
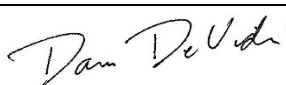


**PROGRAM(S):** CIVIL ENGINEERING (BASC),  
ENVIRONMENTAL ENGINEERING (BASC, OPTION),  
GEOLOGICAL ENGINEERING (BASC), WATER RESOURCES  
(OPTION)  
**FEBRUARY 2025**

**Program information:** *completed by AQUE Office*

Previous review period:	<b>2020-2021</b>	Next review period:	<b>2027-2028</b>
Final Assessment Report (FAR) Internal Approval Date:	<b>2/5/2024</b>		
Link to FAR:	<a href="#">Final Assessment Report</a> <sup>1</sup>		

**Signatures:**

	Required	Signature	Date
Chair/Director	<input checked="" type="checkbox"/>		2/28/2025
Dean	<input checked="" type="checkbox"/>	Mary Wells	4/7/2025
AFIW Dean	<input type="checkbox"/>		Click or tap to enter a date.
AVPA	<input checked="" type="checkbox"/>		4/4/2025
AVPGSPA	<input type="checkbox"/>		Click or tap to enter a date.

<sup>1</sup> Please note this program's FAR was approved only one year before this report was prepared, which could explain any limited progress made on the recommendations since the approval of the FAR.

**Enrollment** (past three years): *completed by AQUE Office*

	Civil Engineering	Environmental Engineering	Environmental Engineering Option	Geological Engineering	Water Resources Option
2024-25 (CURRENT YR)	567	273	4	66	0
2023-24 (LAST YR)	552	254	3	57	0
2023-23 (LAST 2YRS)	567	278	5	48	1

Based on Active Student Extract in Quest on February 26, 2025.

## Initiatives/Developments since the Final Assessment Report

N/A

## Progress update on Implementation Plan

**RECOMMENDATION 1:** Each program will conduct a review and self-assessment of their curriculum to understand how they are, and will be, educating the engineer of the future with attention to integration between the programs, balancing STEM, and non-STEM content, and incorporating flexibility.

Completed: ☐ Yes ☐ No ☒ Partially

### Progress:

- Self-assessments were completed for all programs
- The Environmental Engineering (EnvE) program went through a full curriculum review and revision
  - o Self-assessment was done to assess shortfalls of program
    - Completed through student feedback, industry input and feedback from recruitment officers
    - Result: found gaps between program and Canadian Engineering Grand Challenges and with Sustainable Engineering Goals
  - o Several changes were made:
    - Key courses were changed to better show how chemistry, microbiology, and physics intersect with the environment and in engineered systems

- Design courses were changed to introduce key hard and soft skills related to problem identification, instrumentation, data analysis, sustainability, and modelling
- Core courses were reduced to allow more flexibility and allow for more specialized learning (e.g., Energy & Climate Change, Water Resources, Pollution & Restoration, Modeling & Data Analytics and Sustainable Cities)
- A shift was made to promote cross faculty learning and knowledge integration
- A studio/project course was introduced in each program year, which mimics a successful pedagogical approach we have been using with the Architectural Engineering (AE) program
- The new EnvE curriculum was approved through the following process:
  - Approved by Civil & Environmental Engineering (CEE) department, Faculty Operations (FOPS), Faculty UG Studies Committee (FUGS), Engineering Faculty Council (EFC), and the Senate Undergraduate Council (SUC)
  - Currently awaiting Senate approval

**Next steps (if applicable):**

- All other programs (AE, Civil Engineering (CIVE), Geological Engineering (GeoE)) are currently undergoing review and revision. This effort is currently focused on the alignment of the mechanics and design courses, as well as reviewing the way we handle work term reports. Below is a summary of the changes currently being reviewed within the curriculum committee that will affect all four programs (AE, CIVE, EnvE, GeoE).
- Workterm reports 200 will be replaced with PD 11 and workterm report 400 will be removed for all 4 programs, approved through curriculum committee, department, and FUGS
- Below are specific changes currently under discussion within the program that will affect Architectural, civil and geological engineering programs:

- **AE/CIVE 105 – Mechanics 2: 0.75 Units (i.e. “super course”)**

Existing Course Description:

*Distributed forces, centroids, and moment of inertia. Introduction to foundations and fluid statics. Basic structural analysis. Plane trusses. Beam diagrams. Stress-strain-temperature relationships. Behaviour of members in tension, compression, and bending. Thin-walled pressure vessels. Friction.*

Proposed:

- Change to 0.5 Units (i.e. regular course)
- Revised Course Description:

*Distributed forces, centroids, and moment of inertia. Introduction to foundations and fluid statics. Basic structural analysis. (Plane trusses, frames, machines). Three-dimensional*

*force systems, moments, couples, and resultants. Three-dimensional equilibrium problems. Beam diagrams. Stress-strain-temperature relationships. Behaviour of members in tension, compression, and bending. Thin-walled pressure vessels. Friction.*

Rationale:

- Intro to foundations and fluid statics is covered in AE280 (confirmed) and CIVE280
- Thin-walled pressure vessels are covered in CIVE 306
- With these deletions, the course no longer warrants being a “super-course”
- Swap topics with 204 to keep 105 more aligned with statics versus solid mechanics – more focus on fewer topics may aid in retention of material

- **AE/CIVE 204 – Solid Mechanics:** 0.5 Units

Existing Course Description:

*Three-dimensional force systems, moments, couples, and resultants. Three-dimensional equilibrium problems. Shear stresses in beams. Plastic bending. Beam deflection. Torsion of shafts and thin-walled closed sections. Shear, bending moment, and deflection diagrams for beams. Compound stress and stress transformations. Design concepts.*

Revised Course Description:

*Three-dimensional force systems, moments, couples, and resultants. Three-dimensional equilibrium problems. Bending and Shear stresses in beams. Plastic bending. Beam deflection. Torsion of shafts and thin-walled closed sections. Shear, bending moment, and deflection diagrams for beams. Compound stress and stress transformations. Design concepts.*

Rationale:

- Plastic bending is covered in CIVE/AE 310 and CIVE 413
- Stress transformations covered in 205
- Revise to move 3-D force systems to 105, concentrate on shear and bending – concentrate on statics in 105 and on solid mechanics in 204 – more concentration on fewer topics may aid in retention

- **AE/CIVE 205 – Solid Mechanics 2** 0.5 Units

Existing Course Description:

*Frames, arches, and suspended structures. Stress and strain transformations. Strain energy. Energy methods. Virtual work. Buckling of columns.*

Revised Course Description:

*Deflections of beams and trusses, energy methods, principle of virtual work. Introduction to frames. Analysis of stress and strain, plane problems, theories of failure, buckling of columns.*

Rationale:

- Some topics covered were not reflected in the course description
- Arches and suspended structures are topics that are frequently cut if short on time – usually covered in CIVE 306
- **AE/CIVE 303 – Structural Analysis: 0.5 Units**

Existing Course Description

*Analysis of statically indeterminate structures using force and displacement methods. Influence lines for determinate and indeterminate structures. Introduction to the matrix stiffness method. Computer applications using commercial structural analysis software.*

- Description okay as is. Minor tweaks discussed (delete indeterminacy “accounting” method)
- Suggestion to switch CIVE/AE310 (currently 3B) with CIVE/AE303 (currently 3A)

Rationale:

- Exposure to engineering/member design earlier
- 303 is typically the hardest course in the hardest term – could have good impact on students by moving back a term
- Could have positive impact in outcomes – students might have better grasp of moment diagrams/behaviour of structures if they see application in member design in CIVE/AE310
- **AE/CIVE 310 – Introduction to Structural Design: 0.75 Units (“supercourse”)**

Existing Course Description

*Introduction to structural systems. Systems for carrying gravity and lateral loads in buildings. Structural design concepts. Analysis and design of concrete beams, and one-way slabs. Design of steel beams and tension members. Comparison of steel and concrete framing systems.*

Revised Course Description (reduce to 0.5 credit)

*Introduction to structural systems. Systems for carrying gravity and lateral loads in for buildings. Structural and fundamental design concepts. Analysis and design of reinforced concrete beams, and one-way slabs, and the design of. Design of common steel framing members such as beams and tension compression members. Comparison of steel and concrete framing systems.*

