

MEMORANDUM

August 9, 2018

Quality Assurance Office

The Faculty of Mathematics endorses the July 2018 two year progress report for the Computational Math (MMath) program.

Computational Mathematics has completed the first four recommendations (create a co-op & course based program, regularize the admin support, increase visibility, discuss more flexibility in the core). The fifth recommendation, add specialization to the program, will be explored this Fall by their graduate committee. The sixth recommendation, to become more involved in faculty and university-wide computational intensive initiatives, by its nature is never "complete". It is something that the Centre is always aware of, and becoming involved as opportunities present themselves. The last recommendation to recognize and incentivize the graduate officer will be a topic of discussion between myself and the Director of the Computational Mathematics program in the Fall term.



Stephen M. Watt
Dean, Faculty of Mathematics



Two-Year Progress Report

Computational Mathematics (MMath)

July 2018

Background:

The last review of the Computational Mathematics (MMath) program was completed in November 2016. The Final Assessment Report was approved by Senate Graduate and Research Council on April 10, 2017. The report pointed out many positive aspects of the program, including its uniqueness in Canada, breadth, and timeline. The report did, however, offer a number of recommendations.

Progress on Implementation Plan:

1. The reviewers support the ongoing initiatives to create course-based, and co-op Masters programs.

Status: completed

Details: Both the course-based and co-op programs were passed by the Senate Graduate and Research Council on October 17, 2016. The first cohort of co-op students are currently on their work term (as of Spring 2018). Eleven students were admitted into the co-op program, 10 of which secured jobs for Spring 2018.

The course-based program also accepted its first cohort in Fall 2017. Four of the 14 Computational Mathematics (CM) MMath students were in the course-work program. The program continues to receive high-quality applicants; of the 20 students starting the CM MMath program in Fall 2018, 4 are course-based students.

2. We recommend that the half-time administrative position be made permanent in order to achieve stability and institutional memory. Staff is a critical point of contact for such a non-departmental based program.

Status: completed

Details: The position has been regularized and is now a permanent half-time position.

3. We recommend enhancement of the visibility of the program at the Faculty level, and increased efforts to highlight the program in promotional material and outreach activities.

Status: completed

Details: In February 2018, a Graduate Alumni Career Panel was jointly held with the Math Graduate Student Association; the panel included two alumni of the CM MMath program. The event was well attended, with approximately 40 attendees. Many of the questions were geared toward CM, and related career paths.

The CM MMath program received more than 100 applications for the Fall 2018 admissions cycle. Many of those applications were of very high quality. Uptake by the faculty was healthy, with 16 students scheduled to start the research-based program in Fall 2018. This number was affected somewhat by the limited lab space allocated to the CM graduate program.

Despite this progress, we continue to discuss ways to promote the CM graduate program.

4. We recommend increasing flexibility within the curriculum by adding one or more course to the list of core courses, leading to a choice of 4 courses for 6 possibilities.

Status: not selected for implementation

Details: As stated in the Final Assessment Report, the Graduate Committee considered this recommendation and decided that adding more core courses would not benefit the program or its students.

5. We recommend exploring the possibility of adding specializations to the program to improve job placement in a competitive environment. The Director and Graduate Officer should follow up with the Associate Dean and take any necessary steps to approve changes in the program description in the calendar to allow for this.

Status: in progress

Details: Exploration of specializations will begin in Fall 2018.

6. We recommend involving Computational Mathematics in Faculty or University-wide computation-intensive initiatives.

Status: in progress

Details: Access to high-performance computing infrastructure (such as SHARCNet, or GPU machines) is made available through individual faculty members. In addition, email invitations to take part in various hack-a-thons are forwarded to the CM graduate students. As initiatives arise, the Director and Graduate Officer will consider how CM can be involved; as such, the status of this recommendation is “in progress”.

7. We recommend that the position of Graduate Officer be recognized and incentivized. This might involve a partial course release or stipend.

Status: in progress

Details: At the time of the report, the Graduate Officer indicated that the workload was not sufficient to justify further compensation, beyond the recognition already afforded in their annual evaluation.

However, the size of the graduate program has increased considerably, and now also includes co-op and course-based options. Incentivizing the Graduate Officer position could also aid in creating a PhD program in CM. The possibility of incentivizing the position will be brought up with the Steering Committee in Spring 2018.

Explain any circumstances that have altered the original implementation plan:

Recruitment into the CM graduate program is being helped by enthusiasm for computing and machine-learning careers. Prospective students recognize the link, and a substantial number of our applicants are interested in machine-learning topics.

Address any significant developments or initiatives that have arisen since the program review process, or that were not contemplated during the review:

The number of applicants to both the graduate and undergraduate CM programs has increased recently. This puts more pressure on the administration of the programs, but also creates opportunity for growth. The CCMIC Steering Committee will be considering how best to take advantage of this new climate.

Report on anything else you believe is appropriate to bring to Senate concerning this program:

Updated Implementation Plan:

	Recommendations	Proposed Actions	Responsibility for Leading and Resourcing (if applicable) the Actions	Timeline for addressing Recommendations
1.	Course-based and Co-op Masters			Completed
2.	Support Staff			Completed
3.	Enhanced visibility of the program			Completed
4.	Increased flexibility of the core			Not pursuing
5.	Adding specialization to the CM program	Discussions of possible specializations	Graduate Committee of the CCMIC	Fall 2018
6.	Involvement of CM in University wide computation-intensive initiatives	Investigation to be made by the Steering Committee on how to do this	Graduate Committee of CCMIC	Spring 2018
7.	Incentivizing the Graduate Officer position	Investigation and discussion of the Steering Committee	Steering Committee of CCMIC	Spring 2018

The Department Chair/Director, in consultation with the Dean of the Faculty shall be responsible for monitoring the Implementation Plan.



Date of next program review: _____ 2022 _____
Date

Signatures of Approval:

Jeff Orchard _____ *Jeff Orchard* _____ August 1, 2018 _____
Chair/Director Date

AFIW Administrative Dean/Head (For AFIW programs only) _____ Date

_____ *Jan* _____ *2018-08-09* _____
Faculty Dean Date

Associate Vice-President, Academic _____ Date
(For undergraduate and augmented programs)

Jeffrey M. Caelli _____ November 1, 2018 _____

Associate Vice-President, Graduate Studies and Postdoctoral Affairs _____ Date
(For graduate and augmented programs)