



DATE: September 11, 2026

TO: Senate

FROM: Dr. David J. Hornsby, Vice-Provost (Academic and Global Learning), and Chair,
Senate Quality Assurance and Planning Committee

RE: Final Assessment Report and Executive Summary: Joint Graduate Programs in Environmental
Engineering

The purpose of this memorandum is to request that Senate approve the Final Assessment Report and Executive Summary arising from cyclical program review of the joint graduate programs in Environmental Engineering. A joint program with the University of Ottawa being offered through the Ottawa-Carleton Institute for Environmental Engineering.

The request to Senate is based on the recommendation from the Senate Quality Assurance and Planning Committee (SQAPC), which passed the following motion at its meeting of August 26, 2026:

THAT SQAPC recommends to Senate the approval of the Final Assessment Report and Executive Summary arising from the Cyclical Program Review of the joint graduate programs in Environmental Engineering.

As this cyclical program review was led by the University of Ottawa, the Final Assessment Report and Executive Summary is provided pursuant to:

- The Carleton University & University of Ottawa Joint Process Document for Joint Graduate Programs (March 11, 2025) section 5.0 which indicates that “In the case of a joint review, faculty from both institutions will work collaboratively and equally share in the workload of developing one set of process documents. The Institute will follow the timelines, required documentation, and site visit protocol as governed by only the lead institution’s IQAP and meet the requirements listed in the Quality Assurance Framework Guide section 5” and that “The Final Assessment Report and Executive Summary (including the implementation/action plan) is drafted and input is received from the Office of the Director, Program Evaluation of and the Office of Academic Programs and Strategic Initiatives. The Final Assessment Report receives the required approval(s) from each institution and once approved is posted to each university website.”
- Article 5.4.1. of the provincial Quality Assurance Framework and article 7.2.24 of Carleton's Institutional Quality Assurance Process (IQAP). Article 7.2.24.3 of Carleton’s IQAP (passed by Senate in November 2021 and ratified by the Ontario Universities Council on Quality Assurance in April 2022) stipulates that, in approving Final Assessment Report and Executive Summary ‘the role of SQAPC and Senate is to ensure that due process has been followed and that the conclusions and recommendations contained in the Final Assessment Report and Executive Summary are reasonable in terms of the documentation on which they are based.’

Any major modifications described in the Implementation Plans, contained within the Final Assessment Reports, are subject to approval by the Senate Committee on Curriculum, Admission, and Studies Policy, the Senate Quality Assurance and Planning Committee (SQAPC) and Senate as outlined in articles 7.4.1 and 5.1 of Carleton's IQAP.

Once approved by Senate, the Final Assessment Report, Executive Summary and Implementation Plan will be forwarded to the Ontario Universities' Council on Quality Assurance and reported to Carleton's Board of Governors for information. The Executive Summary and Implementation Plan will be posted on the website of Carleton University's Office of Academic Programs and Strategic Initiatives and on the website of the University of Ottawa, as required by the provincial Quality Assurance Framework and Carleton's IQAP.

Senate Motion: September 18, 2026

THAT Senate approve the Final Assessment Report and Executive Summary arising from the Cyclical Program Review of the joint Graduate Programs in Environmental Engineering.
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FINAL ASSESSMENT REPORT

Cyclical Program Review of Graduate Programs
Ottawa-Carleton Institute for Environmental Engineering (OCIENE)
Faculty of Engineering
2024-2025
April 22, 2026

I. Program(s) reviewed

- Master of Engineering Environmental Engineering
- Master of Applied Science Environmental Engineering
- Doctorate in Philosophy Environmental Engineering

II. Review process (outline of the visit)

The Final Assessment Report on the above programs was prepared from the following documents: (a) the self-study brief produced by the academic unit; (b) the post-visit external review report; and (c) commentary from the OCIENE Board of Management and the Director of the Department, Mamadou Fall, a response from Caroline Cao, Dean of the Faculty of Engineering (uOttawa), and the approval of Ron Miller, Dean of the Faculty of Engineering and Design (Carleton).

