mise à jour : décembre 2011

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Appendix A: Template of an evaluation proposal

Engineers Canada Substantial Equivalency Evaluation Visit – Proposal
[Name of country, Name of institution] - Visit cycle year

Introduction

Engineers Canada is pleased to conduct a substantial equivalency visit at the request of the [*Name of institution*] to your programs in [*Name of program(s)*].

Method of approach

This sequence will provide Engineers Canada, through the Accreditation Board, with the necessary documentation and due diligence to make a decision on the substantial equivalency for these programs at its meeting in [*Name of city*] where the Accreditation Board will meet in September following the on-site visit.

[*Number of trips required*] trips by the visiting team will be required. It has been agreed formally that this visit will take place in the [*Timeframe*], more specifically from the [*Indicate date*].

Visiting team

The Canadian visiting team will be composed of the following individuals:
- Visiting Team Chair: [*Name*]
- Visiting Team Vice-Chair: [*Name*]
- Program Visitor for [*Name of program*]: [*Name*]

Substantial equivalency schedule of activities

The substantial equivalency visit will be carried out in accordance with the following schedule, which is based on the availability of the visiting team members and [*Name of institution*]. The dates below are confirmed and final preparations are under way for the substantial equivalency visit.

January [Year]: Official request from Engineers Canada for documentation and forms is sent

An official request for information and filling out of the questionnaire is transmitted from Engineers Canada to [*Name of institution*].

Annexe A : Modèle de proposition – Visite d'évaluation

Proposition – Visite d'évaluation d'équivalence substantielle d'Ingénieurs Canada
[Nom du pays, Nom de l'établissement] - Année cycle de visites

Introduction

Ingénieurs Canada propose de réaliser, à la demande de [*Nom de l'établissement*], une visite visant à évaluer l'équivalence substantielle des programmes [*Noms des programmes*].

Méthode

La séquence d'étapes proposées permettra à Ingénieurs Canada, par l'intermédiaire du Bureau d'agrément, d'obtenir la documentation et d'effectuer les vérifications nécessaires pour prendre une décision concernant l'équivalence substantielle de ces programmes lors de la réunion du Bureau d'agrément qui se tiendra à [*Nom de la ville*] au mois de septembre suivant la visite sur les lieux.

[*Indiquer le nombre de visites qui seront nécessaires*] visites seront nécessaires à l'équipe de visiteurs. Il a été officiellement établi que cette visite se tiendrait dans [*Indiquer le délai*], plus précisément à compter du [*Indiquer la date*].

Équipe de visiteurs

L'équipe canadienne de visiteurs sera composée des personnes suivantes :
- Président de l'équipe de visiteurs : [*Nom*]
- Vice-président de l'équipe : [*Nom*]
- Visiteur affecté au programme [*Nom du programme*] : [*Nom*]

Calendrier des activités de la visite d'évaluation

La visite d'évaluation sera effectuée conformément au calendrier suivant, qui est basé sur la disponibilité des membres de l'équipe de visiteurs et de l'établissement [*Nom de l'établissement*]. Les dates ci-dessous ont été confirmées et les derniers préparatifs de la visite sont en cours.

Janvier [Indiquer l'année] : Demande officielle de la part d'Ingénieurs Canada pour que la documentation et les formulaires lui soient envoyés

Ingénieurs Canada envoie à l'établissement [*Nom de l'établissement*] une demande officielle d'information, ainsi qu'un formulaire à remplir.

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Date [Year]: Engineers Canada receipt of completed questionnaire and documentation

Engineers Canada requests that all completed forms and documentation be submitted to the Engineers Canada offices in Ottawa, Canada by this date.

Date [Year]: Substantial equivalency visit

We have undertaken some planning of the substantial equivalency visit and are suggesting the following schedule to the team:

Date: Travel to [*Name of country*] and Visit Preparation/ Review (Chair, Vice-Chair, Program visitors)
Date: Conduct main campus evaluation at [*Name of campus*] (all team members)
Date: Return to Canada

A more detailed schedule for the evaluation should be prepared in advance by the institution in consultation with the substantial equivalency visiting Team Chair.

Date [Year]: Comments due from the institution

The substantial equivalency visiting team report will be sent to the institution several weeks after the visit. The institution is invited to review the substantial equivalency visiting team report for accuracy and completeness and to provide comments and reaction. The institution will also be invited to comment on improvements or changes made since the substantial equivalency visit which are being implemented in the current academic year.

September [Year]: Accreditation Board substantial equivalency decision made

The Accreditation Board will be holding its fall meeting in [Name of city] on these dates. The Dean will be asked to send a brief written report summarizing any changes to the program since the substantial equivalency visit.

The substantial equivalency decision will be communicated by email within a couple of days of the decisional meeting.

October [Year]: Communication of decision to the institution

A detailed letter will be addressed to the institution in October.

Costs

Travel for the Substantial Equivalency evaluation in [*Name of*

Date [Indiquer l'année] : Réception, par Ingénieurs Canada, du questionnaire dûment rempli et de la documentation demandée

Ingénieurs Canada demande que la documentation et le formulaire requis lui soient envoyés à ses bureaux d'Ottawa, à cette date au plus tard.

Date [Indiquer l'année] : Visite d'évaluation

Nous avons commencé à planifier la visite d'évaluation, et proposons le calendrier suivant pour l'équipe de visiteurs :

Date : Voyage vers [*Nom du pays*] et préparation de la visite (président, vice-président et visiteurs de programmes)
Date : Réalisation de l'évaluation au campus principal [*Nom du campus*] (tous les membres de l'équipe)
Date : Retour au Canada

Un horaire plus détaillé pour la visite d'évaluation devrait être préparé à l'avance par l'établissement, en collaboration avec le président de l'équipe de visiteurs.

Date [Indiquer l'année] : Commentaires de la part de l'établissement

Le rapport de l'équipe d'évaluation est envoyé à l'établissement plusieurs semaines après la visite. L'établissement est invité à examiner le rapport pour déterminer s'il est exact et complet, et à fournir ses commentaires. L'établissement est aussi invité à décrire les améliorations ou modifications apportées au(x) programme(s) depuis la visite d'évaluation, pendant l'année universitaire en cours.

Septembre [Indiquer l'année] : Prise de décision d'équivalence substantielle par le Bureau d'agrément

Le Bureau d'agrément tiendra sa réunion d'automne à [*Nom de la ville*] à la date indiquée. Le doyen de l'établissement visité sera invité à soumettre un bref rapport résumant les modifications apportées au programme depuis la visite d'évaluation.

La décision d'équivalence substantielle sera communiquée par courriel à l'établissement dans les jours suivant la réunion de prise de décision.

Octobre [Indiquer l'année] : Communication de la décision à l'établissement

Une lettre détaillée sera adressée à l'établissement en octobre.

Coûts

Les frais de voyage de l'équipe de visiteurs vers [*Nom du pays*] sont

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country] is based on business class airfares from various locations in Canada to [*Name of country*]. These will be charged at cost with no mark-up.

It is assumed that all hotels, meals and transfers for the substantial equivalency visiting team members while in [*Name of country*] will be paid for, or reimbursed by the [*Name of institution*], with no cost to Engineers Canada. Transfers to/from airports in Canada for the substantial equivalency visiting team members will be added to the final invoice from Engineers Canada to the [*Name of institution*].

Engineers Canada will not charge honorariums for any individuals involved in this evaluation.

Engineers Canada will charge a flat administration fee of CAN $ 5,000 to the [*Name of institution*]. Please note that this administration fee is based on the program(s) being evaluated, and may change for future visits.

An invoice will be prepared at the end of the substantial equivalency visit in the early part of the summer of [*Indicate the year*], and will summarize the out-of-pocket costs incurred by Engineers Canada and its substantial equivalency visiting team in accordance with the above provisions. This invoice will also include the $5,000 administration fee. Payment for the invoices may be made by International Bank draft or via Electronic Fund Transfer. Engineers Canada will provide the banking information for the Electronic Fund Transfer upon request.

The following is a summary of business class airfare costs for the team members. These costs are approximate and subject to change. Airfare costs may vary depending on costs at the time of booking.

The estimated costs for the substantial equivalency visit are as follows:

Substantial equivalency visit to [Name of country]

Approx. airfares[1]:		
[*City*], Canada – [*City*, *Country*] (Chair)	=	$
[*City*], Canada – [*City*, *Country*] (Vice-chair)	=	$
[*City*], Canada – [*City*, *Country*] (Program visitor)	=	$
Transfers in Canada 5 x 75	=	$
Transfers in Country 5 x 75	=	$
Engineers Canada administration fee	**=**	**$ 5,000**
Total estimated costs	**=**	**$**

[1] includes train fares and mileage as required.

basés sur le transport aérien en classe affaires depuis diverses villes du Canada. Ces frais seront facturés au prix coûtant, sans majoration.

Il est entendu que tous les frais d'hébergement, de repas et de transit engagés par les membres de l'équipe de visiteurs pendant leur séjour en [*Nom du pays*] seront entièrement payés ou remboursés par l'établissement [*Nom de l'établissement*]. Ingénieurs Canada ajoutera à la facture finale envoyée à l'établissement [*Nom de l'établissement*] les coûts des correspondances à destination et en provenance d'aéroports canadiens pour les membres de l'équipe de visiteurs.

Ingénieurs Canada n'exigera pas d'honoraires pour les personnes participant à cette évaluation.

Ingénieurs Canada exigera des frais d'administration globaux de 5 000 $ CAN à [*Nom de l'établissement*] . Veuillez noter que ces frais sont basés sur le(s) programme(s) évalué(s) et pourraient changer en cas de visites futures.

À la fin de la visite d'évaluation, au début de l'été [*Indiquer l'année*], Ingénieurs Canada préparera une facture qui résumera les frais remboursables engagés par l'organisme et par son équipe de visiteurs, conformément aux dispositions susmentionnées. Cette facture comprendra aussi les frais d'administration de 5 000 $. Le paiement pourra être effectué par traite bancaire internationale ou par transfert électronique de fonds. Ingénieurs Canada fournira sur demande les renseignements bancaires nécessaires à un tel transfert.

Vous trouverez ci-dessous un résumé des coûts de transport aérien en classe affaires pour les membres de l'équipe. Ces coûts sont approximatifs et pourraient changer, selon les prix en vigueur au moment des réservations.

Les coûts estimatifs de la visite d'évaluation sont les suivants :

Visite d'évaluation à [Nom du pays]

Coûts approximatifs – Transport aérien[1]		
[*Ville*], Canada – [*Ville*, *Pays*] (président)	=	$
[*Ville*], Canada – [*Ville*, *Pays*] (vice-président)	=	$
[*Ville*], Canada – [*Ville*, *Pays*] (visiteur de programme)	=	$
Correspondance au Canada 5 x 75	=	$
Correspondance au pays d'accueil 5 x 75	=	$
Frais d'administration d'Ingénieurs Canada	**=**	**$ 5000**
Total estimatif des coûts	**=**	**$**

[1] comprennent, le cas échéant, le transport ferroviaire et le kilométrage.

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All costs are in Canadian dollars. Airfares are based on business class return. Fares include all taxes. Transfer costs are estimates only for taxis to/from airports. The above costs assume that all hotels, meals and transfers for the substantial equivalency visit while in [*Name of country*] will be paid for or reimbursed by the [*Name of institution*]. Our preference would be for these costs to be paid directly by the [*Name of institution*] rather than reimbursed later.

Travel costs for all team members may vary. The above costs of $_____ are estimates only.

Acceptance and approval

Engineers Canada requests that the [*Name of institution*] indicate its approval and acceptance of this proposal by signing below and faxing or emailing back a signed copy to Engineers Canada. A second signed copy should be retained by the [*Name of institution*] for your records.

Accepted:
Signature: _____
Date: _____

Tous les coûts sont en dollars canadiens. Les tarifs aériens sont basés sur le trajet aller-retour en classe affaires. Les tarifs comprennent toutes les taxes. Les coûts de correspondance ne sont que des estimations pour les taxis à destination et en provenance des aéroports. Les coûts indiqués ci-dessus présument que tous les frais d'hébergement, de repas et de transit engagés par les membres de l'équipe de visiteurs pendant leur séjour en [*Nom du pays*] seront entièrement payés ou remboursés par l'établissement [*Nom de l'établissement*]. Il serait préférable que ces coûts soient payés directement par l'établissement, plutôt que remboursés ultérieurement.

Les frais de voyage des membres de l'équipe pourraient varier. Les coûts susmentionnés de _____$ ne sont que des estimations.

