University of Toronto Quality Assurance Process (UTQAP)
Cyclical Review: Final Assessment Report & Implementation Plan

Division/Unit:	Department of Civil Engineering
Commissioning Officer:	Dean, Faculty of Applied Science and Engineering
Program(s):	Civil Engineering, BASc, Hons Lassonde Mineral Engineering, BASc, Hons Civil Engineering, MEng, MASc, PhD
Reviewers (Name, Affiliation):	1. Dr. Nemkumar (Nemy) Banthia, Professor, Distinguished University Scholar & Canada Research Chair in Infrastructure Rehabilitation, Department of Civil Engineering, University of British Columbia 2. Dr. Amr Elnashai, Head, Department of Civil and Environmental Engineering, Bill and Elaine Hall Endowed Professor, University of Illinois, Urbana-Champaign, USA 3. Dr. Chris T. Hendrickson, Duquesne Light Company University Professor, Department of Civil and Environmental Engineering, Department of Engineering and Public Policy, Carnegie Mellon University, USA 4. Dr. Arezki Tagnit-Hamou, Professor and Director, Cementitious Materials Laboratory, Chairholder, Industrial Research Chair, Department of Civil Engineering, Université de Sherbrooke
Date of review visit:	May 15-16, 2012
Date reported to AP&P:	October 29, 2012

1. **Outcome:**
   - The Committee on Academic Policy and Programs (AP&P) concluded that the Decanal response adequately addressed the review recommendations.

2. **Significant program strengths:**
   - Highest quality teaching programs
   - Excellent processes for graduate recruitment, supervision and teaching
   - Highest quality research programs
   - Excellent undergraduate and graduate students
   - Dedicated faculty and staff

3. **Opportunities for program improvement and enhancement. The reviewers recommended that the following be considered:**
   - Reviewing the curriculum to consider the relationships between the program's components and learning objectives, connections between courses, and balance of required and elective elements
   - Adding an interdisciplinary option for the capstone course to support students' making connections across sub-disciplines
   - Adopting alternative delivery methods and innovative pedagogical approaches to facilitate increased student-faculty interaction and hands-on learning in large undergraduate classes; ensuring that large graduate classes do not limit discussion and faculty-student interaction
   - Encouraging faculty and students to think and work across sub-disciplines to facilitate students' overall understanding of the discipline and foster larger research initiatives
   - Assessing the fit of the mineral engineering program within the Department

4. **Implementation Plan**
   The Dean undertook in consultation with the Department to support the following changes:
   - **Immediate Term (6 months)**
     - Reviewing the curriculum
       i. The Department is currently conducting a full review of its programs to link program components with learning outcomes; this process is expected to drive curriculum change
     - Adding an interdisciplinary capstone option

        i. The Department's capstone course coordinators will work with the NSERC Chair in Multidisciplinary Engineering Design to identify opportunities for multidisciplinary capstone experiences beyond the three that already exist
    - Adopting alternative delivery methods and innovative pedagogy in large undergraduate classes
        i. The Department currently offers several courses using alternative delivery methods; the Department's curriculum committees will investigate additional innovative teaching opportunities with input from experts within the Faculty and from the University's Centre for Teaching Support and Innovation; the Faculty's current Academic Plan includes reducing undergraduate student to faculty ratio
    - Encouraging faculty and students to think and work across sub-disciplines
        i. The Department has 8 cross-appointed faculty and 5 active international agreements with other universities; the Department has initiated an annual speaker series that will bring in researchers from other disciplines and will strike a task force to explore ways to further facilitate interdisciplinary activity
    - Assessing the fit of the mineral engineering program
        i. The Department will strike a task force to identify the source of and recommend solutions to remaining issues surrounding the integration of mineral engineering into the Department
- **Medium Term (1-2 years)**
    - Assessing the fit of the mineral engineering program
        i. The Department will hold Town Halls each term to facilitate better communication and community among civil and mineral engineering students and Department leadership
- **Longer Term (3-5 years)**
    - Ensuring that large graduate classes do not limit discussion and faculty-student interaction
        i. The Department will continue to increase the number of graduate courses offered to improve graduate learning; the Department's curriculum committees will investigate additional innovative teaching opportunities with input from experts within the Faculty and from the University's Centre for Teaching Support and Innovation

The Dean's Office will follow up annually with the unit on these plans to assess progress.

5. Executive Summary

The reviewers identified the programs' strengths as highest quality teaching and research programs, excellent graduate and undergraduate students, dedicated faculty and staff, and excellent processes for graduate recruitment, supervision and teaching. The reviewers recommended that the following issues be addressed: the need for curriculum review, fostering interdisciplinarity, student learning in large classes, and the integration of mineral and civil engineering in the Department. The Department is currently reviewing its programs to link components to learning outcomes. The Department is working to identify opportunities for additional multidisciplinary capstone experiences and for more innovative teaching. The Department will continue to increase graduate course selection. In addition to a new speaker series and Town Halls, the Department will strike task forces to explore ways to foster further interdisciplinary collaboration and to resolve remaining issues surrounding the integration of mineral engineering into the Department. The Committee on Academic Policy and Programs concluded that the Decanal response adequately addressed the reviewers' recommendations.