Rationale:

- Currently 1/3 – 1/3 – 1/3 on design/code-concrete-steel
- Course tries to cover too many topics, resulting in superficial treatment and not enough depth to ensure retention of concepts

- Reduce to a regular course to moderate load on students
- Could be switched with CIVE/AE303 to be offered in 3A instead of 3B
- Switch to 10% code, 50% concrete and 40% steel, with systems and code issues integrated into member design – provide context within calculations
- Outline has been updated
- Need to better cover some fundamental concepts like tributary area in earlier analysis courses – integrate into problems so students see it repeatedly

**Additional comments:** N/A

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**RECOMMENDATION 2:** The programs bring attention to equity, diversity, and inclusion, which could include seeking to understand the state of EDI in the programs, faculty, and spaces, setting goals and deliverables, and tracking progress in a way that brings EDI awareness to all faculty and staff.

Completed: ☐Yes ☐No ☒Partially

**Progress:**

- Equity & diversity are a core part of our curriculum, mandated by our accredited process, and taught and assessed across all 4 programs and all 4 years
- The following topics are covered
  - o Identify ethical and unethical behaviour in professional situations
  - o Identify how an engineer is accountable to multiple stakeholders in engineering practice
  - o Identify equitable and inequitable situations or behaviours
- Data from the National Survey of Student Engagement (NSSE) suggest students in CEE are highly exposed to various levels of diversity (e.g., racial, economic)
- Elder William Woodworth Raweno: kwas came and did a guest talk with AE on October 7<sup>th</sup> 2024 on the Cambridge Campus (How an Architect became an Elder)
- Capstone:
  - o Between 2020-2025 a total of 27 capstone groups were related to EDI-R (including topics involving the Indigenous or minority communities):
    - 2020-2021: 3 groups of 49
    - 2021-2022: 4 groups of 43
    - 2022-2023: 7 groups of 65
    - 2023-2024: 6 groups of 58
    - 2024-2025: 7 groups of 62
  - o Students were guided to Indigenous resources on campus through the Office of Indigenous Relations and to meet with Elder Bill on an as-needed basis

- Students worked on the Warrior Home's projects: Chippewas of Nawash Unceded First Nations community on the Neyaashiinigmiing Reserve in 2020, and Kitchener-Waterloo Urban Native Wigwam Project in 2023
- Sustainability concepts were addressed in the following ways:
  - Sustainable Development Goals (SDGs) are introduced
  - Creation of a "sustainability statement" and review of criteria for those opting into the sustainability award, including:
    - 2023: 18 out of a total of 65 teams
    - 2024: 29 out of a total of 58 teams
- Alignment with the EDI-R strategic plan (<https://uwaterloo.ca/equity-diversity-inclusion-anti-racism/about-us/strategic-plan>)
  - Hiring:
    - Priority Job Advertisements for Underrepresented groups were used to diversifying tenure track/tenured positions for: Maricor Arlos (hired October 1, 2024), Zhongming Lu (hired January 1, 2025)
    - Solomon Tesfamariam (hired July 1, 2023), under the Black and Indigenous Excellence hiring initiative
    - EDI-R statements included in all staff and faculty job postings
    - Unconscious bias training required for search committees
  - Canada Research Chair (CRC) equity targets, and Women in Engineering (WiE) faculty advocates
  - Required completion of Accessibility Training and Workplace Violence Awareness for staff
  - Menstrual products are made available to students, staff, and faculty:
    - E2 1942 (women's washroom)
    - E2 WEEF TA Office (1786)
    - Cambridge Campus ARC 1802A, 3806 (all gender washroom)
    - Architecture office
    - Other E2 washrooms have QR codes showing where menstrual products are available
  - All gender washrooms identified in E2- 3418A (Single-stall; accessible) and ARC 1802A, 1803, 2111A, 3806, 3807
  - Prayer space in ARC-3301, available 24/7 and CPH 3657
    - CPH-2374B temporarily unavailable until late November due to the installation of foot washing stations to accommodate religious needs of students, staff, and faculty
  - Advertising EDI-R events on CEE run pages including Facebook/ LinkedIn/ Instagram (<https://uwaterloo.ca/engineering-equity-diversity/events>,
  - Two CEE mentors (Maricor Arlos and Solomon) for the Indigenous | Black Engineering | Technology PhD Project (iBET PhD Project) <https://ibetphd.ca/current-mentors/>

