



FINAL ASSESSMENT REPORT

February 2018

Master of Science and Doctor of Philosophy in Modelling and Computational Science

18-Month Follow-Up

Dean: Dr. Greg Crawford

Under UOIT's Quality Assurance Framework, all degree programs are subject to a comprehensive review every eight years to ensure that they continue to meet provincial quality assurance requirements and to support their ongoing rigour and coherence. Program reviews involve several stages, including:

1. A comprehensive and analytical self-study brief developed by members of the program under review.
2. A site visit by academic experts who are external to and arm's length from the program who prepare a report and recommendations on ways that it may be improved based on a review of the program's self-study and supporting material, and a two day site visit involving discussions with faculty, staff and students and a tour of the facilities.
3. Development of a plan for improvement by the program and proposed timelines for implementation.

All programs that undergo a review must provide a report eighteen months after the completion of the review to gather information on the progress that has been made implementing the agreed upon plans for improvement.

In 2014/2015 a program review was scheduled for the Master of Science and Doctor of Philosophy program in Modelling and Computational Science. The program has submitted to the Provost's Office a comprehensive chart outlining the achievements they have made relative to the action plans resulting from the review. A summary of these achievements is provided below. The summary report is reviewed by the appropriate standing committee of Academic Council, and is subsequently reported to Academic Council, the Board of Governors and the Quality Council.

The program review site-visit was completed in October 2015. Since that time, the Faculty has made some progress in implementing the plan of action from the program review.

- *Reduce the number of courses required for the PhD.*

The Faculty has reduced Doctoral course requirements from eight courses to three, and modified to include an explicit breadth requirement. Students in the Ph.D. program must successfully complete at least three courses on three out of the following four topics:

- Mathematical modelling
- Numerical Analysis

- High Performance Computing
- Modelling and Simulating Systems

- *Shorten course list.*

Discussion is currently in progress. Several courses have been proposed for deletion.

- *Determine if and how training in stochastic/agent-based modelling techniques might be included.*

The Faculty has created and included MCSC 6040G – Modeling and Simulating Systems using Discrete Units to list of core courses for Master and Doctoral programs.

In place of requiring all students to complete MCSC 6010G, MCSC 6020G, and MCSC 6030G, the Masters and Doctoral degree requirements were modified to allow students to select three of the following core courses:

- MCSC 6010G – Mathematical Modelling
- MCSC 6020G – Numerical Analysis
- MCSC 6030G – High-Performance Computing
- MCSC 6040G – Modeling and Simulating Systems using Discrete Units

- *Review workload credit.*

This is still being reviewed by the Faculty.

- *Review graduate co-op and internship options at other institutions, interpret the market and resource implication, and determine if such a program should be pursued.*

The expansion of the Graduate Professional Skills Program offered through the School of Graduate and Postdoctoral Studies has helped to partially implement this action item. Through this program, graduate students can supplement their disciplinary knowledge in priority skill areas such as professional communication, entrepreneurship and leadership, research and knowledge mobilization, teaching and learning, and career management. The Faculty is still reviewing additional options prior to making a determination.

Next Scheduled Program Review: 2021-2023