May 15, 2013

MEMORANDUM

TO:            Jayanth Banavar  
                Dean, College of Computer, Mathematical and Natural Sciences

FROM:         Elizabeth Beise  
                Associate Provost for Academic Planning and Programs

SUBJECT: Proposal to Modify the Curriculum of the Minor in Planetary Sciences (PCC log no. 12045)

The proposal to modify the curriculum of the Minor in Planetary Sciences has been administratively approved. A copy of the approved proposal is attached.

The change is effective Fall 2013. Please ensure that the change is fully described in the Undergraduate Catalog and in all relevant descriptive materials, including the program’s four-year plan (contact Lisa Kiely at lkiely@umd.edu for more information), and that all advisors are informed.

MDC/

Enclosure

cc:    William Idsardi, Chair, Senate PCC Committee  
       Sarah Bauder, Office of Student Financial Aid  
       Reka Montfort, University Senate  
       Erin Howard, Division of Information Technology  
       Donna Williams, Institutional Research, Planning & Assessment  
       Anne Turkos, University Archives  
       Linda Yokoi, Office of the Registrar  
       Robert Gaines, Undergraduate Studies  
       Robert Infantino, College of Computer, Mathematical and Natural Sciences  
       Stuart Vogel, Astronomy  
       Roberta Rudnick, Geology
THE UNIVERSITY OF MARYLAND, COLLEGE PARK
PROGRAM/CURRICULUM/UNIT PROPOSAL

• Please email the rest of the proposal as an MSWord attachment
to pcc-submissions@umd.edu.
• Please submit the signed form to the Office of the Associate Provost for Academic Planning and Programs, 1119 Main Administration Building, Campus.

College/School: CMNS
Please also add College/School Unit Code-First 8 digits: 01203000
Unit Codes can be found at: https://hypprod.umd.edu/Html_Reports/units.htm

Department/Program: Astronomy, Geology
Please also add Department/Program Unit Code-Last 7 digits: 1300301, 1301101

Type of Action (choose one):

X Curriculum change (including informal specializations)  O New academic degree/award program
□ Renaming of program or formal Area of Concentration □ New Professional Studies award iteration
□ Addition/deletion of formal Area of Concentration □ New Minor
□ Suspend/delete program □ Other

Italics indicate that the proposed program action must be presented to the full University Senate for consideration.

Summary of Proposed Action:
This is a proposal to add course electives to the Joint Minor in Planetary Sciences to reflect the expansion of relevant course offerings in the Departments of Astronomy and Geology.

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APPROVAL SIGNATURES - Please print name, sign, and date. Use additional lines for multi-unit programs.

1. Department Committee Chair (ASTR) Eric McKenzie, Eric McKenzie 11/29/12
   Department Committee Chair (GEOL) JOHN MASCIA 12/6/12
2. Department Chair (ASTR) Stuart Vogel, Stuart Vogel 12/5/12
   Department Chair (GEOL) Roberta Rudnick, Roberta Rudnick 12/6/12
3. College/School PCC Chair Ramesh P. Ramanujam 2/22/2013
4. Dean Tazewell R. Bynum 2/22/13
5. Dean of the Graduate School (if required) N/A
6. Chair, Senate PCC ADMINISTRATIVELY APPROVED
7. University Senate Chair (if required) 
8. Senior Vice President and Provost Emaharita J. Benie 3/27/2013
Proposal for changes to the Joint Minor in Planetary Sciences

1. This is a proposal to modify an existing minor.

2. Reasons for the modifications: Astronomy and Geology seek to enhance the appeal and academic strength of the Planetary Science minor by adding three courses (two new and one existing) to its set of electives. These courses are consistent with the minor’s goals of providing students with a broad understanding of the application of the methods of astronomy and geology to the study of the Solar System, and developing their appreciation of how issues in the study of planets connect with larger issues in those sciences.

Specific courses to be added to the minor are:

• ASTR230 - The Science and Fiction of Planetary Systems – (GenEd DSNS 1-series) A survey of physical parameters constraining planetary surface environments and the potential biospheres that they support, and a scientific critique of planetary environments envisioned by fiction.

• GEOL212 – Planetary Geology – (GenEd DSNS) An introductory survey of the physical properties and origin of the planetary bodies of the Solar System.

• GEOL412 – The Geology of Terrestrial Planets – an upper-level investigation of the surface and interior properties of the planetary bodies of the inner Solar System, as illuminated by recent planetary exploration missions. (Currently pending VPAC approval.)

Courses currently required for the minor are:

Required:

• One of the following:
  ASTR100 Introduction to Astronomy (3)
  ASTR101 General Astronomy (4)
  ASTR120 Introductory Astrophysics - Solar System (3)

• One of the following:
  GEOL 100/110 Physical Geology/Physical Geology Lab (4)
  GEOL 120/110 Environmental Geology/Physical Geology Lab (4)

• One of the following:
  ASTR330 Solar System Astronomy (3)
  ASTR430 The Solar System (3)

Plus three from the following. At least one choice must be from Geology and one from Astronomy. At least six credits must be at the 300 – 400 level:

• ASTR220 Collisions in Space (3)
• ASTR380 Life in the Universe - Astrobiology (3)
• ASTR498 Special Problems in Astronomy (3)
• GEOL322 Mineralogy (4)
• GEOL340 Geomorphology (4)
• GEOL437 Global Climate Change, Past and Present (3)
• GEOL499 Special Problems in Geology (3)
• Or another appropriate astronomy or geology course approved in advance by the Astronomy or Geology advisor (3-4)

Depending on the optional course taken, there is a total of 19 - 22 required credits (see prerequisites). All courses presented for the minor must be passed with a grade of C or better.

Proposed courses to be required for the minor follow. All changes are boldface:

Required:

• One of the following:
  ASTR100 Introduction to Astronomy (3)
  ASTR101 General Astronomy (4)
  ASTR120 Introductory Astrophysics - Solar System (3)
• One of the following:
  GEOL 100/110 Physical Geology/Physical Geology Lab (4)
  GEOL 120/110 Environmental Geology/Physical Geology Lab (4)
• One of the following:
  GEOL212 Planetary Geology (3)
  ASTR330 Solar System Astronomy (3)
  ASTR430 The Solar System (3)

Plus three electives from the following. At least one choice must be from Geology and one from Astronomy. At least six credits from the list below and nine credits overall must be at the 300 – 400 level:

• ASTR220 Collisions in Space (3)
• ASTR230 The Science and Fiction of Planetary Systems (3)
• ASTR380 Life in the Universe - Astrobiology (3)
• ASTR498 Special Problems in Astronomy (3)
• GEOL322 Mineralogy (4)
• GEOL340 Geomorphology (4)
• GEOL412 Geology of Terrestrial Planets (3)
• GEOL437 Global Climate Change, Past and Present (3)
• GEOL499 Special Problems in Geology (3)
• Or another appropriate astronomy or geology course approved in advance by the Astronomy or Geology advisor (3-4)

Depending on the optional course taken, there is a total of 19 - 22 required credits (see prerequisites). All courses presented for the minor must be passed with a grade of C or better. As noted above, at least nine credits must be at the 300 – 400 level.

3. Prerequisites
In principle, a student could complete the minor without having to take any prerequisite course not on the list of required courses. Depending on the optional courses chosen, a person may have to take as many as three supporting prerequisites. The proposed new courses have the following prerequisites:

- ASTR230 (Math eligibility of MATH115 or higher, or MATH113)
- GEOL212 (No prerequisites)
- GEOL412 (GEOL340 – Geomorphology or GEOL341 – Structural Geology)