Acceptation et approbation

Ingénieurs Canada demande à l'établissement [*Nom de l'établissement*] de signifier son acceptation et son approbation de cette proposition en signant ci-dessous et en renvoyant la copie signée, par courriel ou télécopieur, à Ingénieurs Canada. L'établissement [*Nom de l'établissement*] devrait également conserver dans ses dossiers une copie signée de cette proposition.

Acceptation :
Signature : _____
Date : _____

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Guidelines relating to coincident reviews

The context

From time to time, the Canadian Engineering Accreditation Board is requested to accommodate on its site visits additional reviewers associated with a distinct review (referred to herein as a "Coincident Review"), particularly when such a review would otherwise occur within a short time of the Accreditation Board Team's visit. Such reviews may be required by governments or may be initiated by the institution itself, they may include reviewers that are internal or external to the institution, and they may entail additional considerations beyond the normal Accreditation Board review. These Guidelines are intended to provide a framework for Accreditation Board's consideration of such requests. They are not intended to address the presence of International Observers on its Review Teams, nor the participation of Washington Accord signatories that wish to monitor Accreditation Board visits.

Principles

In its consideration of this matter, the Accreditation Board is guided by the following principles:

• The Accreditation Board is interested in cooperating with institutions that wish to establish reviews that are coincident with, and benefit from, Accreditation Board site visits.

• The Accreditation Board will have the final say on the size and composition of the Coincident Review Team. Since Accreditation Board site visits entail considerable time, effort, budgets and logistical arrangements, the Accreditation Board does not wish to increase or complicate unduly its visit arrangements on account of accommodating Coincident Reviews.

• The Accreditation Board wishes to ensure that the Coincident Review Team is distinct from the Canadian Engineering Accreditation Board Visiting Team, and that the Coincident Review Team does not influence, either directly or indirectly, the Accreditation Board visit procedures and the findings and outcome of the visit.

Lignes directrices sur les évaluations concomitantes

Contexte

De temps à autre, on demande au Bureau canadien d'agrément des programmes de génie d'accueillir, à l'occasion de ses visites sur place, d'autres examinateurs associés à une évaluation distincte (appelée ci-après « évaluation concomitante »), en particulier lorsqu'une telle évaluation aurait lieu peu après la visite de l'équipe du Bureau d'agrément. Ces évaluations, qui peuvent être demandées par des administrations publiques ou être à l'initiative de l'établissement lui-même, peuvent faire intervenir des examinateurs propres à l'établissement ou de l'extérieur, et comporter d'autres aspects qui excèdent l'évaluation normale du Bureau d'agrément. Les présentes lignes directrices visent à offrir un cadre au Bureau d'agrément pour l'examen de ces demandes. Elles ne visent pas à aborder la présence d'observateurs internationaux dans les équipes d'évaluation, ni la participation des signataires de l'Accord de Washington qui souhaitent surveiller les visites du Bureau d'agrément.

Principes

Dans l'étude de cette question, le Bureau d'agrément s'inspire des principes suivants :

• Le Bureau d'agrément souhaite collaborer avec les établissements désireux d'établir des évaluations qui coïncident avec les visites sur place du Bureau d'agrément et qui en bénéficient.

• Le Bureau d'agrément aura le dernier mot quant à la taille et à la composition de l'équipe chargée de l'évaluation concomitante. Étant donné que les visites sur place du Bureau d'agrément nécessitent beaucoup de temps, d'efforts, de fonds budgétaires et de dispositions à prendre sur le plan logistique, le Bureau d'agrément ne souhaite surtout pas multiplier ni compliquer indûment les dispositions entourant ses visites pour consentir aux évaluations concomitantes.

• Le Bureau d'agrément entend s'assurer que l'équipe d'évaluation concomitante est distincte de celle des visiteurs du Bureau canadien des programmes d'agrément de génie, et que l'équipe d'évaluation concomitante n'influence pas, directement ou indirectement, les procédures, les constatations ni le résultat de la visite du Bureau d'agrément.

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Guidelines

Taking account of the above principles, the following guidelines have been established:

1. *Coincident review team composition*

The Coincident Review Team should exclude any faculty members that report to the Dean responsible for the programs undergoing review, all its members should be at arms-length from the programs under review, and they should have no conflict of interest in undertaking the review (as may be interpreted by the Accreditation Board Secretariat). The number and names of all Coincident Review team members, who may be internal or external to the institution, must be approved by the Accreditation Board, acting through the Accreditation Board Visiting Team Chair.

2. *Institution submission*

The documentation provided by the institution to the Accreditation Board should conform to Accreditation Board requirements and not have any modifications in format or content on account of a Coincident Review. The institution may provide this documentation to the Coincident Review Team, and may supplement this with any additional information or materials that it may decide to provide to the Coincident Review Team.

3. *Meetings*

Except for meetings with students, Coincident Review Team members may be present at all meetings between the Accreditation Board Visiting Team members and institution officials and representatives during the site visit. They should be so identified at all meetings and the purpose of their visit articulated.

They may participate fully in these meetings provided that the Visiting Team's visit schedule is not being compromised. The decision as to whether the schedule is being compromised is in the discretion of the Visiting Team Chair. Coincident Review Team members may provide de-briefing commentary on the meetings, and they may be present, at the discretion of the Visiting Team Chair, at any in-camera and informal meetings of the Visiting Team. Coincident Review Team members shall be absent from the meeting at which the Visiting Team prepares for the Exit Interview. They may be present at the Exit Interview at the discretion of the Dean.

Lignes directrices

Les lignes directrices qui suivent ont été établies en tenant compte des principes ci-dessous :

1. *Composition de l'équipe d'évaluation concomitante*

L'équipe d'évaluation concomitante exclut tout membre du corps professoral qui relève du doyen responsable des programmes à évaluer; tous ses membres doivent être indépendants des programmes à évaluer et l'évaluation ne doit pas les mettre en situation de conflit d'intérêts (selon l'interprétation du secrétariat du Bureau d'agrément). Le nombre de membres et le choix des membres de l'équipe d'évaluation, qui peuvent faire partie de l'établissement ou être de l'extérieur, doivent être approuvés par le Bureau d'agrément, par l'entremise du président de l'équipe de visiteurs du Bureau d'agrément.

2. *Documentation de l'établissement*

La documentation transmise par l'établissement au Bureau d'agrément doit être conforme aux exigences du Bureau d'agrément et ne comporter aucune modification de forme ou de fond en raison d'une évaluation concomitante. L'établissement peut remettre la documentation à l'équipe d'évaluation concomitante et l'accompagner d'un complément d'information ou de documents qu'il peut décider de transmettre à l'équipe d'évaluation concomitante.

3. *Réunions*

À l'exception des réunions avec des étudiants, les membres de l'équipe d'évaluation concomitante peuvent être présents aux réunions entre les membres de l'équipe de visiteurs du Bureau d'agrément et les responsables et les représentants de l'établissement durant la visite sur place. Ils doivent se présenter à ce titre aux réunions et préciser le but de leur visite.

Ils peuvent participer pleinement à ces réunions pourvu que cela ne compromette pas le calendrier des visites de l'équipe de visiteurs. La décision en cette matière est à la discrétion du président de l'équipe de visiteurs. Les membres de l'équipe d'évaluation concomitante peuvent déposer des commentaires de débreffage aux réunions, et ils peuvent être présents, à la discrétion du président de l'équipe de visiteurs, aux réunions à huis clos et aux réunions non officielles de l'équipe de visiteurs. Les membres de l'équipe d'évaluation concomitante doivent s'absenter de la réunion au cours de laquelle l'équipe de visiteurs se prépare en prévision de l'entrevue de fin de visite. Toutefois, ils peuvent être présents à cette entrevue à la discrétion du doyen.

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4. Reporting

The Dean will decide whether or not to provide the Coincident Review Team with a copy of the Accreditation Board Visiting Team Report and a copy of the Dean's Response at the time it is submitted to the Accreditation Board.

5. Confidentiality

Coincident Review Team members will be required to sign a Confidentiality Agreement available from the Accreditation Board Secretariat with respect to all written materials and meeting deliberations that relate to the Accreditation Board site visit. The Confidentiality Agreement applicable to Coincident Team members is provided in the Appendix.

6. Expenses

While the Accreditation Board and the institution will cover their respective costs of site visits in the usual manner, the Accreditation Board does not reimburse travel or other out-of-pocket expenses of the Coincident Review Team.

7. Accreditation Board visiting team chair role

Taking account of such factors as the number of programs being reviewed, the intended size and composition of the Coincident Review Team and the extent and nature of the Coincident Review, the Visiting Team Chair, in consultation with the Dean and the Accreditation Board Secretariat, decides on whether or not to accommodate a proposed Coincident Review. The decision to accommodate the proposed Coincident Review is within the discretion of the Visiting Team Chair. The Accreditation Board Visiting Team Chair approves the size and composition of the Coincident Review Team, and may issue additional requirements or restrictions beyond those contained in these Guidelines.

Procedures

1. The initial request for a Coincident Review is made by the Dean to the Accreditation Board Secretariat at the same time as the Dean submits a completed Request for Accreditation. The request should identify the nature of the Coincident Review, it should provide the Terms of Reference of the Coincident Review, and it may propose the names, numbers and categories of members of the Coincident

4. Rapport

Il revient au doyen de décider s'il remettra ou non un exemplaire du rapport de l'équipe de visiteurs du Bureau d'agrément à l'équipe d'évaluation concomitante, de même que copie de la réponse du doyen au moment où elle sera soumise au Bureau d'agrément.

5. Confidentialité

Les membres de l'équipe d'évaluation concomitante devront signer une entente de confidentialité disponible auprès du secrétariat du Bureau d'agrément à l'égard des documents écrits et des délibérations des réunions touchant la visite sur place du Bureau d'agrément. L'entente de confidentialité visant les membres de l'équipe d'évaluation concomitante figure en annexe.

6. Dépenses

Même si le Bureau d'agrément et l'établissement assument leurs coûts respectifs des visites sur place de la façon habituelle, le Bureau d'agrément ne rembourse pas les frais de déplacement ni les autres dépenses de l'équipe d'évaluation concomitante.

7. Rôle du président de l'équipe de visiteurs du Bureau d'agrément

Compte tenu de facteurs tels le nombre de programmes à évaluer, la taille et la composition prévues de l'équipe d'évaluation concomitante ainsi que l'étendue et la nature de cette évaluation, le président de l'équipe de visiteurs décide, après avoir consulté le doyen et le secrétariat du Bureau d'agrément, de donner suite ou pas à la proposition d'évaluation concomitante. La décision à cet égard est à son entière discrétion. Le président de l'équipe de visiteurs approuve la taille et la composition de l'équipe d'évaluation concomitante, et il peut formuler d'autres exigences ou restrictions en sus de celles des présentes lignes directrices.

Procédures

1. La demande initiale d'évaluation concomitante est présentée par le doyen au secrétariat du Bureau d'agrément, parallèlement à la demande d'agrément dûment remplie. Celle-ci précise la nature de l'évaluation concomitante, son mandat et elle peut proposer les noms, le nombre et les catégories de membres de l'équipe qui sera chargée de cette évaluation. Ces renseignements sont transmis sur-le-champ

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Review Team. This information is conveyed immediately to the Visiting Team Chair once approval of the Visiting Team Chair selection has been received by the Secretariat.

2. The Visiting Team Chair then confers with the Dean, and within three weeks of receiving the request responds to the Dean, copied to the Accreditation Board Secretariat, indicating a decision as to whether or not the proposed Coincident Review can be accommodated. The Accreditation Board Visiting Team Chair approves the final size and composition of the Coincident Review Team, and indicates additional requirements or restrictions beyond those in these Guidelines, if any.

3. The Dean then writes to the Coincident Review Team members, copied to the Accreditation Board Visiting Team Chair, to confirm their appointments and to provide them with these Guidelines, along with any additional requirements or restrictions that the Accreditation Board Visiting Team Chair may require.

4. The detailed visit schedule incorporating the Coincident Review Team is established between the Accreditation Board Visiting Team Chair and the Dean in the normal way, but taking account of the participation of the Coincident Review Team.

Effective February 23, 2013.

au président de l'équipe de visiteurs dès que l'approbation de la nomination de ce dernier a été communiquée au secrétariat du Bureau d'agrément.

2. Le président de l'équipe de visiteurs communique alors avec le doyen, et dans les trois semaines qui suivent la réception de la demande, il lui répond, avec copie conforme au secrétariat du Bureau d'agrément, en indiquant s'il consent à donner suite à la proposition d'évaluation concomitante. Le président de l'équipe de visiteurs du Bureau d'agrément approuve la taille et la composition définitives de l'équipe d'évaluation concomitante, et indique d'autres exigences ou restrictions en sus de celles des présentes lignes directrices, le cas échéant.