- 4<sup>th</sup> year Civil Engineering student, Naomie Seh Abomo, was a session speaker for the 2024 Inter-Institutional Forum Scarborough Charter held at Federation Hall on May 9<sup>th</sup>, 2024. A speaker for “Black in STEM”
- Bell Let’s Talk mental health initiatives

**Next steps (if applicable):**

- Continue to implement initiatives across programs
- Adding the “Anti-Racism Anti-Oppression Training” and “Introduction of Equity” (self-registration on Learn) as mandatory training from staff and faculty
- Support can be requested through the EDI-R website (<https://uwaterloo.ca/equity-diversity-inclusion-anti-racism/equity-office/edi-r-intake-form>)
- An EDI-R area could be added on the CEE website
- Focus on increasing awareness and experience with Indigenous customs and culture
- Mental health focused programs to help students, staff, and faculty with work/life balance

**Additional comments:** N/A

**RECOMMENDATION 3:** The programs are recommended to consider and support flexible and novel approaches to teaching and student learning.

Completed:            ☐Yes            ☐No            ☒Partially

**Progress:**

- Focus on innovative and hands-on teaching methods
- Implementation of community-based learning, including granting undergraduate students to teach in the greater community
- Having effective engaging studio courses every term within the AE program
- The addition of interactive studio courses to the EnvE program
- The addition of a 2-day hands-on learning experience (Design Days) allowing students to build and test their designs
- Novel teaching competency-based assessments as part of Year 1 mechanics courses
- Providing additional funds for learning activities along with what is available through Waterloo Engineering Endowment Foundation (WEEF) Funds
- Scratch cards to allow for innovative learning through group assessments
- The use of Kahoot and i-clickers in the classroom
- Several instructors have received teaching awards (last 10 years):
  - Faculty of Engineering, Teaching Excellence Award
    - Nadine Ibrahim (2024)
    - Rania Al-Hammoud (2023)
    - Chris Bachmann (2021)
    - Chris Bachmann (2019)

- Award of Excellence in Graduate Supervision Recipients
    - Peter Huck (2023/2024)
    - David Rudolph (2023/2024)
    - Carl Haas (2016/2017)
    - Susan Tighe (2016/2017)
  - Boyce Family Teaching Award
    - Andrea Atkins (2024)
  - Outstanding performance Award Recipients
    - Andrea Atkins (2023)
    - Hassan Baaj (2023)
    - James Craig (2023)
    - Monica Emelko (2021)
    - Bruce Hellinga (2021)
    - Nadine Ibrahim (2020)
    - Bryan Tolson (2020)
    - David Mather (2020)
    - Chris Bachmann (2020 and 2024)
    - Rania Al-Hammoud (2017)
  - Distinguished Performance Award Recipients
    - Chris Bachmann (2019 & 2021)
    - Nadine Ibrahim (2020 & 2023)
    - Scott Walbridge (2021)
  - Teaching Excellence Award: Engineering Society
    - David Mather (2025)
    - Hassan Baaj (2021)
    - Anne Allen (2020)
    - Rania Al-Hammoud (2016)
  - Canadian Engineering Education Association (CEEA)
    - Nadine Ibrahim, Fellow and President of CEEA (2024)
  - American Society for Engineering Education (ASEE)
    - Rania Al-Hammoud (2025) – campus representative chair ASEE St. Lawrence Section
- Below is a table summarizing the flexible and Novel teaching approaches used in each course

