



## FINAL ASSESSMENT REPORT Executive Summary Cyclical Program Review

<b>Degree Program:</b>	<b>MSc and PhD in Modelling and Computational Science</b>
<b>Components:</b>	
<b>Dean:</b>	<b>Dr. Ken Wilson</b>
<b>Date:</b>	<b>October 2024</b>

Under Ontario Tech University's Institutional Quality Assurance Process (IQAP) and the Ontario Quality Assurance Framework (QAF), all programs are subject to a comprehensive review at least/at minimum every eight years to ensure that they continue to meet provincial quality assurance requirements and to support their ongoing rigour and coherence.

In academic years 2021-2023, a program review was scheduled for the Master and PhD in Modelling and Computational Science. This is the second program review for this program. A timeline of the review is provided below.

<b>Program Review Timeline</b>	<b>Date</b>
Program Review start date:	Nov. 22, 2022
Self Study submitted/approved:	April 2, 2024
Site Visit:	April 17-18, 2024
External Reviewers Report received:	April 29, 2024
Program Response received:	June 10, 2024
Decanal Response received:	June 25, 2024

Based on the self-study, the reviewers were asked to consider ways in which new topics can be incorporated into existing courses or new elective courses, and how to streamline the incorporation of teaching from other Faculties.

The reviewers commended the program for its engagement with industry experts to inform course content, innovative approaches to content delivery, the Faculty’s strong and diverse expertise, and their commitment to student mentoring, engagement and success.

The site visit took place on **April 17 and 18, 2024**.

The review consisted of two external reviewers. During the in-person site visit, the reviewers met with the following groups and individuals:

- Dr. Lori Livingston, Provost
- Dr. Sean Forrester, Interim Dean of Science
- Dr. Lennaert van Veen, Chair of Internal Assessment Team
- Dr. Carla Cesaroni, Associate Dean, Graduate and Postdoctoral Studies
- Staff from the School of Graduate and Postdoctoral Studies
- Kaelan Caspary, STEM and Data Librarian
- Catie Sahadath, Associate University Librarian, Scholarly Resources
- Faculty, Staff and Students from the Faculty of Science
- Members of the Internal Assessment Team

The external reviewers submitted 9 recommendations identifying specific steps to be taken to improve the program. The reviewers highlighted areas of improvement pertaining to program structure, faculty workload, and strengthening industry partnerships. The prioritized list of recommendations is available in the Implementation Plan.

A Final Assessment Report (FAR) has been prepared to synthesize the reports and recommendations resulting from the review, identifying the strengths of the program as well as the opportunities for program improvement and enhancement. The Implementation Plan (IP) presents a timeline of the follow-up and resource requirements addressing the recommendations from the external reviewers’ report. Both documents, accompanied by this Executive Summary (ES), were delivered to the appropriate standing committee of Academic Council (USC/GSC) and approved on November 26, 2024.

Governance	Document(s)	Type of review	Date
Faculty Council	IP	Feedback	September 10, 2024
Resource Committee	IP	Resource review	October 8, 2024
USC/GSC	FAR, ES, IP	Approval	November 26, 2024
Quality Council	FAR, ES, IP	QAF requirement	
Academic Council	ES, IP	For information	
Board of Governors	ES, IP	For information	
Corporate Website	ES, IP	QAF requirement	

**Due Date for 18-Month Follow-up Report: January 9, 2026**

**Date of Next Cyclical Review: 2029-2031**

**Timeframe for associated site visit: Fall 2030**



**IMPLEMENTATION PLAN**  
**June 2024**  
**MSc and PhD in Modelling and Computational Science**  
**Program Review**  
**Prepared by: Dr. Greg Crawford**

The table below presents a timeline of the follow-up and resource requirements addressing the recommendations from the external reviewers’ report. The Dean solicits feedback on this Implementation Plan through Faculty Council.

<b>Recommendation</b> <i>(corresponding # from reviewers’ report)</i>		<b>Action Item(s)</b>	<b>Specify role of person responsible</b>	<b>Timeline for action and monitoring</b>	<b>Resource Requirements</b>
1.	Increase graduate student funding (paying attention to international students), so that funding levels are in line with other research-intensive universities in southern Ontario and take into account the cost of living in the GTA area.	Monitor progress of graduate funding initiative within the new external fundraising campaign	Dean of Science (in conjunction with Advancement Office and Dean, SGPS)	Annual assessment of progress / success - July 2025  Annual assessment of progress / success - July 2026	N/A  N/A
2.	Hire a tenure-track statistician/biostatistician.	Pursue potential for a CRC hire in bioinformatics (a collaborative approach)	Dean of Science	(Waiting to hear status of current proposal)	N/A
3.	Develop preparatory courses or resources to address disparities in programming and foundational mathematics skills among	Subcommittee of Steering Committee to draft a course proposal	GPD	December 2024	If developed and approved, will need to

	incoming students, ensuring all students have a strong foundation for success.				determine how to resource its delivery
6.	Increase the breadth of courses in the books (all of which need not be offered on a regular basis), some of these would be available and offered when there is sufficient demand. Course breadth can also be achieved through joint offerings with other academic institutions in the area (e.g. Trent U).	Review potential topics for courses and assess how to include in course rotation	GPD (in consultation with program faculty and Dean)	December 2024	Currently assuming no net new courses per year. If more courses end up being offered, they will need to be resourced.
7.	The Program should also consider offering courses through the Fields “Academy”. This would enable faculty to reach a broader student audience and could potentially attract future graduate students to Ontario Tech and this Program (NB Fields also offers compensation of roughly \$10K to the Institution for such courses).	Review potential for working with Fields institute to assess course options available there	GPD (in consultation with program faculty and Dean)	December 2024	Funding implications need to be determined
8.	Implement a robust system for ongoing program evaluation and monitoring, collecting feedback from stakeholders and tracking student outcomes to inform programmatic changes and ensure responsiveness to evolving needs.	Discuss with Institutional Research Office if graduation rates and student performance data can be generated automatically and routinely made available to GPDs	Dean	October 2024	TBD

## Recommendations not Addressed and Rationale

#	Recommendation not Addressed	Rationale
4.	Reduction of teaching loads to 3 courses/year for research faculty who publish, hold an NSERC grant and supervise 2+ graduate students (at least one of whom is a PhD student).	The workload model is determined by the institution in a manner consistent with the collective agreement and, to the extent possible, consistent across Faculties.
5.	Strengthen industry partnerships to provide more opportunities for experiential learning and align the curriculum with current industry trends, enhancing students' real-world application skills.	Industry engagement lies primarily with individual faculty members and their interests. We note SGPS offers a wide range of Graduate Professional Skills training and workshops (e.g., Base Camp sessions).
9.	Provide logistical and financial support for recruitment/promotion efforts.	We recognize this to be an important issue. Rather than establishing specific goals and timelines, our approach will be to have program faculty determine if and where key recruitment opportunities exist. At that point, the ideas will be communicated to and discussed with Dean by the GPD. We hope this will lead some concrete improvements in recruitment efforts (e.g., with an annual budget ask).