3. Ensuite, le doyen écrit aux membres de l'équipe d'évaluation concomitante, avec copie conforme au président de l'équipe de visiteurs du Bureau d'agrément, pour leur confirmer leur nomination et leur fournir les présentes lignes directrices, accompagnées des autres exigences ou restrictions que pourrait imposer le président de l'équipe de visiteurs du Bureau d'agrément.

4. Le président de l'équipe de visiteurs et le doyen fixent de la façon habituelle le calendrier détaillé de la visite en y intégrant la participation de l'équipe d'évaluation concomitante.

En vigueur le 23 février 2013.

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Coincident review team confidentiality agreement

The role of the Visiting Team is to gather information on behalf of the Canadian Engineering Accreditation Board (the Accreditation Board) about engineering programs and to provide a report on the qualitative and quantitative aspects of programs identifying issues that may be of interest to the Accreditation Board. The role of the Coincident Review Team is to accompany the Visiting Team during the accreditation visit process and to provide an independent report to the institution and/or to a government body. In the course of their work, Coincident Review Team members access confidential information and by signing this agreement they agree to maintain the confidentiality of the process.

Confidentiality

I understand that, as a member of the Coincident Review Team, I will have access to confidential material and information. In respect of that:

- I will respect the confidentiality of any materials and information that I deal with at all times before, during and after the visit and reporting process.
- I will access confidential information provided by the Accreditation Board and by the institution whose programs are being accredited only as needed for the purposes of the Coincident Review report.
- In order to ensure the confidentiality of the accreditation and review materials, I will also assume responsibility for disposing (i.e. shredding hard copies, deleting electronic versions) of any confidential materials once the disposition of the Coincident Review report has been completed.

Privilege and intellectual property

I understand that documents produced in the course of an accreditation review contain information that is privileged, and I may only use these documents to assist in the preparation of the Coincident Review Report. I agree not to copy, disseminate or distribute any of the materials beyond the members of the Coincident Review and Visiting Teams.

_____
Signature of member

_____
Print name of member

_____
Date

Entente de confidentialité de l'équipe d'évaluation concomitante

Le rôle de l'équipe de visiteurs consiste à recueillir de l'information pour le compte du Bureau canadien des programmes d'agrément de génie (le Bureau d'agrément) au sujet des programmes de génie et à produire un rapport sur les aspects qualitatifs et quantitatifs des programmes en relevant les enjeux susceptibles d'intéresser le Bureau d'agrément. Le rôle de l'équipe d'évaluation concomitante est d'accompagner l'équipe de visiteurs durant la visite d'agrément et de produire un rapport indépendant qui sera remis à l'établissement ou à un organisme gouvernemental. Dans le cadre de leurs travaux, les membres de l'équipe d'évaluation concomitante prennent connaissance de renseignements confidentiels et, en signant la présente entente, ils conviennent de préserver la confidentialité du processus.

Confidentialité

Je sais que, en qualité de membre de l'équipe d'évaluation concomitante, j'aurai accès à des documents et à des renseignements confidentiels. À cet égard :

- Je respecterai la confidentialité de tout document et de toute information dont je prendrai connaissance avant, pendant et après la visite et la production du rapport.
- Je prendrai connaissance des renseignements confidentiels transmis par le Bureau d'agrément et l'établissement dont les programmes sont en cours d'agrément uniquement aux fins du rapport de l'évaluation concomitante.
- Pour assurer la confidentialité de l'agrément et des documents d'évaluation, j'assumerai en outre la responsabilité de détruire (déchiqueter les copies papier, supprimer les versions électroniques) tout document confidentiel dès que le rapport de l'évaluation concomitante aura été rédigé.

Privilège et propriété intellectuelle

Je sais que les documents produits dans le cadre d'une évaluation d'agrément contiennent de l'information privilégiée et qu'il m'est uniquement possible de les utiliser pour m'aider à préparer le rapport de l'évaluation concomitante. Je consens à ne pas reproduire, diffuser ni distribuer quelque document que ce soit à d'autres personnes que les membres de l'équipe d'évaluation concomitante et de l'équipe de visiteurs.

_____
Signature du membre

_____
Nom du membre en majuscules

_____
Date

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Procedures for formal review of an Accreditation Board decision to deny accreditation

1. General

In the event of a decision by the Accreditation Board to deny accreditation of a program or to terminate the accreditation of an accredited program, the Accreditation Board, if requested by the institution, will review and clarify for the institution the options with respect to the accreditation process. As one of the options, the institution may request a formal review of the decision. The other option is a request for an early re-visit. **An institution must select one option only**. This document deals with the procedures to be followed where the institution selects the formal review option.

2. Request for formal review

The institution may submit a written request that a formal review be initiated. This request must be received by the chief executive officer, principal executive officer of Engineers Canada, within 30 days of notification of the accreditation action of the Accreditation Board. To facilitate a response from the Accreditation Board, the request for a formal review must identify the points in the accreditation decision letter for which the institution requires further clarification or which the institution wishes to have reviewed. Upon receipt of such request, the chief executive officer of Engineers Canada arranges a meeting between appropriate representatives of the Accreditation Board and the institution to ensure that there is opportunity for the reasons for the decision not to accredit to be fully understood. Within 14 days of the date of conclusion of this meeting, the institution must either confirm or withdraw in writing to the chief executive officer of Engineers Canada its request for a formal review.

If the institution confirms its decision to proceed with its request for a formal review, the chief executive officer of Engineers Canada will continue with the formal review.

The chief executive officer of Engineers Canada will keep the relevant members of Engineers Canada representing the province or territory in which the institution is located apprised of the process of formal review. If the institution withdraws its request for a formal review, but desires an early re-visit, it must request the early re-visit at the time of the withdrawal of the request for formal review.

Procédures de révision officielle d'une décision de refus d'agrément rendue par le Bureau d'agrément

1. Renseignements généraux

Dans l'éventualité d'une décision du Bureau d'agrément de refuser l'agrément d'un programme ou de mettre fin à l'agrément d'un programme agréé, le Bureau d'agrément, à la demande de l'établissement, examinera les options dont ce dernier peut se prévaloir quant au processus d'agrément et le renseignera à cet égard. L'établissement a en effet la possibilité de présenter une demande de révision officielle de la décision ou une demande de nouvelle visite anticipée. **L'établissement ne peut néanmoins choisir qu'une de ces deux options**. Ce document traite des procédures à suivre dans le cas d'une demande de révision officielle.

2. Demande de révision officielle

L'établissement peut présenter, par écrit, une demande afin qu'une révision officielle soit effectuée. Cette demande doit parvenir au chef de la direction d'Ingénieurs Canada dans les 60 jours de la réception de l'avis concernant les mesures d'agrément prises par le Bureau d'agrément. Afin de faciliter la réponse du Bureau d'agrément, la demande de révision officielle doit indiquer les aspects de la lettre de décision d'agrément à propos desquels l'établissement désire d'autres éclaircissements ou au sujet desquels l'établissement demande une révision. Sur réception de cette demande, le chef de la direction d'Ingénieurs Canada fixe une réunion entre les représentants appropriés du Bureau d'agrément et de l'établissement, afin de faire comprendre clairement les raisons pour lesquelles a été prise la décision de ne pas accorder l'agrément. Dans les 14 jours qui suivent la tenue de cette réunion, l'établissement doit confirmer ou retirer sa demande de révision officielle par écrit auprès du chef de la direction d'Ingénieurs Canada.

Si l'établissement confirme sa décision de maintenir sa demande de révision officielle, le chef de la direction d'Ingénieurs Canada poursuit le processus de révision officielle.

Le chef de la direction tiendra le membre d'Ingénieurs Canada représentant la province ou le territoire où se trouve l'établissement au courant du processus de révision officielle. S'il retire sa demande de révision officielle, mais qu'il souhaite une nouvelle visite anticipée, l'établissement doit en faire la demande en même temps qu'il présente son avis de retrait.

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3. Standing committee for formal review

The formal review case will be considered by a review committee comprised of:

- The ranking member[1], without conflict, of the Board of Examiners/Academic Requirements Committee for the members of Engineers Canada representing the province or territory in which the institution is located (this individual will chair the review committee);
- The most recent past-chair of the Accreditation Board, without conflict, who is no longer serving on the board; and
- The ranking member, without conflict, of the Canadian Engineering Qualifications Board.

Committee members must be able to act in an unbiased and impartial manner. They must have no real or apparent conflict of interest or recent involvement with the institution (or with its faculty of engineering). They must not have been directly involved in the development or delivery of the program in question or in the accreditation decision-making process. All members of the Review Committee shall be licensed professional engineers in Canada. The institution and the Accreditation Board's Executive Committee can object, with demonstrated grounds with respect to conflict of interest, to any member of the Review Committee. Ruling on such objections shall be made by the Engineers Canada Board, with such rulings to be final and binding.

Once the Review Committee has been established, the chief executive officer of Engineers Canada sets an acceptable date and place for the hearing. The date of the hearing must be no later than 90 days following receipt of confirmation from the institution to proceed with its request for a formal review.

4. The formal review

A document detailing the institution's case for a formal review must be received by the chief executive officer of Engineers Canada at least 30 days before the date set for the hearing so that the Review Committee and the Accreditation Board may be provided with this information before the hearing.

[1]"Ranking member" herein refers to the chair, followed by the vice-chair, followed by the past-chair, followed by the members in the order of length of service, and is available to serve on the Committee.

3. Comité permanent de révision officielle

Le dossier de révision officielle est étudié par un comité de révision composé des membres suivants :

- Le membre par ordre hiérarchique[1], sans conflit d'intérêt, du Comité des examinateurs/des exigences en matière de formation universitaire du membres d' Ingénieurs Canada représentant la province ou le territoire où est situé l'établissement (cette personne présidera le comité de révision).
- Le dernier président sortant du Bureau d'agrément, sans conflit d'intérêt, qui ne siège plus au Bureau.
- Le membre par ordre hiérarchique, sans conflit d'intérêt, du Bureau canadien des conditions d'admission en génie.

Les membres du Comité doivent être en mesure d'agir sans préjugés et de façon impartiale. Ils ne doivent pas avoir de conflits d'intérêt, réels ou apparents, ni avoir collaboré récemment avec l'établissement (ou avec sa faculté de génie). Ils ne doivent pas avoir participé directement à l'élaboration ni à l'enseignement du programme en question, ni au processus de prise de décision d'agrément. Tous les membres du Comité de révision doivent être des ingénieurs titulaires d'un permis au Canada. L'établissement et le comité exécutif du Bureau d'agrément peuvent s'opposer, pour des raisons de conflit d'intérêt, à la nomination d'un membre du Comité de révision. La décision quant à cette opposition est prise par le conseil d'Ingénieurs Canada et elle est finale et sans appel.

Une fois le Comité de révision établi, le chef de la direction d'Ingénieurs Canada fixe une date et un lieu acceptables pour la tenue de l'audience. L'audience a lieu dans les 90 jours qui suivent la réception de la confirmation, de la part de l'établissement, de maintenir sa demande de révision officielle.

4. Révision officielle

Le chef de la direction d'Ingénieurs Canada doit recevoir, au moins 30 jours avant la date fixée pour l'audience, un document exposant en détail les motifs pour lesquels l'établissement demande une révision officielle, et ce, afin que le Comité de révision et le Bureau d'agrément puissent disposer de ces renseignements avant la tenue de l'audience.

[1]Président, vice-président, président sortant ou l'un des membres par ordre d'ancienneté, disponible pour siéger au Comité de révision.

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This document must present reasons why the institution is challenging the decision of the Accreditation Board not to accredit the program. The possible grounds for challenging the decision are:

- evidence of errors of fact,
- evidence of failure of the Accreditation Board to conform to its published procedures,
- reliance by the Accreditation Board on criteria or evidence which are insufficient or inappropriate in light of the Accreditation Board's published accreditation criteria and procedures,
- conflict of interest.

With the document detailing the institution's case, the institution should also file any other documents or written material on which the institution intends to rely at the hearing. This material will be provided to the Accreditation Board and the Review Committee prior to the hearing.

5. Authority of the Review Committee

The Review Committee is charged by the Engineers Canada Board to review the stated grounds for the formal review. In particular the Review Committee is charged with determining whether valid grounds as defined in Section 4, above, have been demonstrated and, if so, whether these grounds could have affected the decision. The Review Committee does not consider improvements to the program made subsequent to the accreditation decision.