This virtual visit took place on May 15, 2025, as part of the review process for graduate programs. The review team consisted of 1) Catherine Mulligan, Concordia University; and 2) Michael McKay, University of Windsor.

For their visit, the external reviewers met with Marc Dubé, Associate Vice-Provost, Graduate and Postdoctoral Studies (uOttawa); David Hornsby, Vice-Provost and Associate Vice-President Academic (Carleton); Hashmat Khan, Associate Vice-President Academic Programs and Strategic Initiatives (Carleton); Michel Labrosse, Dean, Faculty of Engineering (uOttawa); Andrew Sowinski, Vice-Dean, Programs, Faculty of Engineering (uOttawa); Larry Kostiuik, Dean, Faculty of Engineering and Design (Carleton); and faculty members, support staff, and students.

III. Summary of program quality reports¹

a. Strengths

- Leverage faculty expertise (research, curriculum).
- Leverage infrastructure (specialized equipment, core facilities).
- Leverage geographic location (the two universities are located in close proximity to each other, to federal resources such as NRC labs, and to adjunct instructors and researchers from federal labs).
- Scope of the program (five breadth areas of study with students required to complete coursework in at least three areas).
- Relevance of curriculum (has adapted to remain relevant, addressing topical areas of study such as climate change).

b. Challenges

- Need for coordination through multiple layers of governance (two universities, three departments).
- Departmental priorities do not always align with those of the Institute (departments must be responsive to University and Faculty mandates).
- Physically separate locations can be a challenge for scheduling and course participation.
- Scope of the program (five breadth areas of study each with a suite of specialized courses that need to be staffed and resourced).
- Funding (teaching assistantships, professional development for students, events).
- Space (office space for MEng students, access to research space).
- Decline in enrolment of international students related to both current geopolitical landscape and restrictions imposed on international student visas domestically. This primarily affects the MEng program but reduction in funding has impacts program- and university-wide.

¹ Based on the documents prepared during the review process, often cited verbatim.

IV. Opportunities for program improvement²

Recommendation 1: Better coordination between universities related to course scheduling and encourage flexibility on curriculum delivery (e.g. hybrid delivery)

Recommendation 2: Promote opportunities to increase student and faculty engagement across universities

Recommendation 3: Periodic review of course offerings and reassessment of thematic breadth requirements

Recommendation 4: Increase financial support for graduate students

V. Summary and assessment of the proposed action plan³

The External Reviewers' recommendations were addressed by program leadership via an implementation plan that was considered by the Senate Program Evaluation Committee (SPEC) on April 22, 2026.

The program leadership agreed with all recommendations of the external evaluation. The actions to be taken and the timetable are clearly defined and have been endorsed by the Dean's Office.

The SPEC is satisfied with the program leadership's response and action plan.

VI. Conclusion

The review exercise confirmed the strength and stability of the programs offered, and it identified recommendations for their ongoing improvement. The members of the SPEC would like to thank the external reviewers for their detailed assessment, as well as all the stakeholders involved in this cyclical program review process.

VII. Schedule and timelines

A progress report that outlines the completed actions and subsequent results will be submitted to the evaluation committee by December 15, 2027.

The next cyclical review, led by Carleton University, will take place in no more than eight years, in 2031-2032, or according to Carleton's CPR calendar.

² Reproduced verbatim from the External Evaluation Report.

³ The academic unit's response and action plan are appended.



Unit Response and Implementation Plan

This document will be submitted to the [Ontario Universities Quality Assurance Council](#) and posted on the University's [website](#). It should be written in only one language, English in this case. At the end of the process, the document will be translated into the other language.