## CYCLICAL PROGRAM REVIEW PROGRESS REPORT

Instructor Name	Course Code	Course Title	Term (e.g., Fall 2024)	Novel Teaching Method Description
Rania Al-Hammoud	AE/ CIVE 104	Mechanics 1	Fall 2024	Competency Based Assessment - changing the assessments of the course to be linked to learning outcomes. Allowing students multiple attempts in each learning outcome to achieve the grade. As long as the students showed that they understood the learning outcome by the end of the term, they were not penalized by it.
Rania Al-Hammoud	AE/CIVE 104	Mechanics 1	Fall 2019 to 2024	Community Based Project where students teach mechanics concepts to middle school kids in the region allowing them to simplify the concepts and understand them in details
Rania Al-Hammoud	AE 204	Solid Mechanics 1	Winter 2021 to 2025	Flipped classroom, created videos for each course concept so that students have to learn before coming to class. This allows class time to be used for higher level problems
Rania Al-Hammoud	AE/CIVE 104	Mechanics 1	Fall 2021 to 2024	Flipped classroom, created videos for each course concept so that students have to learn before coming to class. This allows class time to be used for higher level problems
Rania Al-Hammoud	AE/CivE 104	Mechanics 1	Fall 2018 to 2024	Using hands on activities to demonstrate concepts within mechanics
Alana Lund	CIVE/AE 121	Computational Methods	Spring 2023, Winter 2024	Think, Pair, Share and Gallery Walk for Program Logic Development (Flow Chart Development on Giant Post-Its)
Pejoohan Tavassoti	CIVE 542	Pavement Structural Design	Winter 2025	Acquired a free version of AASHTOW are Pavement ME software and had the students do group design projects. This is typically a rare opportunity as the software license will cost them 15,000 USD per year, but they got free access and real world hands on experience
John Straube	CE507	Building Science & Technology	Winter 2025	Developed an AI Teaching assistant that used all the course resource materials and more to answer student questions

## CYCLICAL PROGRAM REVIEW PROGRESS REPORT

Rebecca Saari	ENVE 497	Air Quality Engineering & Impacts	Winter 2025	In-class modeling activities, in-class experiments
Pejoohan Tavassoti	CIVE 241	Transport Principle & Applications	Fall 2022 to 2024	Real-world component in the homework assignments, where one of the questions asked for the students to find a case example for the topic that being covered. Also using interactive materials to facilitate understanding the subject for a broader range of learners
Rebecca Saari	ENVE 277	Air Quality Engineering	Fall 2024	in-class examples based on air quality-related news (e.g. wildfires) and research (e.g., discovered CFC leaks)
James Craig	ENVE 279	Energy and the Environment	Fall 2017-Fall 2024	3-4 x per year flipped classrooms where students solve unmarked problems after reading a handout prior to class
James Craig	ENVE 573	Contaminant Transport	Winter 2020 & prior	Mastery learning marking of assignments; students resubmit assignments with feedback until they get a 90+
Carl Haas	CIVE 596	Construction Engineering	S2024 and S2025	created a implemented a bidding game to help understand the related dynamics - survey results indicate it was extremely well received by the students - surveys available if you wish
Cory Zurell	AE315	Building Structural Systems	W2022 - W2025	Flipped classroom - students research and prepare a presentation on a notable engineering failure they then present to their classmates; students use AI of their choice to explain a failure, and then critique the AI-generated explanation for validity
Cory Zurell	AE315	Building Structural Systems	W2022 - W2025	Students are challenged to design and construct a 3-storey model building using coffee stir sticks using principles learned about lateral load resisting systems. the models are loaded with steel plates and tested on a shake-table to evaluate the performance of their lateral design
Cory Zurell	AE125	Structural Design Studio	S2022 - S2025	Students are tasked with designing and constructing a tower to support a 1/2 pound steel ball bearing using 1/8" square x 3' long balsa sticks, with constraints on where the tower can touch the ground and how high the ball bearing must be