6. Materials considered by the Review Committee

As described in Section 4, the institution must submit documentation describing the grounds for challenging the decision. The Accreditation Board may submit written materials responding to the issues raised by the institution and/or respond at the hearing to the issues that were raised in the documentation. Any written materials from the Accreditation Board must be submitted to the chief executive officer of Engineers Canada at least 15 days before the date of the hearing for distribution to the institution and the Review Committee. Additional documentation from the institution which responds to the submission by the Accreditation Board (if such occurs) may be presented by the institution to the Review Committee and the Accreditation Board at any time prior to the commencement of the hearing.

All additional documentation must be based on information that was presented to the Accreditation Board or its representatives up to the time of the challenged accreditation decision.

Ce document doit indiquer les raisons pour lesquelles l'établissement conteste la décision du Bureau d'agrément de ne pas agréer le programme. Les motifs qu'il est possible d'invoquer pour contester la décision sont :

- l'existence d'une erreur de fait,
- l'omission par le Bureau d'agrément de se conformer à ses procédures publiées,
- le recours par le Bureau d'agrément à des normes ou à des preuves qui sont insuffisantes ou inappropriées à la lumière des Normes et procédures d'agrément publiées du Bureau d'agrément,
- un conflit d'intérêt.

Le document énonçant les motifs de l'établissement doit aussi être accompagné de tout autre document ou pièce sur lesquels l'établissement compte se fonder lors de l'audience. Ces documents doivent être mis à la disposition du Bureau d'agrément et du Comité de révision avant la tenue de l'audience.

5. Fonction du Comité de révision

Le Comité de révision est chargé par le conseil d'Ingénieurs Canada de revoir les motifs déclarés justifiant la révision officielle. Le Comité de révision est tout particulièrement chargé de déterminer si des motifs valables, tels que définis à la section 4 ci-dessus, ont été démontrés et, le cas échéant, si ces motifs pourraient avoir influé sur la décision. Le Comité de révision ne tient pas compte des améliorations apportées au programme après la décision d'agrément.

6. Documents examinés par le Comité de révision

Tel que décrit à la section 4, l'établissement doit soumettre de la documentation énonçant les motifs de son opposition à la décision. Le Bureau d'agrément peut soumettre par écrit des textes visant à répondre aux motifs d'opposition soulevés par l'établissement et/ou y répondre au cours de l'audience. Ces pièces écrites doivent être remises au chef de la direction d'Ingénieurs Canada au moins 15 jours avant la tenue de l'audience, et ce, afin d'être transmises à l'établissement et au Comité de révision. Tout document supplémentaire en réponse aux pièces soumises par le Bureau d'agrément (le cas échéant) peut être déposé par l'établissement au Comité de révision et au Bureau d'agrément en tout temps avant le début de l'audience.

Ces documents supplémentaires doivent être fondés sur l'information qui a été soumise au Bureau d'agrément ou à ses représentants avant la décision d'agrément qui est contestée.

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Clarifications, observations or rebuttals concerning any of these written materials are made orally in the hearing. In the hearing, the institution and the Accreditation Board may present additional evidence orally so long as it is confined to conditions and circumstances prevailing up to the time of the challenged accreditation decision.

7. Representing at the hearing

The Accreditation Board is represented by the chair of the Accreditation Board (or the chair's designate) and by any others chosen by the chair of the Accreditation Board or requested to be present by the chair of the Review Committee.

The institution is represented by administrative officers with responsibility for the program and any others requested to be present by the chair of the Review Committee.

Engineers Canada may be represented as an observer by its president (or the president's designate) and chief executive officer.

The Review Committee may engage legal counsel to act as a legal advisor during the hearing as well as during its deliberations. In that the proceedings are not judicial in nature, neither the Accreditation Board nor the institution may bring legal counsel to the hearing.

The hearing before the Review Committee is not open to the public. Attendance at the hearing by anyone other than the representatives listed above may be only with permission of the chair of the Review Committee in consultation with the chief executive officer of Engineers Canada.

8. Conduct of the review by the committee

The chair of the Review Committee calls upon the designated representative of the institution to state its case, including reference to submitted documents. Additional details may be provided by other representatives of the institution who are present. Representatives of the Accreditation Board are given the opportunity to respond fully to the written submission and to the initial presentation by the institution. Both parties are given an opportunity to ask questions, provide observations and clarify positions. Members of the Review Committee may ask questions, review documentation and raise relevant issues at any time.

When the chair of the Review Committee is satisfied that all relevant evidence has been presented and the parties have had adequate opportunity to present their arguments and positions,

Les éclaircissements, observations ou réfutations concernant l'un quelconque de ces documents écrits sont effectués verbalement à l'audience. Lors de celle-ci, l'établissement et le Bureau d'agrément peuvent également présenter verbalement des preuves supplémentaires, à condition qu'elles se limitent aux conditions et aux circonstances qui avaient cours avant la décision d'agrément qui est contestée.

7. Représentation à l'audience

Le Bureau d'agrément est représenté par le président du Bureau d'agrément (ou une personne désignée par celui-ci) et par toute autre personne choisie par le président du Bureau d'agrément ou invitée à assister à l'audience par le président du Comité de révision.

L'établissement est représenté par les administrateurs responsables du programme et par toute autre personne invitée à assister à l'audience par le président du Comité de révision.

Ingénieurs Canada peut être représenté, à titre d'observateur, par son président (ou une personne désignée par celui-ci) et par le chef de la direction.

Le Comité de révision pourra avoir recours à un avocat qui agira à titre de conseiller juridique pendant l'audience, ainsi que lors de ses délibérations. Comme les procédures ne sont pas de nature judiciaire, ni le Bureau d'agrément, ni l'établissement ne pourront être accompagnés d'un conseiller juridique à l'audience.

Le public n'est pas invité à assister à l'audience devant le Comité de révision. Toute personne autre que les représentants mentionnés ci-haut ne pourra assister à l'audience qu'avec la permission du président du Comité de révision, qui aura préalablement consulté à cet égard le chef de la direction d'Ingénieurs Canada.

8. Déroulement de la révision menée par le Comité

Le président du Comité de révision invite le représentant désigné de l'établissement à exposer son cas en faisant renvoi aux documents soumis. Des détails supplémentaires peuvent être fournis par les autres représentants de l'établissement qui sont présents. Les représentants du Bureau d'agrément ont la possibilité de réagir sans réserve aux documents écrits et à la présentation initiale de l'établissement. Les deux parties peuvent poser des questions, faire des observations ou éclaircir leur position. Les membres du Comité de révision peuvent, en tout temps, poser des questions, revoir la documentation et soulever des questions pertinentes.

Lorsque le président du Comité de révision est convaincu que toutes les preuves pertinentes ont été présentées et que les parties ont eu l'occasion suffisante de présenter leurs arguments

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each party is invited to present a brief closing summary statement. All members of the Review Committee must be present for the full presentation of all the evidence.

No document filed with the Review Committee or information, written or oral, presented at the hearing will be transmitted or revealed to any other party by the Review Committee, the Accreditation Board, Engineers Canada or their representatives. Any such information may be disclosed by the institution provided that it is disclosed in its entirety.

9. Recommendations and decisions

The Review Committee decides on its recommendation in an in-camera session following the hearing. The decision is made by a majority of members of the Review Committee. The Review Committee reports its recommendation in writing, together with a summary of the evidence and the reasons for the recommendation, to the Engineers Canada Board within 30 days of the conclusion of the hearing. While a consensus report is desirable, all members nevertheless have the right to provide an appendix to the report providing their opinions. Immediately thereafter, the chief executive officer transmits copies of the Review Committee's report to the institution and to the Accreditation Board. The Review Committee may make one of the following recommendations:

9.1 The decision of the Accreditation Board not to accredit the program under review should be upheld. The reasons for upholding the Accreditation Board decision are:

9.1.1 the decision of the Accreditation Board was not affected by any significant error of fact contained in the documentation or other information before the Accreditation Board in arriving at its decision; and

9.1.2 the Accreditation Board, in reaching its decision, conformed to its published procedures; and

9.1.3 the Accreditation Board, in reaching its decision, used sufficient and appropriate criteria consistent with its published criteria; and

9.1.4 no conflict of interest has been demonstrated.

Therefore, the Review Committee would recommend to the Engineers Canada Board that there be no change in the action taken by the Accreditation Board regarding the accreditation of

et leur position, chaque partie est invitée à présenter une courte déclaration de clôture. Les membres du Comité de révision doivent tous assister à la présentation intégrale de toutes les preuves.

Nul document déposé auprès du Comité de révision ou nul renseignement écrit ou verbal présenté à l'audience ne sera transmis ou révélé à une autre partie par le Comité de révision, le Bureau d'agrément, d'Ingénieurs Canada ou leurs représentants. Tout renseignement de ce genre peut être révélé par l'établissement, à condition qu'il soit révélé dans son intégralité.

9. Recommandations et décisions

Le Comité de révision décide de sa recommandation lors d'une séance à huis clos après l'audience. La décision est prise par une majorité des membres du Comité. Le Comité signifie sa recommandation par écrit, accompagnée d'un résumé de la preuve et des raisons de la recommandation, au conseil d'Ingénieurs Canada dans les 30 jours qui suivent la fin de l'audience. Bien qu'un rapport de consensus soit souhaitable, les membres ont tous le droit de fournir leurs opinions en annexe. Dès qu'il reçoit le rapport du Comité, le chef de la direction d'Ingénieurs Canada en transmet des copies à l'établissement et au Bureau d'agrément. Le Comité de révision peut faire l'une des recommandations suivantes :

9.1 La décision du Bureau d'agrément de ne pas agréer le programme faisant l'objet de la révision devrait être annulée. Les raisons de l'annulation de la décision du Bureau d'agrément sont :

9.1.1 la décision du Bureau d'agrément n'a pas été influencée par une grave erreur de fait contenue dans la documentation ou dans tout autre renseignement, avant que le Bureau d'agrément ne prenne sa décision; et

9.1.2 le Bureau d'agrément, lorsqu'il a pris sa décision, s'est conformé à ses procédures publiées; et

9.1.3 le Bureau d'agrément, lorsqu'il a pris sa décision, s'est fondé sur des normes suffisantes et appropriées, conformément à ses normes publiées; et

9.1.4 l'existence d'aucun conflit d'intérêt n'a été démontrée.

Par conséquent, le Comité de révision recommande au conseil d'Ingénieurs Canada de ne pas modifier la décision prise par le Bureau d'agrément concernant l'agrément du programme qui fait

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the program under review.

9.2 The decision of the Accreditation Board not to accredit the program under review should be set aside. The reasons for setting aside the Accreditation Board decision are:

9.2.1 the decision of the Accreditation Board was affected by one or more significant errors of fact contained in the documentation or other information before the Accreditation Board in arriving at its decision; and/or

9.2.2 the Accreditation Board, in reaching its decision, did not conform to its published procedures; and/or

9.2.3 the Accreditation Board, in reaching its decision, used insufficient or inappropriate criteria in light of its published criteria; and/or

9.2.4 conflict of interest has been demonstrated.

Therefore, the Review Committee would recommend to the Engineers Canada Board that the matter be sent back to the Accreditation Board and that the Accreditation Board be instructed to reconsider its decision to deny or terminate accreditation of the program under review, taking into account the finding of the Review Committee.

The formal review procedure terminates with the issuance of Engineers Canada's Executive Committee's decision.

10. Reconsideration by the Accreditation Board

When the Engineers Canada Board sends the matter back to the Accreditation Board, the Accreditation Board reconsiders the accreditation decision, taking into account the Report of the Review Committee and any clarifying information it may require from that Committee or the institution. The reconsideration shall occur within 60 days of receipt of the decision from the chief executive officer. This will occur at the next regular meeting of the Accreditation Board, if such occurs within that time period, otherwise a special meeting of the Accreditation Board will be convened to hear the case. The Accreditation Board may confirm its decision to deny or terminate accreditation or it may accredit the program.

Following the Accreditation Board accreditation decision, Engineers Canada's president and chief executive officer are informed of the decision. The chief executive officer notifies the

l'objet de la révision.

9.2 La décision du Bureau d'agrément de ne pas agréer le programme faisant l'objet de la révision devrait être annulée. Les raisons de l'annulation de la décision du Bureau d'agrément sont :

9.2.1 la décision du Bureau d'agrément a été influencée par une ou plusieurs erreurs de fait importantes contenues dans la documentation ou dans tout autre renseignement, avant que le Bureau d'agrément ne prenne sa décision; et/ou

9.2.2 le Bureau d'agrément, lorsqu'il a pris sa décision, ne s'est pas conformé à ses procédures publiées; et/ou

9.2.3 Le Bureau d'agrément, lorsqu'il a pris sa décision, s'est fondé sur des normes insuffisantes et inappropriées, à la lumière de ses normes publiées; et/ou

9.2.4 l'existence d'un conflit d'intérêt a été démontrée.

