

Minor Program Adjustment

Faculty: Science	Date: November 13, 2017
Program: Minor in Mathematics	
Undergraduate: <input checked="" type="checkbox"/>	Graduate: <input type="checkbox"/>

Minor Program Adjustments include: New required courses, Deletion of required courses, Other changes to degree requirements or program learning outcomes, New academic requirements or changes to existing requirements.

Motion: That CPRC approve the changes to the Minor in Mathematics.

Proposal Brief

Summary of the proposed change:

This proposal looks to bring the requirements needed to obtain a minor in Mathematics more in line with other Faculty of Science minors, and to provide more flexibility in the courses that students can apply towards their minor. Specifically, the modifications include:

- 1) Removal of MATH 2015U – Calculus III as a mandatory core minor course.
- 2) Adding MATH 1000U – Introductory Calculus and MATH 1850U – Linear Algebra for Engineers to the list of core minor courses
- 3) Removal of the prescribed list of “additional courses”, replaced a more flexible option of at least three additional MATH courses including at least two at the 3000- or 4000 level.

Description of the ways in which the proposed change will enhance the program and/or opportunities for students.

These modifications will allow students to tailor their minor in Mathematics more towards their specific interests in the subject. The changes should also provide students with more flexibility to count MATH courses which may already be part of their major program towards their minor, while staying within the new “double counting” course restrictions. The aim of these changes is to make obtaining a minor in Mathematics accessible to more students, while at the same time maintaining the academic requirements of the minor.

Process of consultation with other units if the change(s) involves students, staff, and/or faculty from other programs or courses.

These modifications have been discussed amongst the Mathematics faculty, and consideration has been given to other disciplines whose students usually enrol in the minor program.

Analysis of financial and enrolment implications

The impact of these changes on programs commonly linked to the Math minor (e.g. Computer Science, Physics, etc.) has been examined. The proposed changes should provide students in these programs with more flexibility in selecting/applying MATH courses towards their minor requirements.

Proposed Implementation Date (state term, e.g. Fall 2017)

Fall 2018

Transition Plan (include a plan for all current students in the program, by year level)

The modifications to the minor in Mathematics are such that students currently registered in the minor will still be able to complete their requirements without delay or additional courses. Those students who have already completed MATH 2015U – Calculus III will still be able to include it towards their minor requirements (provided they have not exceeded the six credit hours of double counted courses). Similarly, they should now have more options available to them when selecting their 3000- or 4000-level MATH courses.

Calendar Copy and/or Program Maps (highlight revisions to existing curriculum)

Mathematics minor

General requirements

A student must take a minimum of 18 credit hours in courses with the designation MATH, ~~of which at least three credit hours must be taken as science electives (i.e. not be required by the major program) and including~~ at least six credit hours ~~must be~~ at the 3000- or 4000-level. ~~If all the courses in a minor group are required by the major program, one additional course in the minor subject must be taken to satisfy the elective rule above. No more than six credit hours can be double-counted towards both major and minor program requirements.~~ A cumulative GPA of at least 2.0 in the minor subject courses is required to successfully complete a minor program.

Specific courses are required for the minor programs in Mathematics. A list of courses follows.

~~Four~~ Three mandatory courses:

- MATH 1010U – Calculus I or MATH 1000U – Introductory Calculus
- MATH 1020U – Calculus II
- ~~MATH 2015U – Calculus III~~ • MATH 2050U – Linear Algebra or MATH 1850U – Linear Algebra for Engineers

~~Two~~ Three additional courses ~~selected from the following:~~

Students must take three additional courses, including at least two 3000- or 4000- MATH courses.

- ~~MATH 3020U – Real Analysis~~
- ~~MATH 3040U – Optimization~~
- ~~MATH 3050U – Mathematical Modelling~~
- ~~MATH 3060U – Complex Analysis~~
- ~~MATH 3070U – Algebraic Structures~~
- ~~MATH 4010U – Dynamical Systems and Chaos~~

Note:

Some of 3000- or 4000- level courses ~~the selected courses~~ will require one or more additional MATH or STAT 2000-series courses to be taken as prerequisites.

Attachments

APPROVAL DATES

Curriculum Committee approval	November 15 th , 2017
Faculty Council approval	December 6, 2017
CPRC Approval	19 January 2018
Submission to Academic Council	27 February 2018