Updated Oct 2022

Ongoing Improvement Progress Report

Instructions and Report Template

As part of the protocols outlined in Western's Institutional Quality Assurance Process (IQAP), to facilitate the continuous improvement of academic programs between review cycles, in connection with the Final Assessment Report (FAR) and Implementation Plan, a monitoring process will include an Ongoing Improvement Progress Report. The outcomes of this report will be considered as part of the program's next cyclical review.

The purpose of this report is to provide an update on the operationalization of the implementation plan following a Cyclical Program Review (or the review of a New Program). This should include a brief summary of actions taken by the Program and the Dean's Office since the completion of the review (usually about three years), as well as an update on the stage of implementation for all applicable items. These include:

- whether the action item(s) are in progress, complete or no longer applicable (with a brief explanation);
- the timelines of each item and how they are progressing or expected to progress, particularly if they are diverting from original timelines in the FAR and Implementation Plan, and;
- a short description of any other program developments and improvements that have taken place following the review.
- For new programs only, an evaluation of the initial administration and resourcing of the program.

The following report template has been created for the program to report on progress made regarding recommendations presented in the Implementation Plan, and any other relevant program developments and enhancements.

- The program will complete the template and submit it to the faculty Dean's Office for sign-off.
- The program will then submit the completed Ongoing Improvement and Progress Report to the Office of Academic Quality and Enhancement (OAQE). Reports are due by June 21, 2024.
    - The OAQE will present all Ongoing Improvement and Progress Reports to SUPR-U/G. Any follow-up questions or concerns will be communicated to the program and Dean's Office by the OAQE.
    - It should be noted that as per the requirements of the province's Quality Council, progress reports will be posted on the reports page of the OAQE website.

Ongoing Improvement Progress Report

Mechanical and Materials Engineering, M.E.Sc.,M.Eng.,Ph.D. / Faculty of Engineering

Program	Mechanical and Materials Engineering, M.E.Sc.,M.Eng.,Ph.D.	**Faculty / Affiliated University College**	Faculty of Engineering
Approval Dates of the Review	SUPR-G: February 28, 2022 SCAPA: March 9, 2022 Senate: March 18, 2022	**Year of the Next Review**	2028-2029
Link to the Programs Final Assessment Report (FAR)	https://www.uwo.ca/pvp/vpacademic/iqap/academic_programs/iqap_reports/faculty_of_engineering_grad/Annual%20Report%20Final%20Assessment%20Reports%202021-22%20Western%20University%20Graduate.pdf		
If applicable, submission of follow-up report(s)			

	Name	**Signature**	**Date**
Program Chair/Director	Liying Jiang (Associate Chair – Graduate Research Programs)		July 16, 2024
Dean (or designate)	Lars Rehmann		July 17, 2024

Progress Update on the Implementation Plan

Recommendation #2	Proposed Action and Follow-up	Responsibility	Timeline
We recommend that the graduate seminars include EDI-training on par with training in professional ethics and career preparation.	Include EDI training as a mandatory component of the professional ethics and career preparation that takes place during graduate seminar series. Invite guest speakers to deliver training seminars on various EDI topics in both Fall and Winter term	Associate Chair, Graduate Research Programs (MME) to coordinate with: - Faculty EDI committee - Office of the Associate Vice-President (EDI) - Office of Indigenous Initiatives	By April 2022

Recommendation Implemented

☐ Yes ☐ No ☒ Partially

If no, or partially, is implementation on schedule with the timeline? ☐ Yes ☒ No

Progress

What specific actions have been taken? The Faculty of Engineering has established a Faculty-level EDI committee with the mandate to review current policies and practices, and to provide recommendations to integrate EDI considerations and support EDI-focused training initiatives, related to undergraduate and graduate education as well as inclusivity in the Faculty.

Next Steps (if applicable)

What actions remain? Is there further follow-up? The EDI Sub-Committee on Graduate and Research will work with the departmental graduate offices and other units on the campus to facilitate EDI training initiatives in graduate studies.

Additional Comments

If applicable

Recommendation #3	Proposed Action and Follow-up	Responsibility	Timeline
We recommend that the forms titled "Comprehensive Exam Assessment Form" and "Thesis Exam Assessment Form" be modified to include a brief set of instructions.	Modify the forms by adding clear instructions on how the rubrics are being used to evaluate student performance and learning outcomes according to WDLOs/GDLEs principles.	Associate Chair, Graduate Research Programs (MME) (Consult Associate Dean, Graduate and Postdoctoral Studies, if needed)	By June 2022

Recommendation Implemented

☒ Yes ☐ No ☐ Partially

If no, or partially, is implementation on schedule with the timeline? ☐ Yes ☐ No

Progress

What specific actions have been taken? We have modified these forms by adding clear instructions on how the rubrics are being used to evaluate student performance and learning outcomes according to WDLOs/GDLEs principles.

Next Steps (if applicable)

What actions remain? Is there further follow-up? We will keep monitoring the feedback from examination committees and MME graduate committee-Research Programs to evaluate the efficacy of the proposed actions.

