MEMORANDUM

TO:       Stephen Halperin  
          Dean, College of Computer, Mathematical and Physical Sciences

FROM:     Victor Korenman ØØ
          Associate Provost for Academic Planning and Programs

SUBJECT:  Proposal to Modify the Curriculum for the Major in Mathematics  
          (PCC Log No. 03036)

At its meeting on March 11, 2004, the Senate Committee on Programs, Curricula, and 
Courses approved your proposal to modify the curriculum for the major in Mathematics. A copy 
of the approved proposal is enclosed. It has been modified slightly for clarity, as agreed upon in 
subsequent discussions.

The change is effective in the Fall semester, 2004. The College should ensure that this 
change is appropriately reflected in all university documentation, and that all advisors are 
informed.

VK:sfm  
Enclosure

Cc:      Dr. Mary Giles, University Senate  
          Ms. Barbara Hope, Data Administration  
          Dr. Phyllis Peres, Undergraduate Studies  
          Ms. Anne Turkos, Archives  
          Dr. Scott Wolpert, College of Computer, Mathematical and Physical Sciences  
          Dr. Linda Yokoi, Records & Registrations
DATE SUBMITTED 2-19-04

COLLEGE/SCHOOL CMPS

DEPARTMENT/PROGRAM Mathematics

PROPOSED ACTION (A separate form for each) ADD _____ DELETE _____ CHANGE _x_

DESCRIPTION (Provide a succinct account of the proposed action. Additional detail may be provided in an attachment. Provide old and new sample programs for curriculum changes.)

This proposal requests approval for nominal changes in supporting areas for mathematics major. Please see attachment for details.

JUSTIFICATION/REASONS/RESOURCES (Explain the reason for the proposed action. Identify the source of new resources that may be required. Attach additional material if needed.)

No discernible resource issues arise from any of the proposed changes.

Please see attachment for justification/reasons.

APPROVAL SIGNATURES

1. Department Committee Chair
   
2. Department Chair
   
3. College/School PCC Chair
   
4. Dean
   
5. Dean of the Graduate School (if required)
   
6. Chair, Senate PCC
   
7. Chair of Senate
   
8. Vice President for Academic Affairs & Provost

DATE

2-19-04

2/9/04

2/26/04

2-24-04

2/10/04

3/11/03

3/15/03
Change in Computer Science Supporting Area Sequence for Mathematics Majors
Traditional Track

RATIONALE: Each Math Major must take a 3-course supporting sequence in the application of mathematical reasoning. The current Computer Science supporting sequence as listed in the catalog is CMSC 114 (Computer Science II), CMSC 250 (Discrete Structures), and CMSC 251 (Algorithms). The sequence has not been edited in a long time.

Recent changes in Computer Science courses have included the following:

* CMSC 106 has been functionally replaced by CMSC 131.
* CMSC 114 has been functionally replaced by CMSC 132
* CMSC 214 has been functionally replaced by CMSC 212
* CMSC 251 has been modified and renumbered as CMSC 351.
* While CMSC 251 did not require CMSC 214 as a prerequisite, CMSC 351 does require CMSC 212 as a prerequisite.

So, although the simple substitution would have CMSC 132, CMSC 250, CMSC 351 as an appropriate supporting sequence, this now would require a fourth course, namely CMSC 212.

In light of the general mathematical background needed for Computer Science courses, the Department of Mathematics proposes to change the 3-course sequence in the Traditional Track to CMSC 114, 214, 250, or the newer sequence CMSC 132, 212, and 250. (In particular, neither CMSC 251 nor CMSC 351 would be a course in the 3-course sequence.)