Faculty:

- Faculty of Engineering

Unit:

- Ottawa-Carleton Institute for Environmental Engineering (OCIE NE)

Programs evaluated:

- Master of Engineering Environmental Engineering
- Master of Applied Science Environmental Engineering
- Doctorate in Philosophy Environmental Engineering

Cyclical review period:

- 2024-2025

Submission date:

- 10/28/2024

General comments:

On July 14, 2025, the Environmental Engineering graduate program and the Ottawa-Carleton Institute for Environmental Engineering were made aware of the External Review Report produced in the context of the cyclical program evaluation. We were extremely pleased with the positive evaluation of our graduate program. Given that the Environmental Engineering graduate program and the OCIE NE have committed to providing an outstanding training and research experience, we were gratified to see that the external reviewers found that our M.Eng., M.A.Sc. and Ph.D. programs were “highly successful” and that the Institute demonstrated “ample evidence of inter-university coordination and collegiality amongst faculty and students from the two universities”. The report makes four recommendations, of which none are considered high priority. We take all the recommendations seriously and feel confident that by addressing them, our graduate program and the OCIE NE Institute will be even stronger. The recommendations and our responses are included below.

RECOMMENDATION 1: Better coordination between universities related to course scheduling and encourage flexibility on curriculum delivery (e.g. hybrid delivery)

Unit response:

The university hosting the Institute Directorship will create Fall, Winter and Summer OCIENE class schedules going forward for 3 years for all courses offered from the official list of program courses. These schedules will include all program courses offered at both universities, and hence all courses from all course codes included in the list of program courses (EVG, CVG, CHG, etc.). The generated table will be shared with the OCIENE board of management (BoM) members during the Summer term and will be used to eliminate course scheduling conflicts, suggest modifications such as hybrid course formats that may be an option for some professors, and used to promote student access and awareness of all program courses, including considerations of student travel between universities. Student accessibility to courses at both campuses will be significantly improved going forward with the O-train becoming functional across the city. In addition, Safe Walk programs exist at both UO and CU campuses to support students attending late classes and when student safety is a concern. The proposed timeline for implementation is 18 months.

Decanal response:

This will be very useful for planning and promotion of our offered courses. It is suggested not to limit it to 1 year only , rather to extend the projection horizon to 3 years.

Actions to be undertaken for recommendation 1:

Action 1
Description: Creation and distribution of three-year OCIENE class schedule between all BoM members and hence all member departments.
Priority level*: 2
Assigned to: OCIENE Director
Timeline: 18 months
Curriculum change? No

Action 2
Description: Modification of OCIENE class schedule to improve student experience.
Priority level*: 2
Assigned to: OCIENE Director
Timeline: 18 months
Curriculum change? No

RECOMMENDATION 2: Promote opportunities to increase student and faculty engagement across universities

Unit response:

A student engagement champion will be created at each university to support the re-creation of an OCIENE student chapter, affiliated with one or more international environmental engineering associations, such as the IWA Young Water Professionals Canada, Water Environment Association of Ontario Young Professionals and Students Chapter, and Air and Waste Management Association Young Professionals. The student engagement champions will be professors and members of the OCIENE. The student chapter will enhance the identity of OCIENE by hosting social events, hosting professional networking and engagement events with local professionals from government and industry, and will provide program feedback directly to the OCIENE BoM. The OCIENE Director and Associate Director will explore crowd funding at their respective universities and will contact the Air and Waste Management Association to raise funds for a student seminar presentation award to promote the seminar series and also to raise funds to support student activities. The proposed timeline for implementation is 18 months.

Decanal response:

This is a good idea. Student chapters will sometimes receive financial support from the professional society to run workshops and seminars. At the same time, students will learn leadership skills in running the Student Chapter. Industry sponsors and other creative fundraising efforts should be considered.

Actions to be undertaken for recommendation 2:

Action 1
Description: Identification of UO and CU OCIENE student chapter champion.
Priority level*: 2
Assigned to: OCIENE Director & Associate Director
Timeline: 12 months
Curriculum change? No
Action 2
Description: Re-creation of OCIENE student chapter.
Priority level*: 2
Assigned to: OCIENE Director & Associate Director
Timeline: 18 months
Curriculum change? No
Action 3
Description: Solicitation of funding to support student seminar award and student events.
Priority level*: 2

Assigned to: OCIENE Director & Associate Director
Timeline: 18 months
Curriculum change? No

RECOMMENDATION 3: Periodic review of course offerings and reassessment of thematic breadth requirements

Unit response:

Periodic review of course offerings occur yearly at the OCIENE BoM and the annual general meeting (AGM), and will be expanded to include the review of Fall, Winter and Summer OCIENE class schedules going forward for 3 years (see Recommendation 1, Action 1).