## CYCLICAL PROGRAM REVIEW PROGRESS REPORT

				supported. Students develop a hands-on feel for stability and buckling behaviour
Andrea Atkins	AE100	Concepts Studio	F2022-present	Swapped an in-person campus tour for a self-guided audio-prompted tour of campus via a video with voiceover to give students more agency in experiencing the tour. YouTube video has been shared with other groups on campus since.
Andrea Atkins	AE100	Concepts Studio	F2022-present	Using the Design Days project as a first-iteration of their studio project designing site furniture gave them a boost in confidence about the design and accelerated their iterative design loop approach
Andrea Atkins	AE200	Enclosure Studio	W2020- present	Students are asked to do a poster presentation on a famous building science "bloopers" and lead their peers in a discussion of why the failure happened and how to avoid it in the future
Andrea Atkins	AE200	Enclosure Studio	W2022- present	Facade Design Lab - a combined project / lab with AE280 where students are challenged to consider window-to-wall ratio, wall assembly design, and solar shading when constructing a miniature facade to maintain a small space at a comfortable temperature when left outside in February in Waterloo.
Andrea Atkins	AE200	Enclosure Studio	W2020- present	Reclad Project - students are challenged to review the current performance of an existing campus building through a lab field day (in combination with AE280) using IR cameras, as well as reviewing and interpreting the existing building drawings. This forms the basis of their re-imagining work of a new, more efficient, facade design.
Andrea Atkins	AE205	Solid Mechanics 2	F2020- present	"Why do we care" slides bring students' attention to why the material in the upcoming unit is applicable to industry and/or research, focusing on structural engineering, building science, and architectural applications of the concepts.
Andrea Atkins	AE205	Solid Mechanics 2	F2020- present	Final Project replaces a Final Exam: Students design and analyze a pedestrian bridge given real-world constraints (replacing the A-lot overpass bridge over Uni Ave). In pairs students propose a design, communicate construction intent in drawings, and

## CYCLICAL PROGRAM REVIEW PROGRESS REPORT



				complete a structural analysis package using the skills they learned in class.
Andrea Atkins	AE450	Building Service Systems	S2025	Swapping unit tests for group collaborative learning assessments called "charrettes" where groups make a concept map of the application opportunities and challenges of a given type of building as it relates to the unit of study. Students give other groups feedback on their concept maps to support peer learning, feedback giving, and reinforce that building design is a team sport!
Andrea Atkins	AE400	Project 1 Studio	S2022- present	Capstone as a studio, with multiple industry critic visits
Basheer Algoi	AE280		W2025	Demonstration in class. A few demonstrations were brought to class to explain the mathematical and physical concepts to the students. For example, in heat transfer, a small chamber is used to compare R values of materials. Thermocouples, microcontrollers, and heaters were used. Also, before each lecture, a video is uploaded to Learn as a motivation. These videos include recordings from nature using optical and infrared cameras.
Scott Walbridge	CIVE 512	Rehabilitation of Structures	W2025	We brought in three guest speakers from industry and did four hands on labs on NDE methods, FRP repair of concrete beams, and installation of post-installed concrete anchors. The last lab is hosted by an industry specialist/supplier (Hilti Canada). I did three pop quizzes with a Kahoot-like approach (we can't afford real Kahoot any more!) and did an activity where the students had to go around campus and take a photo of damaged concrete and explain the cause. Lastly, I use a weekly "activity guide" in my class, so students know at the start of the week everything they'll be asked to do. This seems to be highly appreciated by the students.

**Next steps (if applicable):**

We will continue to monitor new teaching innovation methods by attending education conferences such as Canadian Engineering Education Association (CEEAA), American Society of Engineering Education (ASEE), UW Teaching and Learning Conference (UWTL). It is also important to note that a member of our faculty, Nadine Ibrahim is the current president of CEEAA leading educational initiatives.

**Additional comments:** N/A

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**RECOMMENDATION 4:** The programs consider how design is developed throughout the curriculum, and it culminates in the capstone project, with consideration of cross- program capstone groups with industrial (and academic) advisors.

