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Overview of Western's Cyclical Review Assessment Reporting Process

In accordance with Western's Institutional Quality Assurance Process (IQAP), the Final Assessment Report (FAR) provides a summary of the cyclical review, internal responses, and assessment and evaluation of the Chemical and Biochemical Engineering Program delivered by the Faculty of Engineering.

This FAR considers the following documents:

- the program's self-study brief;
- the external reviewers' report;
- the response from the Program; and
- the response from the Dean, Faculty of Engineering.

This FAR identifies the strengths of the program and opportunities for program enhancement and improvement, and details the recommendations of the external reviewers – noting those recommendations to be prioritized for implementation.

The Implementation Plan details the recommendations from the FAR that have been

Executive Summary

Receiving approval in 2008 for the current version of graduate programming, Chemical & Biochemical Engineering offers programs that lead to the following degrees 1) Course-based Master of Engineering (M.Eng.); 2) Course and Project-based Master of Engineering (M.Eng.); 3) Thesis-based Master of Engineering Science (M.E.Sc.);;

issues including the protection and management of water resources, resource recovery, and treatment technologies.

- The CBE graduate seminar series is a weekly seminar taking place during the fall and winter terms, in which different speakers are featured weekly.

Concerns and Areas of Improvement Identified and Discussed by the Program

- Budget constraints that affect teaching assistantships.
- Encourage collaboration among faculty members through team-building exercises and retreats to continue enhancing the climate within the department.
- The program faces the same recruitment challenges as many similar programs:
 - o Increased competition from other universities in Canada
 - o Lack of scholarship opportunities for international students
 - o Increased cost in supporting research graduate students (tuition and living expenses)
- The most frequent area of concern identified in the student survey was that program information on the website was often outdated or very difficult to find.

Review Process

As part of the external review, the review committee, comprising two external reviewers, one internal reviewer and a graduate student reviewer, were provided with Volume I and II of the self-study brief in advance of the scheduled review and then met virtually (due to pandemic restrictions) over two days with the:

- x Associate Vice-

Report (FAR) of the Chemical and Biochemical Engineering Program. The FAR is collated and submitted to SUPR-G by the Internal Reviewer with the support of the Office of Academic Quality and Enhancement.

Summative Assessment – External Reviewers’ Report

External reviewers shared that “Overall, the graduate program was found to be of high quality and organized in a way to equitably accommodate the significant breadth of research occurring in a chemical and biochemical engineering department.”

Strengths of the Program

- With a breadth and “critical mass” of expertise across research areas, the department’s research environment is conducive to the advancement and dissemination of knowledge.
- Allocation of two associate chair positions for the graduate program is both unique and a significant commitment; this enhances students’ access to a dedicated advisor.
- Outstanding aspects of the MEng include:
 - o specializations are exactly in line with faculty member expertise;
 - o students are provided with clear and coherent curriculum options;
 - o cross-disciplinary strengths at Western can be seen in the Engineering in Medicine specialization; and
 - o low withdrawal rate and excellent time-to-completion.
- The project option in the coursework-based Master’s program is unique and innovative in enhancing students’ interaction with faculty members and providing opportunity for students to apply knowledge to practical or research problems.
- Transitional undergraduate-level courses in the MEng program support students with non-CBE and non-engineering backgrounds.
- The plan to carefully monitor the results of the program (e.g., by 100% of the program) is a strength.

- Coursework requirements for the course-based MEng program are higher than many other competing MEng programs which can

Summary of the Reviewers' Recommendations and

	<p>Faculty: As mentioned in the program's response, graduate students have access to a range of courses (for credit or non-credit) offered through the department, the faculty and the SGPS to develop competencies in research methods, communication, professionalism and ethics.</p>
<p>Recommendation #3 Past postdoctoral fellowships completed compared to MEng/PhD graduates is close to a 5:1 ratio of graduate student to postdoctoral fellows. Given the relatively high costs of postdocs versus graduate students, combined with the currently low graduate student numbers, promote graduate student supervision using merit, cost recovery, and other means.</p>	<p>Program: The ratio of active post-docs to graduate students cited by the program reviewers, 5:1, is not reflective of the program. In this discipline, the duration of a post-doctoral position is typically rather short (compared to +4 years residency of a PhD student), and varies on a case-by-case basis, as frequently PhD students will take on a post-doctoral role for a few months while securing external employment. The current ratio of active graduate students to postdoctoral scholars is 12:1.</p> <p>Faculty: The Dean's Office agrees with the program's response that a simple headcount in each category may not accurately reflect the steady graduate students to postdoc ratio. Regarding the increase in graduate enrollment, the Dean's Office supports Engineering Departments, in graduate recruitment initiatives and efforts. In particular, to increase PhD and MEng enrollments.</p>

Recommendation #4*

<p>Recommendation #6*</p> <p>The departmental practice of reducing stipend amounts proportional to teaching assistantship earnings should be discontinued OR clearly communicated in offer letters to potential graduate students.</p>	<p>Program: Graduate funding is being addressed given the current increases to the cost of living. Western has recently increased the minimum funding levels for doctoral students to tuition + \$17,000. In addition, the Faculty has increased: 1) minimum funding to tuition + \$18,000 for doctoral students who have successfully completed the comprehensive exam; and 2) minimum funding for MEdSc students to tuition + \$14,200.</p> <p>The perceived reduction is an unfortunate misunderstanding by some graduate students. It is clearly mentioned in the admission offer letters that the graduate funding package may include graduate teaching assistantship (GTA). The Faculty of Engineering has partially decoupled the GTA stipend from the guaranteed funding package where no more than 50% of the GTA stipend could be counted towards the guaranteed graduate funding package for PhD students and no more than 73% of the GTA stipend for MEdSc students. This policy shows that the Faculty values Teaching Assistantships as part of student learning. The actual funding received by students including the breakdown of funding resources is communicated through the Mercury funding portal. The program plans to further improve communication with students regarding the funding package and accessing the relevant information.</p> <p>Faculty: As mentioned in the Program's response, the funding sources are communicated to students in the offer letters and through the Mercury portal. The Dean's Office agrees that improved communication on funding matters is important. The Faculty is progressing towards de-coupling GTA stipend from the guaranteed graduate funding and will continue as financial constraints permit.</p>
<p>Recommendation #7</p> <p>The department should consider allocating/cross-training two staff members to the graduate program to negate the impact of secondments/leaves.</p>	<p>Program: The department's administrative staff consists of an Admin Officer, an Undergraduate Coordinator and a Graduate Coordinator. There has been considerable turnover with the Graduate Coordinator role over the past 6 years which has led to cross-training of the UG-coordinator and Admin Officer who can support the graduate program during leaves or vacation of the Graduate Coordinator. With current enrolment numbers, the graduate program in CBE is suitably staffed and will not need additional human resources. The topic will be discussed with the Faculty should the average annual enrolment during a three-year period increase by more than 30% over the average annual enrolment of last three years.</p> <p>Faculty: The program is currently appropriately resourced with staff to support the graduate program. Should there be a need for additional staff support in future due to the expansion of the graduate program in CBE, the Faculty Graduate Office would take over some admissions related activities to balance the workload of the CBE Graduate Coordinator.</p>