Par conséquent, le Comité de révision recommande au Conseil d'Ingénieurs Canada de renvoyer la question au Bureau d'agrément et de l'enjoindre de réexaminer sa décision de refuser ou de mettre fin à l'agrément du programme qui fait l'objet de la révision, en tenant compte des constatations faites par le Comité de révision.

Le processus de révision officielle prend fin avec l'annonce de la décision du comité exécutif d'Ingénieurs Canada.

10. Réexamen par le Bureau d'agrément

Lorsque le conseil d'Ingénieurs Canada renvoie la question au Bureau d'agrément, ce dernier réexamine la décision d'agrément, en tenant compte du rapport du Comité de révision et de tout renseignement qu'il pourrait demander au Comité ou à l'établissement de lui fournir afin d'éclaircir la situation. Le réexamen s'effectue dans les 60 jours de la réception de la décision du chef de la direction. Il a lieu à la réunion ordinaire suivante du Bureau d'agrément, si cette réunion doit avoir lieu dans les délais prescrits, sinon une réunion spéciale du Bureau d'agrément est convoquée pour l'audition du cas. Le Bureau d'agrément peut alors confirmer sa décision de refuser l'agrément ou d'y mettre fin, ou il peut agréer le programme.

La décision d'agrément du Bureau d'agrément est communiquée au président et au chef de la direction d'Ingénieurs Canada. Le chef de la direction avise le doyen et le président de l'établissement au

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dean and the president of the institution of the decision. The dean is provided with a comprehensive written explanation for the decision. The institution is expected to inform students and staff of the accreditation status of the program. Such a decision by the Accreditation Board, following a reconsideration arising out of a formal review is not subject to further formal review.

11. Special visit

In the event that the Accreditation Board confirms its decision to deny or terminate accreditation after a formal review has resulted in a finding that the decision of the Accreditation Board not to accredit the program under review should be set aside, the institution shall have the option of requesting a special visit within 14 days of being notified of the confirmation of the decision to deny or terminate. The special visit request will not require documentation justifying the visit but the institution may provide documentation supporting its request. The Accreditation Board shall include a special visit to the institution within the current accreditation cycle. Best efforts will be made to complete the visit prior to the next Accreditation Board decision meeting. The decision resulting from the special visit is final and cannot be the subject of a request for formal review.

12. Costs

Should the Review Committee recommend that the Accreditation Board's decision to deny or terminate accreditation be upheld, the Review Committee expenses are borne by the institution; otherwise, they are borne by Engineers Canada. The institution and the Accreditation Board are each responsible for their own expenses in being represented at the hearing.

Effective June 2006
Updated: October 2021

sujet de la décision. Le doyen recevra des explications écrites complètes concernant la décision. L'établissement devra informer les étudiants et le personnel quant à la situation du programme en matière d'agrément. Cette décision prise par le Bureau d'agrément au terme de la révision officielle ne peut faire l'objet d'une autre révision officielle.

11. Visite spéciale

Si le Bureau d'agrément confirme sa décision de refuser l'agrément ou d'y mettre fin après que, à l'issue de la révision officielle, il a été conclu que la décision du Bureau d'agrément de ne pas agréer le programme en cause devrait être annulée, l'établissement doit avoir la possibilité de présenter une demande de visite spéciale dans les 14 jours qui suivent l'avis de confirmation de la décision du Bureau d'agrément de refuser l'agrément ou d'y mettre fin. L'établissement n'est pas tenu de fournir de la documentation pour justifier cette demande de visite, mais il peut en fournir à l'appui de sa demande. Le Bureau d'agrément doit prévoir une visite spéciale à l'établissement dans le cycle d'agrément en cours. Tout sera mis en œuvre pour que cette visite ait lieu avant la prochaine réunion de décision du Bureau d'agrément. La décision prise à l'issue de la visite spéciale est finale et ne peut faire l'objet d'une demande de révision officielle.

12. Coûts

Si le Comité de révision recommande le maintien de la décision du Bureau d'agrément de refuser l'agrément ou d'y mettre fin, les dépenses du Comité sont à la charge de l'établissement; autrement, elles sont à la charge d'Ingénieurs Canada. L'établissement et le Bureau d'agrément assument chacun leurs propres dépenses de représentation à l'audience.

En vigueur en juin 2006
Mise à jour : octobre 2021

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Interpretive statement on Engineering Design

The Accreditation Board develops interpretive statements to clarify the intent underlying certain key expectations which generate inquiries that are not otherwise covered by the Accreditation board criteria. The following Interpretive Statement on Engineering Design offers clarity on the definition as it relates to criterion 3.4.4.5 and Graduate Attribute 4.

It is recognized that the process, skills, and competencies associated with design are fundamental to the practice of engineering. A key feature of good engineering design education is the instilling of a mindset of creative exploration of a range of approaches to problems framed as complex, open-ended, iterative, and multidisciplinary. The process of making decisions in engineering design requires the use of well-founded skills, competencies and knowledge.

Design education relates to the development of students who approach the design process with goals related to exploring the range of possibilities to meet objectives as set out in problems they face. Design engineers will consider sets of constraints, engineering, computational and scientific tools that can be brought to bear, and the requirements of the problem in arriving at solutions. These solutions are evaluated for their fit in meeting the objectives and also, but of no less importance, their societal, economic, health and safety, as well as regulatory factors as appropriate.

In order to aid Higher Education Institutions (HEIs) and program visitors in consistently assessing the presence of engineering design, a statement of the limitations or what may be excluded from the activity of design can be useful.

What engineering design is not

Engineering design is not being effectively accomplished if the following characteristics are present:

- immediate or clear solutions
- a single, correct answer
- solutions relating directly to component specification or sizing.

Énoncé d'interprétation sur la conception en ingénierie

Le Bureau d'agrément rédige des énoncés d'interprétation afin d'expliciter les motifs sous-tendant les principales attentes qui suscitent de nombreuses demandes de renseignements et qui ne sont pas définies explicitement dans les normes d'agrément du Bureau d'agrément. L'Énoncé d'interprétation suivant clarifie la définition liée aux norme 3.4.4.5 et à la qualité requise des diplômés 4.

Il est reconnu que le processus, les habiletés et les compétences associés à la conception sont fondamentaux dans l'exercice du génie. Un des aspects importants d'une bonne formation en conception en ingénierie consiste à inculquer une attitude d'exploration créative d'un éventail d'approches à des problèmes énoncés comme étant complexes, ouverts, itératifs et multidisciplinaires. Le processus décisionnel en conception en ingénierie exige le recours à des habiletés et à des connaissances bien maîtrisées.

La formation en conception aide les étudiants à élaborer une démarche relative au processus de conception qui leur permet d'explorer une vaste gamme de possibilités pour atteindre les objectifs et surmonter les difficultés auxquelles ils se butent. Les ingénieurs-concepteurs appliquent des outils informatiques et scientifiques et tiennent compte des ensembles de contraintes, des outils d'ingénierie, informatiques et scientifiques qui peuvent entrer en jeu, et des exigences à satisfaire pour en arriver à des solutions. Ils évaluent ces solutions du point de vue de leur capacité à satisfaire aux objectifs et aussi, ce qui est tout aussi important, en fonction de facteurs économiques, de santé et de sécurité ainsi que des facteurs réglementaires, selon le cas.

Pour aider les établissements d'enseignement supérieur et les visiteurs de programmes à évaluer systématiquement la présence de conception en ingénierie, il pourrait être utile d'établir un énoncé des limites ou des aspects qui pourraient être exclus de l'activité de conception.

Ce que la conception en ingénierie n'est pas

La conception en ingénierie n'est pas abordée efficacement si les caractéristiques suivantes sont présentes :

- des solutions immédiates ou claires;
- une seule bonne réponse;
- des solutions se rapportant directement à la spécification ou au dimensionnement de composants

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As noted above, component specification and sizing exemplify a key feature that distinguishes design. If a student encounters a problem with accomplishing a task and needs to explore ways to achieve the goals within constraints, then the development and assessment of a solution can be considered as design. On the other hand, if the problem requires a student to specify a size or particular component to accomplish a task, then the design aspect is significantly diminished. Notably, problems that involve the specification and sizing based on standard tables and pre-engineered-type products may be considered more as analysis than design. It is also recognized that different disciplines may have different approaches to engineering design. If a learning activity is framed appropriately for the level of design, then this type of analysis may be considered introductory design. In engineering disciplines, where design relies heavily on codes and standards, some flexibility in decision-making must be included at all levels.

What engineering design includes

Conversely, effective engineering design brings together a variety of skills related to design activity and may also involve skills specific to a technical discipline or multiple disciplines as needed. While practitioners bring varied approaches to design as applied to problems within their fields, some overarching characteristics of appropriate design include, but are not limited to:

- development or fostering of creativity
- inclusion of open-ended problems
- development and use of modern design theory and methods
- needs or scope identification
- consideration of constraints such as:
  - health and safety,
  - sustainability,
  - environmental,
  - ethical,
  - security,
  - economic,
  - compliance with regulatory aspects,
  - universal design issues (including societal, cultural and diversification facets)
  - aesthetics and human factors
- formulation of problem statements and specifications
- consideration of alternative solutions and decision-making

Comme indiqué ci-dessus, la spécification et le dimensionnement de composants illustrent une caractéristique clé qui distingue la conception. Si un étudiant se bute à un problème dans l'accomplissement d'une tâche et doit trouver des façons d'atteindre les objectifs dans le respect de certaines contraintes, alors le développement et l'évaluation d'une solution peuvent être considérés comme de la conception. Par contre, si le problème exige de l'étudiant qu'il précise une taille ou un composant particulier pour accomplir une tâche, alors l'aspect conception est considérablement réduit. Il convient de noter que les problèmes de spécification et de dimensionnement fondés sur des tables standard et des produits préfabriqués peuvent être considérés comme relevant davantage de l'analyse que de la conception. Il est également reconnu que les démarches en conception en ingénierie peuvent varier en fonction des disciplines. Si une activité d'apprentissage est élaborée de façon appropriée au niveau de conception, ce type d'analyse pourrait cependant être considéré comme de la conception de niveau introduction. Dans les disciplines du génie où la conception repose fortement sur des codes et des normes, il est essentiel d'inclure une certaine flexibilité dans le processus décisionnel à tous les niveaux.

Ce que la conception en ingénierie comprend

Inversement, la conception en ingénierie efficace fait appel à une variété d'habiletés se rapportant à l'activité de conception et peut aussi faire intervenir des habiletés propres à une discipline technique ou à de multiples disciplines, selon les besoins. Bien que les praticiens utilisent diverses approches de conception qui s'appliquent aux problèmes relevant de leur domaine, certaines caractéristiques importantes d'une conception appropriée comprennent notamment les suivantes :

- développement ou stimulation de la créativité;
- inclusion de problèmes ouverts;
- élaboration et utilisation de théories et de méthodes de conception modernes;
- détermination des besoins ou de la portée;
- prise en compte de contraintes telles que
  - la santé et la sécurité,
  - la durabilité,
  - l'environnement,
  - l'éthique,
  - la sûreté,
  - l'économie,
  - la conformité aux aspects réglementaires,
  - des enjeux universels en matière de conception (y compris les aspects sociaux, culturels et de diversification),
  - des facteurs esthétiques et humains;
- formulation d'énoncés et de spécifications de problèmes;
- prise en compte de solutions de rechange et prise de décision;

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- feasibility
- risk analysis
- production, manufacturing, or implementation processes
- detailed system description and documentation
- testing, prototyping, modelling, and validation
- effective (multi-disciplinary) teamwork and communication skills

Engineering design is a culminating aspect of program integration and demonstrates connections between the technical skills and knowledge taught in engineering programs. As such, appropriate design education weaves through programs as a connecting thread. In a well-configured program, a design course would occur in every academic year at a level commensurate with a student's abilities. Typically, design activities would help students build communication skills and present opportunities for teamwork. Successful achievement of the graduate attribute of design can be measured by the ability of a program to develop students who display the qualities associated with an effective design engineer. These qualities relate to competence in the aspects and skills described as being part of the overarching characteristics of design.

The process of design differs across disciplines and in different geographic regions, but key elements of the design process generally encompass:

- establishment of needs and description of scope in consideration of project stakeholders
- definition of objectives and criteria, including goals, constraints, and available resources
- identification of universal design needs
- synthesis, including evaluation of alternatives and descriptions of tools and techniques
- analysis
- execution, including computation, prototyping, modelling, and/or implementation
- validation and testing, including acceptance and evaluation
- reporting, including descriptions of the methods and processes applied to the design activity, recommendations, and statements on the limitations and constraints.