In response to the recommendation of the external evaluations to reassess breadth requirements and to increase flexibility of MASc students in the program, the BoM and AGM have recently approved an increase in class selection flexibility of students within the Institute by allowing MASc students entering the graduate program with a degree from Environmental Engineering at Carleton University to be exempt from the breadth requirement. The proposed timeline for implementation is 12 months. OCIENE MASc students are most affected by the breadth requirement of the Institute. As the University of Ottawa does not have an undergraduate degree in Environmental Engineering, MASc students from the University of Ottawa are not eligible for exemption from the breadth component.

The periodic review of course offerings in the Institute has recently resulted in the expansion of the 5th breadth area to include climate change courses, with these newly added courses in climate change including topics in the area of sustainable engineering, including circular economy and One Water. This newly expanded breadth area has resulted in the introduction of 5 new climate change courses that include sustainable engineering topics in the course work. This expansion has directly modernized the OCIENE course offerings for students. To clearly identify sustainable engineering topics in existing courses, the course descriptions of OCIENE program courses will be reviewed and updated to more explicitly identify sustainable engineering topics.

Decanal response:

This is a fine initiative and has the potential to grow the size of the program and its reputation.

Actions to be undertaken for recommendation 3:

Action 1
Description: Continued periodic review of course offerings at the OCIENE BoM and AGM meetings that will be expanded to include the review of Fall, Winter and Summer OCIENE class schedules going forward for 3 years (see Recommendation 1, Action 1).
Priority level*: 2
Assigned to: OCIENE Director
Timeline: 12 months
Curriculum change? No
Action 2
Description: An increase of flexibility in the student breadth requirement for Carleton Environmental Engineering graduates has recently been approved by both the BoM and at the AGM in response to the external evaluation recommendation. This modification in the breadth requirement will allow MASc students from Carleton University to be exempt from the breadth component.
Priority level*: 2
Assigned to: OCIENE Director
Timeline: 12 months
Curriculum change? No
Action 3
Description: The course descriptions of OCIENE program courses will be reviewed and updated to highlight sustainable engineering topics in current courses. Current courses in the program include topics on sustainable engineering.
Priority level*: 2

Assigned to: OCIENE Director
Timeline: 12 months
Curriculum change? No

RECOMMENDATION 4: Increase financial support for graduate students

Unit response:

Each academic unit within OCIENE will collaborate with their respective Faculties to explore opportunities to increase the number and diversity of scholarships, conference travel awards, and TA positions available to graduate students. This effort should also include consideration of enhanced admission scholarships for both M.A.Sc. and Ph.D. students. Given that implementation depends on Faculty-level processes, a decanal response is crucial. The proposed timeline for implementation is 4 years.

Decanal response:

TAShips, travel awards and entrance scholarships are tied to enrollment, research funding and recruitment strategies. The Faculty is committed to working with the academic units towards their goals to increase financial support for grad students.

Actions to be undertaken for recommendation 4:

Action 1
Description: Enhancing OCIENE Graduate Student Funding Opportunities
Priority level*: 2
Assigned to: OCIENE Director, departmental leadership (Ottawa and Carleton) and both Faculties
Timeline: 4 years
Curriculum change? No

[Please copy and fill the recommendation template according to the number of recommendations]

* PRIORITY LEVEL: 1. URGENT-IMMEDIATE ACTION REQUIRED 2. IMPORTANT-ACTION REQUIRED WITHIN 18 MONTHS (MAXIMUM) 3. ADVISED: DEVELOPMENT AND STRATEGY-ACTION TO BE DISCUSSED AND MUST BE IN PLACE BY MID-CYCLE (WITHIN 4 YEARS)



Program/Department Chair:

Fall

Signature

Date: 3/30/2026

Dean (uOttawa):

A handwritten signature in black ink, appearing to be "CL25", is written on a white rectangular background.

Signature

Date: 3/31/2026

Dean (Carleton):

A handwritten signature in black ink, appearing to be "L. M.", is written on a white rectangular background.

Signature

Date: 3/31/2026