

ACADEMIC COUNCIL REPORT

ACTION REQUESTED:

Recommendation
Decision
Discussion/Direction
Information

DATE: 28 February 2023

FROM: Undergraduate Studies Committee

SUBJECT: Major Program Modification – Bachelor of Science in Applied and Industrial Mathematics

COMMITTEE MANDATE:

In accordance with the Undergraduate Studies Committee (USC) Terms of Reference, USC has the responsibility “to examine proposals for new undergraduate degree programs and major changes to existing programs and to recommend their approval, as appropriate, to the Academic Council”.

MOTION FOR CONSIDERATION:

That, pursuant to the recommendation of the Undergraduate Studies Committee, Academic Council hereby approves the Major Program Modifications to the Applied and Industrial Mathematics program.

BACKGROUND/CONTEXT & RATIONALE:

The Faculty is proposing the following changes:

1. Rename program as “Mathematics for Science and Industry”;
2. Add a new core course: MATH 4070U – Projects in Applied Mathematics;
3. Change a current required core course, MATH 4050U – Partial Differential Equations, to be an elective;
4. Cross-list a current required course, PHYS 3040U – Mathematical Physics, with MATH 3080U – Applied Partial Differential Equations; and
5. Add 3 new electives: MATH 3010U – Modern Applications in Mathematics, MATH 3035U – Mathematics of Machine Learning, MATH 3090U – Network Science and Applications.

RESOURCES REQUIRED:

No additional resources required.

TRANSITION PLAN:

Students currently enrolled will complete their degree as listed in their academic calendar for the year they started. The removed required course will continue to be offered as an elective for the next three years.

All new students beginning in Fall 2023 will follow the new program map.

CONSULTATION AND APPROVAL:

- Undergraduate Studies Committee: 17 January 2023
- Faculty Council: 6 December 2022
- Curriculum Committee: 22 November 2022

The cross-listing of PHYS 3040U was agreed to by Physics. The Faculty consulted with student alumni and student representatives from the program about the Program name change and the related course changes to Applied and Industrial Mathematics. The students saw no issues with the changes and asked for many of these changes to take place.

NEXT STEPS:

- Pending the approval of Academic Council, the changes will be included in the 2023-2024 Academic Calendar.

SUPPORTING REFERENCE MATERIALS:

- [Major Program Modification Proposal](#)
- New Courses: [MATH 4070U](#); [MATH 3010U](#); [MATH 3035U](#); [MATH 3090U](#);