CURRENT catalogue description: 5(c) (ii) in the Traditional Track:

5(c)  (i) CMSC 114, CMSC 214, and one of CMSC 311, CMSC 330
     (ii) CMSC 114, 250, 251

SUGGESTED catalogue description (consolidating (i) and (ii)):

5(c) CMSC 114 or 132, and 214 or 212, and either 250, 311, or 330
RATIONALE: Each Math Major needs to take a 3-course supporting area sequence. One of those is in Business and Management. Until now the sequence was BMGT 220 (Principles of Accounting I), 221 (Principles of Accounting II), 340 (Business Finance). The change suggested involves the addition of BMGT 343 (Investments) as an alternative 3rd course in the sequence. The rationale for such a change is that mathematics majors are allowed to register for BMGT 343 without the catalogue prerequisite BMGT 340. BMGT 343 contains an overview of investments, and is reasonable as one of the triad of supporting courses in Business.

CURRENT catalogue description: (5(f))

5(f) BMGT 220-221-340

SUGGESTED catalogue description:

5(f) BMGT 220, 221, and either 340 or 343.
Change in the Upper-Level Courses Allowed for the Math Major
Statistics Track

RATIONALE: The Math Major (Statistics Track) is required to take 8 upper level mathematics and/or statistics courses, which are listed as follows in #3:

(a) One course from MATH 410 and 350
(b) One course from AMSC 460 and 466
(c) One course from MATH 401 and 405
(d) STAT 410
(e) One course from STAT 401 and 420.
(f) STAT 430
(g) Two additional courses from the following list:
   
   (i) Any 400-level or higher STAT courses except STAT 464
   (ii) MATH 351, 411, 412, 414, 420, 464
   (iii) AMSC 477
   (iv) BIOM 402

The Department of Mathematics suggests adding MATH 424 to the list in 3(g)(ii). The newly labeled MATH 424 (Introduction to Mathematics of Finance) has STAT 400 or BMGT 231 as prerequisite, and has linear algebra and differential equations as advisable prerequisites. Thus the course is suited to be in the Statistics Track.

CURRENT catalogue description:

3(g)(ii) MATH 351, 411, 412, 414, 420, 464

SUGGESTED catalogue description:

3(g)(ii) MATH 351, 411, 412, 414, 420, 424, 464
Change in the Astronomy Supporting Area Sequence for the Math Major
Secondary Education Track

RATIONALE: Each student following the Secondary Education Track of the Math Major needs a sequence of (generally) 2 supporting courses. One of the supporting sequences allowed has been "ASTR 200 and a second 3-credit ASTR course, excluding ASTR 100, 101, 110, and 111.

ASTR 200 (Introductory Astronomy and Astrophysics) is apparently going out of business. It is necessary to keep (g) because of those students still in the pipeline. However, the Department of Astronomy assures the Department of Mathematics that ASTR 120 (Introductory Astrophysics -- Solar System) an ASTR 121 (Introductory Astrophysics II -- Stars and Beyond) would be a suitable alternative sequence.

The Department of Mathematics suggests adding this sequence between (g) and (h)

CURRENT catalogue description: #6 for Secondary Education Track:

(a) CHEM 103 and 104
(b) CHEM 103 and 113
(c) PHYS 221 and 222
(d) PHYS 161 and 262
(e) PHYS 141 and 142
(f) BSCI 105 and 106
(g) ASTR 200 and a second 3-credit ASTR course, excluding ASTR 100, 101, 110, and 111.
(h) METO 200 and 201, and any 400 level METO course
(i) GEOL 100 an 110, and one of GEOL 322 or GEOL 341

SUGGESTED catalogue description: #6 for Secondary Education Track:

(a) CHEM 103 and 104
(b) CHEM 103 and 113
(c) PHYS 221 and 222
(d) PHYS 161 and 262
(e) PHYS 141 and 142
(f) BSCI 105 and 106
(g) ASTR 200 and a second 3-credit ASTR course, excluding ASTR 100, 101, 110, and 111.
(h) ASTR 120 and 121
(i) METO 200 and 201, and any 400 level METO course
(j) GEOL 100 and 110, and one of GEOL 322 or GEOL 341