Additional Comments

If applicable:

Recommendation #6	**Proposed Action and Follow-up**	**Responsibility**	**Timeline**
Creation of a database of past MEng students with their application GPA, previous degree and university, failed courses in the MEng program, and graduate GPA.	Develop a database of past MEng students and consider how that may inform holistic admission processes to support EDID.	Associate Chair, Graduate Research Programs (MME)	By June 2022

Recommendation Implemented

☐ Yes ☐ No ☒ Partially

If no, or partially, is implementation on schedule with the timeline? ☒ Yes ☐ No

Progress

What specific actions have been taken? A common practice of creating and managing an excel spreadsheet with the institution information as well as other details (academic performance and English proficiency) is followed at the time of admission. This serves as a tool to compare the institutions where the past, the current and future students come from.

Next Steps (if applicable)

What actions remain? Is there further follow-up? We plan to map the correlation between the performance of students in the MEng program and their undergraduate program as well as the caliber of the institutions.

Additional Comments

If applicable

Recommendation #7	Proposed Action and Follow-up	Responsibility	Timeline
We recommend that MEng students be permitted to credit only two MME 9500-level courses.	Discuss the rules around course selection for MEng students. Limit the number of 9500-level of courses to two with case-by-case exceptions to be granted by the MME Associate Chair, Graduate Professional Programs. The current plan is to ensure that this change will be in effect for all students starting their MEng program in Fall 2022.	Associate Chair, Graduate Research Programs (MME) MME Graduate Professional Programs Committee	By August 2022

Recommendation Implemented

☐ Yes ☐ No ☒ Partially

If no, or partially, is implementation on schedule with the timeline? ☒ Yes ☐ No

Progress

What specific actions have been taken? Based on the availability of MME9600-level courses, MME MEng students are still allowed to take up to 3 MME9500-level courses. However, at the moment, the majority of students take up to 2 MME9500 courses. The Associate Chair-Graduate Professional Programs monitors the enrollment and grants case-by-case recommendations. In addition, as noted in Continuous Program Enhancement, some of the MME9500-level courses that were most popular to the MENG cohort have been de-toggled from their undergraduate analogs and are now being offered as MME9600-level graduate courses. To this point, MME9519 (originally toggled with MME4492) is now MME9605 – *Production Management for Engineers*, and MME9520 (originally toggled with MME4452) is now MME9606 – *Robotics and Automation*. Decoupling these courses enabled the instructors to add more advanced material in the courses and, more importantly, provides a better opportunity for all MENG students to take the courses.

Next Steps (if applicable)

What actions remain? Is there further follow-up? With the increase in MME9600-level courses due to the introduction of new courses and de-toggling MME9500-level courses from undergraduate courses, this policy will be implemented more rigorously.

Additional Comments

If applicable

Recommendation #8	**Proposed Action and Follow-up**	**Responsibility**	**Timeline**
We recommend reminding students of the self-assessment form and process at each annual supervisory meeting.	Additional reminders about the self-assessment form and process will be integrated in the Progress Report (a component of Western's Pathfinder system).	Associate Chair, Graduate Research Programs (MME)	By June 2022

Recommendation Implemented

☐ Yes ☐ No ☐**X** Partially

If no, or partially, is implementation on schedule with the timeline? ☐**X** Yes ☐ No

Progress

What specific actions have been taken? The reminders about the self-assessment form and process are conveyed to new students during the graduate research program orientation coordinated by the MME Associate Chair at the beginning of each term. However, these reminders are not completely integrated in the Progress Report in the Pathfinder system as this system is not particularly targeted at the MME programs. Alternatively, such reminders are included in the comments to students when Graduate Chair reviews and approves the students' progress report.

Next Steps (if applicable)

What actions remain? Is there further follow-up?

Additional Comments

If applicable: As the reminder is not sent to the students automatically, it may be missed for some students.

Recommendation #9	**Proposed Action and Follow-up**	**Responsibility**	**Timeline**

We recommend that MME adjust the balance between required mandatory attendance and the number of presentations/topics for the graduate seminars.	Consult with MME Graduate Student Society on ways to improve the delivery of the graduate seminar.	Associate Chair, Graduate Research Programs (MME) MME Graduate Student Society	By June 2022

Recommendation Implemented

☐**X** Yes ☐ No ☐ Partially

If no, or partially, is implementation on schedule with the timeline? ☐ Yes ☐ No

Progress

What specific actions have been taken? Considering that some students conduct research off campus, the seminar attendance mode has been changed from complete in-person to hybrid mode, which offers flexibility for students to attend the seminars remotely upon the approval of the MME graduate office. The majority of the students are still required to attend the seminars in person.

Next Steps (if applicable)

What actions remain? Is there further follow-up?

