



UNC
COLLEGE OF
ARTS & SCIENCES

THE UNIVERSITY
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DEPARTMENT OF MATHEMATICS

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DATE: October 13, 2015

TO: Administrative Boards of the College of Arts and Sciences and the
General College

FROM: Richard Rimanyi, Director, Undergraduate Studies
Rich McLaughlin, Chair, Department of Mathematics

RE: Proposed changes to degree requirements for Mathematics

Dear Administrative Boards:

We are writing to propose several changes to the degree requirements for obtaining degrees in Mathematics. The Undergraduate Committee and the faculty in the Department of Mathematics have approved these changes, effective in the 2016-2017 academic year, pending approval by the Administrative Boards.

(1) The **Mathematics Major B.A., Mathematics Major B.S., Mathematics Major B.S. - Applied Option,** and **Mathematics minor** degree requirements all contain the line

“MATH 381 and MATH383.”

All four of these lines to be replaced with the following:

“MATH 381 and MATH383. A current or former major in Mathematical Decision Sciences may substitute STOR215 for MATH381.”

(2) Two lines of **Mathematics Major B.S. – Applied Option** are

“Four of MATH 522, 523, 524, 528, 529, 535, 548, 564”

“MATH 566 or 661”

These two lines to be replaced with the following:

“Five of MATH 522, 523, 524, 528, 529, 535, 548, 564, 566, 661, 668; with at least three from 528, 529, 564, 566, 661, 668.”

(3) The line in **Mathematics Major B.S.** reads

“COMP 116 or MATH 565”

This line is to be replaced with the following:

“COMP 110, COMP 116 or MATH 565”

(4) The line in **Mathematics Major B.S. Applied Option** reads

“COMP 116”

This line is to be replaced with the following:

“COMP 110 or COMP 116”

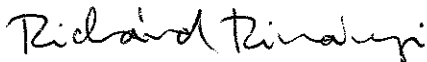
The supporting arguments for proposal (1) are attached on a separate sheet.

With the changes proposed in (2), students wishing to major in Mathematics B.S.- Applied option have more flexibility.

Proposed changes (3) and (4) are replies to changes made by the Department of Computer Science. We have been informed by COMPSCI that they will rarely offer COMP 116 in the future, and will make the courses COMP 110 and COMP 116 “essentially equivalent” courses.

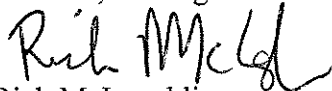
These proposed changes are also reflected in the attached edits to the Undergraduate Bulletin. Thank you for your consideration of our request.

Best regards,



Richard Rimanyi

Director, Undergraduate Studies in Mathematics



Rich McLaughlin

Chair, Department of Mathematics

Cc: Nicholas Siedentop, Curriculum Director, Office of Undergraduate Curricula

Appendix: Arguments for Proposal (1)

Several years ago STOR changed the content of their required STOR 215 so that it now overlaps 70% with MATH 381, which is required for all math degrees and the math minor. Cross-listing is not feasible, since the "other" 30% of MATH 381 is crucial for our majors. This portion teaches students how to write proofs of theorems. The current situation is problematic for some students and the Math DUS. This proposal, and the accompanying proposal for broadening the prerequisites for six upper division math courses, should create a much more manageable situation.

Presently STOR majors who wish to double-major in math or minor in math must either repeat the 70% of the material or petition the Math DUS. Since both courses use the same book and begin the semester with the same chapters, math majors may wrongly assume that the courses are identical. These students petition the Math DUS to substitute for scheduling reasons.

We do not want to force the talented students seeking to double major to repeat three months of material. And, STOR 215 is acceptable for the minor in math. But, we must insist that Math majors take MATH 381. Not only is the ability to write a "proof" of a theorem a core skill for a math bachelors, our upper division courses that require MATH 381 are already a bit weakened by the presence of students that did not fully master that skill in MATH 381.

This proposal will permit STOR majors to substitute STOR 215 for MATH 381 when seeking a second major or a minor in math, but without weakening the current math degree programs. The "or former" language allows students to change from a STOR major to a MATH major. The accompanying prerequisite-broadening proposal, for nearly half of our upper division courses (those requiring writing proofs), will broaden the MATH 381 prerequisite with the language "or a grade of A- or better in STOR 215". Recently this grade was attained by 42% of STOR 215 students. This requirement will notify students that they must be talented enough to learn the "other"

30% on their own, and it will make it easier for the Math DUS to deny petitions from non-STOR majors that are being made merely for scheduling reasons.

This proposal was approved at a Math faculty meeting by a vote of 17 to 1, with the "1" coming from someone who was concerned about the current average proof writing skill level in our theoretical upper division courses.