- faisabilité;
- analyse des risques;
- processus de production, de fabrication ou de mise en œuvre;
- description et documentation détaillées de systèmes;
- essais, prototypage, modélisation et validation;
- travail d'équipe efficace (multidisciplinaire) et compétences en communication.

La conception en ingénierie est un aspect culminant de l'intégration d'un programme et démontre les liens entre les habiletés et connaissances techniques enseignées dans les programmes. Ainsi, la formation appropriée à la conception en ingénierie s'insère dans les programmes comme un fil conducteur. Dans un programme bien configuré, la conception devrait être abordée à chaque année à un niveau correspondant aux capacités de l'apprenant. En général, les occasions de travail d'équipe et l'utilisation des habiletés en communication feront partie des activités de conception. L'acquisition de la qualité requise « Conception » peut être mesurée par la capacité d'un programme à former des étudiants qui démontrent les qualités associées à un ingénieur-concepteur efficace. Ces qualités se rapportent à la compétence dans les aspects et les habiletés décrits comme faisant partie des grandes caractéristiques de la conception.

Le processus de conception en ingénierie diffère selon les disciplines et les régions géographiques, mais il peut englober les éléments clés suivants :

- l'établissement des besoins et la description de la portée en tenant compte des parties prenantes du projet;
- la définition des objectifs et des critères, y compris les buts, les contraintes et les ressources disponibles;
- l'établissement des besoins universels en matière de conception;
- la synthèse, y compris l'évaluation des solutions de rechange et la description des outils et techniques;
- l'analyse;
- la mise en œuvre, l'exécution, comprenant le calcul, le prototypage, la modélisation et/ou la construction;
- les vérifications, la validation et les essais, comprenant l'acceptation et l'évaluation;
- la production de rapports, y compris la description des méthodes et des processus appliqués à l'activité de conception, les recommandations, et l'énoncé des limites et contraintes.

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Design at all points in the curriculum of a program, from introductory through intermediate to advanced levels, follows this defined process or some appropriate variation. As the competency of the designer increases, the complexity of the problem, efficacy of the solution, and sophistication of the tools brought to bear on the problem will also increase. It is expected that students gain appreciation for the appropriateness of a design within the context of the problem to be solved. This can be accomplished by consideration of technological and economic issues, in addition to a demonstrated ability to understand the level of complexity suited for the problem. This type of sophistication in assessment of design by the student advances as the program progresses from entry (first-year) to senior-level learning activities. Assessment of students' engineering design skills should focus on the competencies they are expected to develop throughout the process.

Descriptions of engineering design

Engineering design can be considered as having multiple levels. As a student progresses through their engineering programs, design experiences will expand to more complex and open-ended problems. By the end of a student's education, they are exposed to a range of design experiences and are able to employ tools and resources to arrive at solutions. It is through this exposure that students come to appreciate the value of design at levels appropriate to their abilities, skillsets, and understanding. Students will then be able to make judgements of their own and present designs for evaluation with respect to validity, feasibility, economics, and practicality. In order to consistently identify engineering design within a program, the following descriptions are presented to delineate the types of activities and outcomes that are appropriate for common design exercises.

1. **Introductory**: Where design often follows an algorithmic approach and set standards or rules are applied. While different techniques can be used, and alternative solutions can be found, usually these converge on essentially the same final result. At this level, students are developing skills in identifying design characteristics as they learn to use these within the context and at a level appropriate to their knowledge and skillsets. The process of design should be clearly defined and understood.

2. **Development**: Where problems are clearly defined but differing solutions can be found, often by taking varying paths towards solving or dealing with a set of objectives. At this level, a small group of solutions with similar

À toutes les étapes d'un programme d'études, du niveau introduction au niveau avancé, en passant par le niveau intermédiaire, la conception suit ce processus défini ou une variante appropriée. À mesure que le concepteur gagne en compétence, la complexité du problème, l'efficacité de la solution et la sophistication des outils appliqués au problème augmenteront de la même façon. On s'attend à ce que les étudiants en viennent à mesurer l'adéquation d'une conception dans le contexte du problème à résoudre. Ils peuvent y parvenir en considérant les enjeux technologiques et économiques, en plus de démontrer leur capacité à comprendre le niveau de complexité propre au problème. Ce genre de raffinement dans l'évaluation d'une conception évolue à mesure que les activités d'apprentissage progressent de la première à la dernière année. L'évaluation des compétences des étudiants en conception en ingénierie devrait être axée sur les compétences à acquérir pendant le processus.

Descriptions de la conception en ingénierie

La conception en ingénierie peut être considérée comme revêtant plusieurs niveaux. À mesure que l'étudiant progresse dans son programme de génie, les expériences de conception s'étendront à des problèmes ouverts et plus complexes, de sorte qu'à la fin de sa formation, il aura été exposé à un éventail d'expériences de conception et sera en mesure d'employer des outils et des ressources toujours plus raffinés pour arriver à des solutions. C'est à travers cette exposition que l'étudiant en vient à reconnaître la valeur de la conception à des niveaux appropriés à ses capacités, ses habiletés et sa compréhension. L'étudiant sera alors capable de juger ses propres conceptions et celles qui lui sont présentées et de les évaluer en fonction de leur validité, de leur faisabilité, de leurs aspects économiques et de leur utilité. Afin de cerner de façon systématique la présence de conception en ingénierie dans un programme, nous présentons les descriptions suivantes pour définir les types d'activités et les résultats subséquents qui sont appropriés pour les exercices de conception courants.

1. **Introduction** : Là où la conception suit souvent une approche algorithmique et que des normes et des règles établies sont appliquées. Bien que différentes techniques puissent être utilisées et que des solutions de rechange puissent être trouvées, celles-ci convergent généralement vers le même résultat final. À ce niveau, les étudiants apprennent à cerner les caractéristiques de la conception à mesure qu'ils apprennent à les utiliser dans le contexte et à un niveau correspondant à leurs connaissances et leurs habiletés. Le processus de conception devrait être clairement défini et compris.

2. **Développement** : Là où les problèmes sont clairement définis, mais où il est possible de trouver des solutions différentes, souvent en suivant divers parcours vers la résolution ou la gestion de l'ensemble d'objectifs. À ce

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characteristics are typically found at the end of the design process exercise. Managing constraints and objectives are commonly approached using well-established methods and a clear process.

3. **Complex**: Where a clear path to a solution is not generally apparent. Often this level involves bringing together differing methods for handling conflicting objectives, decision making, and constraints to recognize new and unforeseen solutions. In some disciplines, design relates primarily to technology selection, development, optimization and sizing. This work may fall outside the domain of design codes.

As described above, learning opportunities per year/level can be assigned at the discretion of the program. However, programs are encouraged to distribute engineering design activities throughout all the years of a program and not solely via capstone projects. It is noted that different engineering disciplines and pedagogies will require tailored approaches to assess engineering design content.

It is recognized that design experiences are typically handled and captured well in entry-level activities (i.e. first-year) and capstone design projects. While culminating significant design experiences (i.e. capstone projects) are usually given highest value in the design chain or sequence, valuing the entirety of the chain is important for imparting a more comprehensive view of design to students. The intermediate level design activities, usually found in the second and third years of the program, are often difficult to differentiate from engineering science. These intermediate-level experiences generally involve development of skills in parallel with the design work. Appropriate handling of these two aspects is crucial to the development of high-quality design skills.

In assessing design, program visitors will consider the extent and quality to which students are presented with each of the levels of design. Further, program visitors will assess how this leads to an overarching understanding of design, in context of the discipline, creation, development, construction of devices, processes, systems, and methods both within the field and in interdisciplinary examples.

niveau, on trouve généralement à la fin de l'exercice de conception un petit groupe de solutions ayant des caractéristiques semblables. Le traitement des contraintes et des objectifs suit généralement une démarche utilisant des méthodes bien établies et un processus clair.

3. **Complexité** : Là où un cheminement clair vers une solution n'est généralement pas apparent. Ce niveau exige souvent de conjuguer des méthodes différentes pour gérer des objectifs conflictuels, la prise de décision et les contraintes afin de reconnaître des solutions nouvelles et imprévues. Dans certaines disciplines, la conception est principalement liée au choix de la technologie, à la mise au point, à l'optimisation et au dimensionnement. Il est possible que ces travaux ne relèvent pas du domaine des codes de conception.

Comme il est indiqué précédemment, les occasions d'apprentissage par année ou par niveau sont distribuées à la discrétion du programme. Toutefois, les programmes sont encouragés à répartir les activités de conception en ingénierie sur toutes les années et de ne pas les réserver aux projets de fin d'études. Il est à noter qu'il sera nécessaire d'adapter les démarches aux différentes disciplines et pédagogies pour évaluer le contenu en conception en ingénierie.

Il est reconnu que les expériences de conception sont généralement bien abordées et cernées dans les activités de niveau initiation (c.-à-d. en première année) et dans les projets de fin d'études. Si la plus grande valeur dans la chaîne ou séquence de conception est souvent attribuée aux expériences significatives de conception en ingénierie (projets de conception finaux), il est important de valoriser également l'entièreté de la chaîne pour donner aux étudiants un aperçu complet de la conception. Les activités de conception de niveau intermédiaire (habituellement au cours des deuxième et troisième années du programme) sont souvent difficiles à différencier des activités de sciences du génie. Ces expériences de niveau intermédiaire visent généralement l'acquisition de compétences parallèlement au travail de conception. Le traitement approprié de ces deux aspects est essentiel à l'acquisition d'habiletés en conception de haute qualité.

Dans l'évaluation de la conception, les visiteurs de programmes doivent considérer comment, en ce qui a trait à l'étendue et à la qualité, chaque niveau de conception est présenté aux étudiants. Ils doivent aussi évaluer comment ces expériences mènent à une compréhension globale de la conception dans le contexte de la discipline et de la création, du développement et de la construction de dispositifs, processus, systèmes, et méthodes à la fois dans le cadre du domaine et d'exemples interdisciplinaires.

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Illustrative examples

To illustrate the concepts of intermediate engineering design and to provide specific examples, consider the following problems:

Multi-disciplinary engineering example

A problem of moving water up a hill and across a plain. The problem may be presented to the student as:

> *What size of pump is required to move the fluid at a prescribed rate?*

This would constitute a typical sizing or selection problem involving a single, or small set of possible answers. Alternatively, the problem could be framed as:

> *Our goal is to move the fluid from the starting point to its final destination. The quantity of fluid to be moved is given, as well as the desired time to accomplish the task. Factors to consider in finding a solution include piping, elevation, distance, flow velocity, and others. What potential solutions might be viable? What is the final selected solution and why?*

In this latter problem, the approach and specific techniques to be employed in finding solutions are not prescribed, and further, students are invited to explore options. This latter approach is more indicative of an intermediate engineering design experience. The application specific details will vary with level of the designer, from beginner (in lower years) to knowledgeable designer (near end of program) and the expectations in terms of sophistication would be commensurate. In the same way, the complexity of distinct objectives can be increased as the skill level of the designer rises. For example, the economic, environmental, and other factors can be brought to bear at appropriate levels.

Software

A problem of designing a point-of-sale system for a pizza restaurant. The problem may be presented to the students as:

> *How would you build 1) database tables (for customers, orders, pizza types, employee, oven, venue, and ingredients) and 2) user Interface (customer sign up page, customer order page)?*

Exemples indicatifs

Les problèmes suivants sont présentés à titre d'exemple pour illustrer les concepts de conception en ingénierie de niveau intermédiaire :

Génie multidisciplinaire

Problème consistant à faire monter de l'eau en sommet d'une colline et à lui faire traverser une plaine. Le problème pourrait être présenté aux étudiants comme suit :

> *Quelle taille de pompe faut-il pour déplacer le fluide à un débit prescrit ?*

Il s'agirait alors d'un problème type de dimensionnement ou de sélection comportant une seule réponse ou un petit ensemble de réponses possibles. Le problème pourrait aussi être formulé comme suit :

> *Notre objectif est de déplacer le fluide du point de départ au point d'arrivée. La quantité de fluide à déplacer est indiquée, ainsi que le délai souhaité pour l'exécution de la tâche. Les facteurs à prendre en compte pour trouver la solution comprennent, notamment, la canalisation, l'élévation, la distance, la vitesse d'écoulement, etc. Quelles solutions potentielles pourraient être viables ? Quelle est la solution finalement retenue et pourquoi ?*

Dans cet énoncé du problème, la démarche et les techniques à utiliser pour trouver les solutions ne sont pas prescrites et les étudiants sont invités à explorer diverses options. Cette approche est plus indicative d'une expérience intermédiaire de conception en ingénierie. Les détails propres à l'application varieront selon le niveau du concepteur — de concepteur débutant (au début du programme) à concepteur compétent (près de la fin du programme), et les attentes en matière de sophistication seraient proportionnelles. De même, la complexité d'objectifs distincts peut être accrue en fonction de l'augmentation du niveau de compétence du concepteur. Par exemple, les facteurs économiques, environnementaux et autres peuvent entrer en jeu aux niveaux appropriés.