Additional Comments

If applicable

Recommendation #10	Proposed Action and Follow-up	Responsibility	Timeline
We recommend that, where possible, better tracking of graduate student alumni be performed.	Create alumni groups via social and professional networking portals (Facebook, LinkedIn, etc.). Invite some program alumni to speak to current graduate students about their post-graduation professional experience.	Associate Chair, Graduate Research Programs (MME) AD (Graduate) and Office and Communications Team	By December 2022

Recommendation Implemented

☐ Yes ☐ No ☒ Partially

If no, or partially, is implementation on schedule with the timeline? ☐ Yes ☒ No

Progress

What specific actions have been taken? The implementation process has been discussed with the Associate Dean's office and the process is in progress.

Next Steps (if applicable)

What actions remain? Is there further follow-up? The communications team has been tasked to propose a suitable platform/strategy to be implemented once approved by the program and Associate Dean.

Additional Comments *If applicable*

Recommendation #11	**Proposed Action and Follow-up**	**Responsibility**	**Timeline**
We recommend that an exit survey be distributed to graduate students who successfully complete their program of study.	Design and deploy exit surveys targeting the graduates of the MESc, MEng and PhD programs.	Associate Chair, Graduate Research Programs (MME) Survey form should be approved by AD (Graduate) to meet Western policies	By December 2022
Recommendation Implemented ☐ Yes ☐ No ☐**X** Partially If no, or partially, is implementation on schedule with the timeline? ☐ Yes ☐**X** No			
Progress *What specific actions have been taken?* Exit surveys were conducted in the past, currently previous surveys and results are being reviewed at the faculty level.			
Next Steps (if applicable)			

What actions remain? Is there further follow-up? Discussions are underway at the faculty level for all programs. Based on the faculty-wide review of past and discontinued surveys, a revised survey will be proposed in coordination with the communications team.
Additional Comments *If applicable*

Note: The total number of expandable text boxes will be dependent on the number of prioritized recommendations appearing in the program's most recent Final Assessment Report (FAR).

Continuous Program Enhancement
What additional initiatives or changes has the program been working on in relation to continuous program improvement? **1. Collaborative Specializations:** Two collaborative specialization programs have been added to the MME graduate programs, including 1. *Collaborative Specialization for Planetary Science and Exploration*: This specialization will be available for the MME graduate students at the Masters (MESc, MEng) or PhD level whose thesis/Project topic is relevant to Planetary Science and Exploration research. It offers students opportunities to follow their interests, discuss and take part in cutting edge planetary exploration, find opportunities for summer fieldwork and hands-on laboratory work, and collaborate with space agencies and private partners. 2. *Collaborative Specialization in Machine Learning in Health and Biomedical Sciences:* This program enhances the education and research of MESc and PhD students by adding a module to their program. This program will help students to develop a solid foundation in modern machine learning techniques, to gain a deep understanding of the application of machine learning to genomic, physiological, imaging and behavioral data, and to conduct an independent research project in health and biomedical science using modern machine learning approaches.

2. Flex Doctoral (PhD) Program

The introduction of a flex-time option for doctoral programs is to increase accessibility for practicing professionals. This is a modified delivery option that enables practicing professionals to undertake doctoral studies by offering flexibility in the completion timeline. Students in flex-time enrollment are still expected to fulfil all program requirements and demonstrate all learning expectations.

3. Decoupling Toggled Courses

As noted in Recommendation #7, we decoupled some toggled courses (95xx) from the respective year 4 undergraduate courses (44xx) to form stand-alone regular graduate courses (96xx) which are offered at a higher level with additional topics relevant to both Professional and Research students. Two recent examples are: MME 9605 (Production Management for Engineers) and MME 9606 (Robotics and Manufacturing Automation).

4. GDip+MEng Option

Many of our students opt to take up Combined Master of Engineering (MEng) degree with a Graduate Diploma (GDip) in Engineering Leadership and Innovation. It is a 4-term add-on (16 months in total) program where students concurrently take courses to complete the requirements of both MEng and GDip programs. This program provides the opportunity for engineering graduates to further develop professional leadership skills in the context of engineering practice, and to enhance their employability. This has been a popular option among MEng students since its inception.

5. Co-op

This option introduced in 2023 gives the opportunity for the students to gain practical, hands-on, industrial experience that is relevant to their academic field and assist them in their career advancements. It allows students to complete a co-op term in an industrial organization to enhance experiential learning and engage in other learning activities of practical interest, taking one additional term in addition to the regular MEng program (total of 4 terms). This program is also available for those who opt for MEng-GDip program (total of 5 terms). Most of our students who were successful in securing the co-op positions have been recruited by the same or different industrial establishments upon completion.

6. Advanced Manufacturing

Considering that Advanced/Intelligent manufacturing techniques and approaches are critical for keeping Canada competitive in the manufacturing sector, a new field in “Advanced Manufacturing” has been created for MEng students. This field has now been officially approved by the university senate and will commence from the summer 2024 intake and continue to be offered to all other intakes during the year. This field will afford students the option to enrich their skillset in manufacturing and prepare themselves for this continually emerging sector.