

Final Assessment Report
Submitted by SUPR-G to SCAPA

Program:	Chemical and Biochemical Engineering	
Degrees Offered:	M.E.Sc., M.Eng, Ph.D.	
Approved Fields:	Biomaterials and Biochemical Engineering Environmental and Green Engineering Particle Technologies and Fluidization Reaction and Process Systems Engineering NEW- Macromolecular and Materials Engineering NEW- Water and Energy	
External Consultants:	Phillip Choi University of Alberta	James McLellan Queen's University
Internal Reviewers:	Pam McKenzie FIMS	James Kryklywy Neuroscience
Date of Site Visit:	June 16-17 2014	
Evaluation:	<i>Conditional with report in January 2016</i>	
Approved by:	SUPR-G on February 23, 2015 SCAPA on March 4, 2015	

Executive Summary

On June 16th and 17th, 2014, the review team interviewed a large group of graduate students (~ 30 of them) on the main campus and at ICFAR, the Dean and Associate Dean of the Faculty of Engineering, the Chair, Graduate Chair and the Director of the MEng Program, both junior and senior faculty members and the administrative and laboratory support staff. We also visited many laboratories including those at ICFAR. We were impressed that laboratories are well equipped for carrying out research projects in the theme areas defined by the Department. We collected a great deal of valuable information about the Department.

Significant Strengths of Program:

The program is of high quality overall.

- Research activity is significant with very good productivity and a broad range of themes; the department maintains a key position in a few key areas
- The program is a healthy size with a strong proportion of doctoral students
- Completion times are good
- The department is well equipped with specialized equipment and the ICFAR facility is excellent.
- There is strong leadership from the Chair and the Graduate Co-Ordinator and good support from the Graduate Assistant, technologists, and Western Libraries.
- The department has the human, physical, and financial resources to be one of the leading chemical engineering research programs in Canada.

Opportunities for improvement & Enhancement:

The reviewers identified a number of concerns from the site visit and review of the supporting briefs.

- The department is a collection of individuals and largely independent research programs with limited communication, very strong individual identities, and an inability to come together to work cohesively toward common goals. This lack of cohesion detracts from the overall strength of the department. The department is approaching a retirement wave over the next 10 years and there seems to be no common vision for the future and no succession plan to ensure that the department maintains healthy programs of research and teaching and establishes and maintains common goals and vision.
- Individual labs are located in physically distributed research facilities and students identify more with their supervisor and lab than with the Department. This combination exacerbates the lack

of departmental cohesiveness for faculty and students alike and poses challenges for remote students' participation in TAs and graduate courses.

- Competition among faculty members results in less than optimal use of lab space and access to equipment.
- The single Assistant Professor in the department is tasked with the role of Graduate Co-ordinator with no course release.
- During our tours, we observed a number of graduate students and research associates/postdocs not wearing the proper Personal protective equipment (PPE, e.g., safety glasses, goggles, lab coats). There was some concern about whether they were receiving sufficient safety training specific to their equipment, and whether Standard Operating Procedures (SOPs) were sufficient.
- There was considerable discussion and divergent opinions on the structure of the course work, particularly with respect to the concept of Core Courses.
- Some concern was expressed about ensuring the quality of graduate courses, and ensuring that they are revised to stay current with technical developments.
- During discussions with graduate student and faculty groups, the underutilization of the Supervisory Committee structure for doctoral student programs was a recurring theme.
- Major concern was expressed by both faculty and graduate students that the 78% rule for retaining a Western Engineering Scholarship is leading to grade inflation in graduate courses in the department and more broadly across the Faculty of Engineering.
- There appears to be a lack of awareness (and possibly agreement) as to the purpose of an M.Eng. program. M.Eng. students tend not to be as strong or as well-prepared as research students and are seeking broader, more applied treatment of material in the courses taken commonly.
- Students seemed to be unaware of opportunities for communications training.
- Concerns were raised about the scope, breadth, and attendance at the weekly seminar program.
- Faculty raised concerns, common among graduate chemical engineering programs across Canada, about the ability to recruit qualified Canadian graduate students. Conversely, common to other Ontario universities, international students exact a financial penalty on the department compared to domestic students.
- Graduate student stipends are low in comparison to other chemical engineering graduate programs in Canada.
- Concerns were expressed amongst the graduate student group that in some instances, TA expectations from instructors exceed the number of paid hours for the TA.

Recommendations for implementation:	Responsibility	Resources	Timeline
Hold regular meetings between Graduate Chair and Associate Dean to ensure co-ordination of response across the Faculty	Graduate Chair, Associate Dean		Immediately
Institute a periodic review of graduate courses to: 1. ensure that course scheduling and progression supports the participation of all students, on-campus and off, M.Eng and M.E.Sc/ Ph.D.; 2. balance and communicate the demands of core Chemical Engineering knowledge with strongly interdisciplinary work; 3. ensure the effectiveness of programming on communications; communicate and encourage opportunities to students.	Graduate Chair, Graduate Assistants, Department Chair		Ongoing
Investigate strategies for recruiting more and stronger domestic students; Review student support stipend packages to ensure they are	Graduate Chair, Graduate Assistants,		Ongoing

competitive with other programs; Review 78% scholarship policy.	Department Chair, Faculty		
Ensure effective and appropriate use of research equipment: 1. Develop space allocation and equipment plan and policies to ensure full and effective use of research space, equipment, and consumables. 2. Establish training, standard operating procedures, and enforcement policy for the use of personal protective equipment.	Department chair, Dean		Immediately
Encourage building student cohesion and identity across the department as a whole.	Department		
Require at least one meeting annually between thesis students and their advisory committees to ensure progress	Graduate faculty, Graduate Chair, Graduate Assistants		Ongoing
Review the implementation of and adherence to the provisions of the GTA collective agreement with respect to mid-term review of the Duties Specification Agreement.	Department		