Completed: ☐Yes ☐No ☒Partially

**Progress:**

- The scheduling of capstone was re-organized across engineering to co-occur (MW 4pm) – this will foster greater collaboration across programs and lead to more inter-disciplinary teams/projects
- Industrial advisor committees to aid with capstone for AE industrial curriculum advisory (ICAC) committee and GeoE ICAC
- Students have four options to pursue an interdisciplinary capstone group and are well supported
- Several initiatives supported by CEE:
  - o New awards
    - Sustainability award (ran 2023 and 2024)
    - BGC for geotechnical/ geological engineering projects
    - Bird Construction projects for projects related to waste management and reduction
  - o Inaugural award (won by two CEE teams in 2023)
- Creation of a Pre-Symposium event (Pre-Symposium Design Sprint) for all our CEE teams to create a mechanism for peer-to-peer learning, first took place in January 2025 and will continue onward
- A capstone preview was introduced in 3B to allow students to start their thought process regarding projects, team members and advisors
- Instructors across CIVE and AE have taken the initiative to promote collaboration
- Collaboration between CEE capstone coordinator and Associate Dean of Co-operative Education

- One CIVE team has switched to AE capstone (thus far)

### Next steps (if applicable):

- Continued implementation across department
- The creation of additional industrial advisor committees to aid with capstone. We are expanding to include a separate committee for each of our four programs. Currently, AE and GeoE industry committees have been created and the CIVE and EnvE industry committees are under way

### Additional comments:

- Largest barrier is that AE capstone is strictly scheduled on Friday (in a “studio day” format) and therefore other students would need to be available and have not committed to other technical electives

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**RECOMMENDATION 5:** The program considers combined undergraduate and graduate program reviews.

Completed:            ☐Yes            ☐No            ☒Partially

### Progress:

- Graduate Report was completed in 2022 to assess graduate program, identify strengths, challenges, and weaknesses
  - Planned opportunities for improvement include expanding application pools, increase enrollment in MEng focused on Environmental, advertise programs entrepreneurship and unique IP policy, strengthen existing international collaboration, focus on increased indigenization
- We have created a two-year graduate teaching plan so students considering graduate school can choose their classes at the beginning
- Budget constraints will force us to critically assess our graduate course offerings

### Next steps (if applicable):

In the coming year we will be doing a graduate curriculum review to ensure we maintain a high diversity and quality graduate offerings despite recent budget constraints. This review will be done ensuring there is alignment with the undergraduate curriculum.

**Additional comments:** N/A

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## CYCLICAL PROGRAM REVIEW PROGRESS REPORT



	Recommendations	Proposed Actions	Responsibility for Leading and Resourcing (if applicable) the Actions	Timeline for addressing Recommendations
1.	Each program will conduct a review and self-assessment of their curriculum to understand how they are, and will be, educating the engineer of the future with attention to integration between the programs, balancing STEM, and non-STEM content, and incorporating flexibility.	AE, CIVE, and GEOE programs have planned changes in the sequence of mechanics and design courses	Mohamad Araji (AE Program Director), Rania Al Hammoud (CEE UG Associate Chair), Shunde Yin (GeoE Program Director)	December 2026
2.	The programs bring attention to equity, diversity, and inclusion, which could include seeking to understand the state of EDI in the programs, faculty, and spaces, setting goals and deliverables, and tracking progress in a way that brings EDI awareness to all faculty and staff.	Continue to implement initiatives across programs, adding additional EDI-R training for staff and faculty, increasing awareness of Indigenous customs, supporting cross-department mental health and wellbeing	Rania Al Hammoud, CEE Community Committee	Ongoing
3.	The programs are recommended to consider and support flexible and novel approaches to teaching and student learning.	We will continue to monitor new teaching innovation methods by attending education conferences and follow the recommendations of our faculty member, Nadine Ibrahim, the current president of CEEA leading educational initiatives	Rania Al Hammoud, Nadine Ibrahim (CEEA President, Capstone Coordinator)	Ongoing
4.	The programs consider how design is developed throughout the curriculum and that culminates in the capstone project, with consideration of cross-program capstone groups with industrial (and academic) advisors.	Continued implementation across CEE and across other Engineering departments and further promotion of cross-department collaboration	Mohamad Araji, Rania Al Hammoud, Shunde Yin, Bruce MacVicar (EnvE Program Director)	December 2026
5.	The program considers combined undergraduate and graduate program reviews.	Graduate program curriculum review with consideration of integration between graduate and UG programs	Adil Al Mayah (CEE Grad Associate Chair)	December 2026

The Department Chair/Director, in consultation with the Dean of the Faculty shall be responsible for monitoring the Implementation Plan.