Logiciel

Conception d'un système de point de vente pour une pizzeria. Le problème pourrait être présenté aux étudiants comme suit :

> *Comment établiriez-vous : 1) les tables des bases de données (pour les clients, les commandes, les types de pizza, les employés, les fours, les lieux et les ingrédients); et 2) l'interface utilisateur (page de connexion des clients, page de commande des clients) ?*

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An intermediate-level version of this problem could be presented as:

> *Create a point-of-sale system for a pizza franchise. This should include the following loose criteria.*
>
> 1. *Support multiple locations*
> 2. *Integration with food delivery services*
> 3. *Get pizza to customer quickly*
> 4. *Automatically order ingredients as needed*
> 5. *Optimize load by using an algorithm to decide which venue fulfils the order*
> 6. *Real time scaling including nodes based on demand*
> 7. *Work in different geographies*
> 8. *Make it easy for customer to signup/ order pizza*
> 9. *Integration with advertising engines*
> 10. *Proactively deciding when people want pizza and initiating advertising campaigns*
> 11. *Integrating social media and other information about your customer*
> 12. *Rewards account*

The first problem statement is more straightforward as the student is told specifically what they need to build (i.e., database schema and UI pages); this has a high-level of prescription so instructors would not see much variability. In the second statement, students are given more room to be creative – they must decide exactly what they want to do by working around the list of loose criteria.

Effective: November 2022.

Au niveau intermédiaire, le problème pourrait être présenté comme suit :

> *Créez un système de point de vente pour une chaîne de pizzerias, qui répondrait notamment aux critères suivants :*
>
> 1. *soutien à plusieurs succursales;*
> 2. *intégration aux services de livraison;*
> 3. *rapidité du service aux clients;*
> 4. *commande automatique des ingrédients au besoin;*
> 5. *optimisation des charges par l'utilisation d'un algorithme qui permettrait de décider quelle succursale exécutera la commande;*
> 6. *mise à l'échelle en temps réel, y compris des nœuds fondés sur la demande;*
> 7. *travail dans différentes régions géographiques;*
> 8. *facilité de connexion et de commande pour les clients;*
> 9. *intégration à des moteurs publicitaires;*
> 10. *décisions proactives quant au moment où les consommateurs veulent manger de la pizza et lancement de campagnes publicitaires;*
> 11. *intégration des médias sociaux et d'autres renseignements à propos des clients;*
> 12. *compte de récompenses.*

Le premier énoncé de problème est plus direct, car on dit à l'étudiant ce qu'il doit construire (schéma de base de données et pages d'interface utilisateur). Puisque les indications sont détaillées, les enseignants ne devraient pas observer une grande variabilité dans les travaux. Dans le deuxième énoncé, les étudiants peuvent exercer leur créativité — ils doivent décider exactement de ce qu'ils veulent faire en fonction d'une liste de critères généraux.

En vigueur : novembre 2022.

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Temporary Exemption for Students Going on International Exchange

1. Rationale

This Temporary Exemption for Students Going on International Exchange is a situation-limited policy intended to remove accreditation barriers to students enrolled in undergraduate engineering programs at Canadian Higher Education Institutions (HEIs) going on International Exchange as part of their degree program.

2. Definitions

For the sole purpose of this Temporary Exemption, the following terms are defined to provide clarity:

Engineers Canada's 2022-2024 Strategic Priority 1.1 – Investigate and validate the purpose and scope of accreditation:

A fundamental review of the accreditation process to understand if there is a desire to adopt a new, national academic requirement for licensure as well as an updated purpose of accreditation. This work is anticipated to address several fundamental questions around accreditation, including the role of licensed engineering professionals in the teaching of undergraduate engineering. The final deliverable of this work is a forward-looking document providing direction to Engineers Canada, including the CEAB and CEQB, to implement systems aligned with the purpose of accreditation and the academic requirement for licensure in the future.

Learning Activities:

typically consist of courses, but may include non-coursework requirements such as seminars, training sessions, or work terms as defined by the Program.

Home Institution:

The degree-granting Canadian higher education institution (HEI) that has requested Accreditation Board accreditation for an engineering degree program that satisfies the academic requirements for the practice of engineering at a professional level.

Host Institution:

The institution outside of Canada where International Exchange Students complete part of their academic studies for their undergraduate engineering degree program. These Host Institutions are recognized by Home Institutions to deliver high quality engineering education.

Exception provisoire pour les étudiants qui participent à des échanges internationaux

1. Renseignements généraux

La présente Exception provisoire pour les étudiants qui participent à des échanges internationaux est une politique temporaire qui vise à lever les obstacles liés à l'agrément qui empêchent les étudiants inscrits à un programme de premier cycle en génie dans un établissement d'enseignement supérieur (EES) canadien de participer à des échanges internationaux dans le cadre de leur programme d'études.

2. Définitions

Pour les besoins de la présente Exception provisoire, les définitions suivantes s'appliquent.

Priorité stratégique 1.1 d'Ingénieurs Canada — Examiner et valider le but et la portée de l'agrément :

Un examen approfondi du processus d'agrément pour comprendre s'il y a un désir d'adopter une nouvelle exigence nationale de formation pour l'obtention du permis d'exercice, ainsi qu'un nouveau but pour l'agrément. Ces travaux devraient permettre de répondre à plusieurs questions relatives à l'agrément, notamment le rôle des ingénieurs dans l'enseignement des programmes de premier cycle en génie. Ils donneront lieu à un document prospectif contenant des orientations destinées à Ingénieurs Canada, y compris le BCAPG et le BCCAG, en vue de la mise en œuvre de systèmes qui correspondent aux objectifs de l'agrément et des exigences de formation en vue de l'obtention du permis d'exercice.

Activités d'apprentissage :

Il s'agit généralement des cours, mais également d'autres exigences, comme la participation à des séminaires, à des formations ou à des stages, tel que le programme le définit.

Établissement d'attache :

Établissement d'enseignement supérieur (EES) canadien qui décerne le diplôme et qui a présenté une demande d'agrément au Bureau d'agrément pour un programme menant à un baccalauréat en génie qui satisfait aux exigences de formation pour l'exercice professionnel du génie.

Établissement d'accueil :

Établissement situé à l'extérieur du Canada où l'étudiant qui participe à un échange international effectue une partie de ses études dans le cadre de son programme de premier cycle en génie menant à un diplôme. La qualité de la formation offerte par l'établissement d'accueil doit être reconnue par l'établissement d'attache.

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International Exchange:

Academic study pursued by a student at a Host Institution which includes one or more Learning Activities which are taken for academic credit as part of a student's undergraduate engineering degree program at the Home Institution.

International Exchange Student:

An undergraduate student enrolled in a CEAB-accredited program or a program seeking CEAB accreditation who participates in an International Exchange at a Host Institution.

International Exchange Processes and Procedures:

The Home Institution's processes and procedures for students on International Exchange. During a CEAB accreditation evaluation, transfer credits that are granted from an International Exchange will only be accepted for meeting the academic program requirements for accreditation if the processes and procedures outlined in Section 7 of the Temporary Exemption are followed.

Accreditation Criteria cited in this document refer to the *Canadian Engineering Accreditation Board 2022 Accreditation Criteria and Procedures.*

3. Time Frame

The Temporary Exemption will be re-evaluated by the CEAB by June 2027 with a view to making a recommendation on its future status to the Engineers Canada Board, unless otherwise instructed to do so at an earlier date. Any re-evaluation will take into consideration the outcomes of Engineers Canada's 2022-2024 Strategic Priority 1.1.

4. Applicability

The Temporary Exemption only applies to International Exchange Students at a Host Institution and only if the Temporary Exemption processes and procedures outlined in Section 7 are documented and followed.

5. Scope of the Temporary Exemption

This Temporary Exemption addresses accreditation barriers to students going on International Exchange, including those criteria relating to the curriculum content that must be delivered by faculty members licensed to practice engineering in Canada, and the percentage of a program that must be completed at the Home Institution.

Échange international :

Études universitaires suivies par un étudiant dans un établissement d'accueil, lesquelles comprennent une ou plusieurs activités d'apprentissage réalisées pour l'obtention de crédits dans le cadre du programme de premier cycle en génie menant à un diplôme de son établissement d'attache.

Étudiant qui participe à un échange international :

Étudiant de premier cycle inscrit à un programme agréé par le BCAPG ou en voie d'obtenir cet agrément qui participe à un échange international dans un établissement d'accueil.

Procédures et processus relatifs aux échanges internationaux :

Procédures et processus relatifs aux échanges internationaux de l'établissement d'attache. Pendant une évaluation de l'agrément par le BCAPG, les crédits de transfert octroyés dans le cadre d'échanges internationaux seront considérés comme satisfaisant aux exigences du programme universitaire en vue de l'agrément uniquement si les procédures et les processus présentés dans la section 7 de l'Exception provisoire sont respectés.

Les normes d'agrément citées dans le présent document renvoient au document intitulé *Normes et procédures d'agrément 2022 du Bureau canadien d'agrément des programmes de génie.*

3. Calendrier

Le BCAPG réévaluera l'Exception provisoire en juin 2027, à moins qu'il ne soit chargé de le faire plus tôt, en vue de formuler une recommandation au conseil d'Ingénieurs Canada. Cette réévaluation prendra en considération les résultats de la Priorité stratégique 1.1 d'Ingénieurs Canada pour 2022-2024.

4. Applicabilité

L'Exception provisoire s'applique uniquement aux étudiants qui participent à des échanges internationaux dans un établissement d'accueil, et ce, uniquement si les procédures et les processus présentés dans la section 7 de l'Exception provisoire sont documentés et respectés.

5. Portée

La présente Exception provisoire vise à lever les obstacles liés à l'agrément auxquels se butent les étudiants qui participent à des échanges internationaux, y compris les normes relatives au contenu du programme d'études qui doit être enseigné par un membre du corps professoral titulaire d'un permis d'exercice en génie canadien et au pourcentage du programme qui doit être suivi à l'établissement d'attache.

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6. CEAB Accreditation Criteria and Procedures Considered Under this Temporary Exemption

Several CEAB Accreditation Criteria and Procedures have been identified which are affected by this Temporary Exemption:

Criterion 3.3.1 Admission: There must be documented processes and policies for admission of students. Admission involving advanced standing, prior studies, transfer credits and/or exchange studies must be in compliance with the associated Accreditation Board regulations…

The Temporary Exemption applies only to undergraduate engineering students going on International Exchange. Advanced standing, prior studies, and transfer credits for admission of students are outside the scope of this exception.

Criterion 3.3.2 Promotion and graduation: Processes and policies for promotion and graduation of students must be documented. The institution must verify that all students have met all its regulations for graduation in the program identified on the transcript and that the curriculum followed is consistent with that of the accredited program. The program name must be appropriate for all students graduating from the program.

Engineering programs with students on International Exchange are required to implement and adhere to the processes and procedures specified in Section 7. The Home Institution's International Exchange Processes and Procedures must be submitted for review by the accreditation visiting team.

Criterion 3.4.4.1 A minimum of 600 Accreditation Units (AU) of a combination of engineering science and engineering design curriculum content in an engineering program shall be delivered by faculty members holding, or progressing toward, professional engineering licensure as specified in the Interpretive statement on licensure expectations and requirements.

International Exchange is exempt from this criterion if the verification process and procedures referenced in Section 7 are followed.

Criterion 3.4.4.4 A minimum of 225 AU of engineering design curriculum content in an engineering program shall be delivered by faculty members holding professional engineering licensure as specified in the Interpretive statement on licensure expectations and requirements.

6. Normes et procédures d'agrément du BCAPG prises en compte

Plusieurs normes et procédures d'agrément du BCAPG sont touchées par la présente Exception provisoire.

Norme 3.3.1 Admission : Des politiques et des processus attestés doivent être en place en ce qui a trait à l'admission des étudiants. L'admission d'étudiants sur la base de l'intégration d'acquis, des études antérieures, des crédits de transfert et/ou des études d'échange doit être conforme aux règlements pertinents du Bureau d'agrément.

L'Exception provisoire s'applique uniquement aux étudiants participant à des échanges internationaux. L'intégration d'acquis, les études antérieures et les crédits de transfert pour les besoins de l'admission d'étudiants ne relèvent pas de la présente Exception provisoire.

