



## Executive Summary and Implementation Plan

### Quality Assurance – Cyclical Program Review

### Master of Science in Engineering – Environmental Engineering

September 2016

In accordance with the Lakehead University Institutional Quality Assurance Process (IQAP), the Faculty of Engineering submitted a self-study (April 2014). Volume 1 presented the program descriptions and outcomes, an analytical assessment of their programs and program metrics including results from a student survey along with institutional information and statistical data. Volumes 2 and 3, respectively, provided a collection of the program course outlines and the CV's for each full-time member in the Department.

Two external reviewers and one internal reviewer, selected by the Senate Academic Quality Assurance Sub-committee (SAC-QA) from a set of proposed reviewers, examined the materials and completed a two-day site visit from 30 April – 1 May 2014. The site visit included meetings with the Provost and Vice-President (Academic), Dean of the Faculty of Engineering, Dean and Manager of the Faculty of Graduate Studies, Chairs of the Departments of Chemical and Civil Engineering, Graduate Coordinator of the program, Director of Research Services, Head of Collections Development (Library), as well as full-time faculty members. The Review Team toured facilities including the Instrumentation Laboratory and Faculty laboratories, and met with graduate students, alumni and community partners.

In their report, submitted June 2014, the Review Team provided feedback that describes how the Masters of Science in Engineering – Environmental Engineering program meets the Quality Assurance Framework evaluation criteria and is consistent with the University's mission and academic priorities. They reported that the admission standards, curriculum structure and delivery, and teaching and assessment methods are appropriate, reflect the current state of the discipline, and are effective in preparing graduates to meet defined outcomes and the University's graduate Degree Level Expectations (DLE's). The Review Team stated that "the unique interdisciplinary nature of the program integrates multidisciplinary research which includes chemical, civil and

mechanical engineering as well as chemistry and forestry”. They praised the program for innovation in integrating courses in geoenvironmental engineering, environmental chemistry, experimental design, physicochemical treatment processes and biological treatment processes.

In addition, the Review Team provided recommendations with supporting rationale for future consideration.

The Graduate Coordinator of the program, in consultation with the Dean of Engineering, submitted a response to the Reviewer’s Report (October 2014) with updates in July 2016. Clarifications and corrections were presented followed by a response to each of the recommendations made by the Review Team.

A Final Assessment Report (FAR) has been prepared to provide a synthesis of the external evaluation and internal response to the recommendations. This report identifies the significant strengths of the program, the opportunities for program improvement and enhancement, and sets out and prioritizes the recommendations made by the Review Team.

The Implementation Plan identifies who will be responsible for approving the recommendations set out in the FAR; who will be responsible for providing any resources made necessary by those recommendations; any changes in organization, policy or governance that will be necessary to meet the recommendations; who will be responsible for acting on those recommendations; and timelines for acting on and monitoring the implementation of those recommendations.

Programs covered by this cyclical review:

- Master of Science in Engineering – Environmental Engineering

## Implementation Plan (Part A): Departmental Responsibilities

Recommendation	Proposed Follow-up	Responsibility*	Timeline
Review and rationalize course offerings	<p>Address the following suggestions and concerns (8, 18):</p> <ul style="list-style-type: none"> <li>a. Develop courses in air and solid waste management (1), water treatment, air pollution, pulp and paper manufacturing and mining processes (2, 20)</li> <li>b. Clarify role of directed studies/advanced topics in addressing course needs (4, 22)</li> <li>c. Clarify administration of electives (5)</li> <li>d. Address student concerns regarding organization of the Seminar course (9)</li> <li>e. Consider more courses that serve more than one graduate program (23)</li> <li>f. Plan for course renewal (32)</li> <li>g. Review teaching allocations (16, 21)</li> </ul>	Program Coordinator and Program Chair; Dean ENGI	Spring 2017
Address resource challenges	<p>Address the following suggestions and concerns:</p> <ul style="list-style-type: none"> <li>a. access to research space for graduate students (6, 7, 13)</li> <li>b. technical staff assistance (14)</li> <li>c. identify ways to support International students (15)</li> <li>d. identify ways to support additional graduate assistants (25)</li> </ul>	Program Coordinator and Program Chair; Director International, Dean FGS	Spring 2017
Student Committee Structure	Review in light of student comments; revise if appropriate.	Program Coordinator and Program Chair; Dean ENGI	Spring 2017

Address recruitment options	Address the following suggestions and concerns: <ul style="list-style-type: none"> <li>a. consider part-time Masters and new PhD programming (7, 12)</li> <li>b. develop mechanism to bring non-direct entry students (e.g. biology, chemistry, math, geology) into the program (24)</li> <li>c. improve process for reviewing applicants; reduce delays (27)</li> <li>d. highlight uniqueness of existing program to attract new pool of students (30)</li> <li>e. identify, advertise and exploit all funding options for domestic and international students (29)</li> </ul>	Program Coordinator and Program Chair; Dean FGS;	Spring 2017
Items 3, 11, 31	Have been dealt with in Chair's response.	Program Chair	

### Implementation Plan (Part B): Decanal & Administration Responsibilities

Recommendation	Proposed Follow-up	Responsibility*	Timeline
Review Faculty funding model	As part of annual budget cycle, consider alternate funding models based on existing and new revenue streams (19, 26, 28).	Dean	Ongoing
Maintain faculty complement	As part of annual budget cycle, consider appropriate renewal of faculty complement (17)	Dean	Ongoing

\*The Dean of the Faculty, in consultation with the Department Chair shall be responsible for monitoring the Implementation Plan. The details of progress made will be presented in the Deans' Annual Reports and filed in the Office of the Provost and Vice-President (Academic).