Norme 3.3.2 Passage d'une année à l'autre et obtention du diplôme : Les processus et les politiques doivent être attestés. L'établissement d'enseignement supérieur doit vérifier que les étudiants se conforment à tous ses règlements en ce qui a trait à l'obtention du diplôme dans le programme indiqué sur le relevé de notes et que le programme d'études suivi est conforme à celui du programme agréé. Le nom du programme doit être pertinent pour tous les étudiants qui obtiennent un diplôme de ce programme.

Les programmes de génie dont des étudiants participent à des échanges internationaux sont tenus de mettre en œuvre et de respecter les procédures et les processus indiqués dans la section 7. Les procédures et les processus relatifs aux échanges internationaux de l'établissement d'attache doivent être soumis à l'examen de l'équipe de visiteurs.

Norme 3.4.4.1 Au moins 600 unités d'agrément, constituées d'une combinaison de cours de sciences du génie et de conception en ingénierie faisant partie d'un programme de génie, doivent être dispensées par des enseignants détenant un permis d'exercice du génie ou étant en voie de l'obtenir, conformément à l'Énoncé d'interprétation sur les attentes et les exigences en matière de permis d'exercice.

Les échanges internationaux sont exemptés de cette norme si les procédures et les processus de vérification prévus dans la section 7 sont respectés.

Norme 3.4.4.4 Au moins 225 unités d'agrément, constituées de cours de conception en ingénierie faisant partie d'un programme de génie, doivent être dispensées par des enseignants détenant un permis d'exercice du génie, conformément à l'Énoncé d'interprétation sur les attentes et les exigences en matière de permis d'exercice.

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International Exchange is exempt from this criterion if the verification process and procedures referenced in Section 7 are followed.

Criterion 3.4.8 The requirements for curriculum content must be satisfied by all students, including those claiming advanced standing, credit for prior post-secondary-level studies, transfer credits, and/or credit for exchange studies.

International Exchange is exempt from this criterion if the verification process and procedures referenced in Section 7 are followed.

Criterion 3.5.5 Professional status of faculty members: Faculty delivering curriculum content that is engineering science and/or engineering design are expected to be licensed to practise engineering in Canada…

International Exchange is exempt from this criterion if the verification process and procedures referenced in Section 7 are followed.

Appendix 1: Regulations for granting of transfer credits 1.4: There are no restrictions on transfers of credits among Accreditation Board-accredited programs; however, in all cases at least 50% of the program shall be completed at the home institution.

For International Exchange Students, this criterion is relaxed: at least 50% of the program must be completed at CEAB-accredited programs in Canada. Credits transferred based on domestic studies from programs abiding by the CEGEP credit transfer and feeder-institution credit transfer protocols described in Appendix 1 the CEAB Accreditation Criteria and Procedures will be considered part of a CEAB-accredited program.

Appendix 1: Regulations for granting of Transfer Credits clause 2.4.1: If transfer credit is granted for engineering science or engineering design, the home institution must verify, for example through a formal agreement, that the expertise, competence and professional status of the faculty are substantially equivalent to those of faculty delivering accredited programs in Canada;

International Exchange is exempt from this clause if the verification process and procedures referenced in Section 7 are followed.

Appendix 1: Regulations for granting of Transfer Credits clause 2.4.3: For transfer credits not covered under clause 2.4.1 [formal agreement between the home and exchange institution] or clause

Les échanges internationaux sont exemptés de cette norme si les procédures et les processus de vérification prévus dans la section 7 sont respectés.

Norme 3.4.8 Tous les étudiants doivent satisfaire aux exigences relatives au contenu du programme d'études, y compris les étudiants admis sur la base de l'intégration d'acquis, de crédits d'études antérieures de niveau postsecondaire, de crédits de transfert et/ou d'études d'échange.

Les échanges internationaux sont exemptés de cette norme si les procédures et les processus de vérification prévus dans la section 7 sont respectés.

Norme 3.5.5 Statut des membres du corps professoral à l'égard de la profession d'ingénieur : Les professeurs qui donnent des cours portant essentiellement sur les sciences du génie et la conception en ingénierie devraient être titulaires d'un permis d'exercice du génie au Canada.

Les échanges internationaux sont exemptés de cette norme si les procédures et les processus de vérification prévus dans la section 7 sont respectés.

Annexe 1, Règlements pour l'octroi de crédits de transferts, article 1.4 : Il n'y a pas de restrictions imposées aux transferts de crédits entre des programmes agréés par le Bureau d'agrément ; cependant, dans tous les cas, au moins la moitié (50 %) du programme doit être effectuée à l'établissement d'attache.

Ce critère est assoupli pour les étudiants qui participent à des échanges internationaux : au moins 50 % du programme doit être effectué dans le cadre de programmes agréés par le BCAPG, au Canada. Les crédits transférés conformément aux protocoles de transfert de crédit de programme de CÉGEP ou d'établissements affiliés décrits dans l'annexe 1 des Normes et procédures d'agrément du BCAPG seront considérés comme faisant partie du programme agréé par le BCAPG.

Annexe 1, Règlements pour l'octroi de crédits de transferts, article 2.4.1 : Si un crédit de transfert est accordé pour des cours en sciences du génie ou en conception en ingénierie, l'établissement d'attache doit vérifier, par exemple par le biais d'une entente officielle, que l'expertise, la compétence et le statut professionnel du corps professoral sont substantiellement équivalents à ceux des enseignants donnant les programmes d'études agréés au Canada.

Les échanges internationaux sont exemptés de cet article si les procédures et les processus de vérification prévus dans la section 7 sont respectés.

Annexe 1, Règlements pour l'octroi de crédits de transferts, article 2.4.3 : Dans le cas des crédits de transfert non visés aux articles 2.4.1 [ententes officielles entre l'établissement d'attache

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2.4.2 [substantially equivalent programs, Washington Accord signatories, jurisdictions with which Engineers Canada has a mutual recognition agreement], at least 600 AU of engineering science and engineering design (combined) and at least 225 AU of engineering design must be completed at and credit granted by the home institution.

International Exchange is exempt from this clause, but International Exchange Students are still subject to criterion 3.4.4 (A minimum of 900 AU of a combination of engineering science and engineering design: Within this combination, each of Engineering Science and Engineering Design must not be less than 225 AU). However, an International Exchange Student is not required to acquire these AUs at their Home Institution if the verification process and procedures referenced in Section 7 are followed.

7. International Exchange Processes and Procedures

The Home Institution must document the International Exchange Processes and Procedures. To implement the Temporary Exemption, the Home Institution's existing processes and procedures to evaluate transfer credits can be used.

7.1 Processes and Procedures to assess Learning Activities taken at the Host Institution

CEAB Accreditation Criteria and Procedures – Appendix 1, Regulation 1.2 requires the Home Institution to verify and provide evidence that the academic level of the Learning Activity for which credit is granted is equal to or above the academic level of the engineering program at the Home Institution. In addition, under this temporary exemption, the following processes and procedures apply:

1. The Home Institution must assess a list of proposed Learning Activities to be taken for each International Exchange Student.

   Learning Activity equivalencies must be assessed by relevant Home Institution program representative(s) (program director, equivalent, or designate) in collaboration with other faculty members with specialized disciplinary knowledge, as required. Proposed Learning Activities to be taken on International Exchange do not need to be mapped to Learning Activities at the Home Institution on a one-to-one basis. Rather, the suite of Learning Activities to be taken on International Exchange will be evaluated for substantial

et l'établissement d'accueil] ou 2.4.2 [programmes substantiellement équivalents, signataires de l'Accord de Washington, zones de compétence avec lesquelles Ingénieurs Canada a établi une entente de reconnaissance mutuelle], au moins 600 UA en sciences du génie et conception en ingénierie (combinées) et au moins 225 UA en conception en ingénierie doivent être obtenues à l'établissement d'attache et créditées par celui-ci.

Les échanges internationaux sont exemptés de cet article, mais les étudiants qui participent à des échanges internationaux sont toujours assujettis à la norme 3.4.4 (minimum de 900 UA dans une combinaison de sciences du génie et de conception en ingénierie ; de ce total, au moins 225 UA doivent être liées aux sciences du génie et au moins 225 UA à la conception en ingénierie). Cependant, ces étudiants ne sont pas tenus d'acquérir ces UA à leur établissement d'attache si les procédures et les processus de vérification prévus dans la section 7 sont respectés.

7. Procédures et processus relatifs aux échanges internationaux

L'établissement d'attache doit consigner l'ensemble des procédures et des processus relatifs aux échanges internationaux. Pour les besoins de la mise en œuvre de l'Exception provisoire, il peut utiliser ses procédures et les processus relatifs à l'évaluation des crédits de transfert.

7.1 Procédures et processus d'évaluation des activités d'apprentissage suivies dans un établissement d'accueil

Conformément à l'article 1.2 de l'annexe 1 des *Normes et procédures d'agrément du BCAPG*, un établissement d'attache doit vérifier et prouver que le niveau de l'activité d'apprentissage pour lequel le crédit est accordé est égal ou supérieur au niveau du programme de génie dispensé par l'établissement d'attache. En outre, en vertu de la présente Exception provisoire, les procédures et processus suivants s'appliquent :

1. L'établissement d'attache est tenu d'évaluer la liste des activités d'apprentissage proposées qui seront suivies par l'étudiant qui participe à un échange international.

   Les équivalences d'activités d'apprentissage doivent être évaluées par un représentant du programme de l'établissement d'attache (directeur ou directrice du programme, un détenteur de poste équivalent ou une personne désignée) en collaboration avec d'autres membres du corps professoral qui possèdent des connaissances spécialisées dans la discipline, au besoin. Il n'est pas nécessaire de mettre en correspondance chacune des activités d'apprentissage proposées qui seront suivies dans le cadre d'un échange international

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equivalency on how it meets the specific program requirements for accreditation.

2. The Home Institution must have documented processes and procedures to verify that Host Institution Learning Activities for which transfer credits are granted carry at least the same number of AUs as the Home Institution leaning activities as per CEAB curriculum content categories Mathematics, Natural Sciences, Engineering Science, Engineering Design, and Complementary Studies.

   In the case of Host Institution Learning Activities with Engineering Science and/or Engineering Design content, a Home Institution program representative who is licensed to practice engineering in Canada must attest that the Host Institution Learning Activities are substantially equivalent to the Home Institution's Learning Activities.

7.2 Requirements for an Accreditation Visit

The Home Institution's processes and procedures as required by section 7.1 must be made available to the accreditation visiting team.

A description of the review process, including an indication of the person(s) responsible for signing off on Learning Activities and/or program equivalencies for the granting of transfer credits obtained on an International Exchange must be available to the visiting team. The responsible individual(s) must be prepared to describe and discuss the review process during the accreditation visit. Up to three examples of relevant documentation to demonstrate this process must be made available to the visiting team.

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avec les activités d'apprentissage d'un établissement d'attache. L'ensemble des activités d'apprentissage qui seront suivies dans le cadre d'un échange international sera plutôt évalué pour en établir l'équivalence substantielle par rapport aux exigences d'agrément d'un programme.

2. L'établissement d'attache doit mettre en place des procédures et des processus écrits pour vérifier que les activités d'apprentissage de l'établissement d'accueil pour lesquelles un transfert de crédits sera octroyé comportent au moins le même nombre d'UA que celles de l'établissement d'attache conformément aux catégories de contenu de programme mathématiques, sciences naturelles, sciences du génie, conception en ingénierie et études complémentaires du BCAPG.

   Dans le cas des activités d'apprentissage de l'établissement d'attache ayant un contenu relevant des sciences du génie ou de la conception en ingénierie, il est obligatoire qu'un représentant du programme de l'établissement d'attache titulaire d'un permis d'exercice du génie au Canada atteste que les activités d'apprentissage de l'établissement d'accueil sont substantiellement équivalentes aux activités d'apprentissage de l'établissement d'attache.

7.2 Exigences pour une visite d'agrément

L'équipe de visiteurs doit avoir accès aux procédures et aux processus de l'établissement d'attache exigés conformément à la section 7.1.

L'équipe de visiteurs doit avoir accès à la description du processus d'évaluation, y compris le nom des responsables de l'autorisation des activités d'apprentissage ou des équivalences de programme pour l'octroi du transfert des crédits obtenus dans le cadre d'un échange international. Il est impératif que ces responsables soient prêts à décrire le processus d'évaluation et à en discuter pendant la visite d'agrément. Par ailleurs, l'équipe de visiteurs doit avoir accès à un maximum de trois exemples de documents pertinents attestant de ce processus.

Approuvé en février 2023

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