MEMORANDUM

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

FROM: Elizabeth Beise
      Associate Provost for Academic Planning and Programs

SUBJECT: Proposal to Modify the Minor in Hydrology (PCC log no. 13065)

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

The change is effective Fall 2014. Please ensure that the change is fully described in the Undergraduate Catalog and in all relevant descriptive materials.

MDC/

Enclosure

cc: Marilee Lindemann, Chair, Senate PCC Committee
    Barbara Gill, Office of Student Financial Aid
    Reka Montfort, University Senate
    Erin Howard, Division of Information Technology
    Pam Phillips, Institutional Research, Planning & Assessment
    Anne Turkos, University Archives
    Linda Yokoi, Office of the Registrar
    Doug Roberts, Undergraduate Studies
    Roberta Rudnick, Department of Geology
THE UNIVERSITY OF MARYLAND, COLLEGE PARK
PROGRAM/CURRICULUM PROPOSAL

DIRECTIONS: Provide one form with original approval signatures in lines 1 - 4 for each proposed action. Keep this form to one-page in length. Forms and appropriate attachments should be submitted to the Office of Academic Affairs, who will assign a Log Number to each proposal. Also submit an electronic version of as much of the proposal as is possible.

DATE SUBMITTED 9/17/13

PCC LOG NO. 13065

COLLEGE/SCHOOL CMNS

DEPARTMENT/PROGRAM GEOL

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

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

This is a proposal for the modification of the minor in Hydrology. See attached.

JUSTIFICATION/REASONS/RESOURCES (Briefly explain the reason for the proposed action. Identify the source of new resources that may be required. Details should be provided in an attachment.)

To bring Geology’s minor in Hydrology up to date by inclusion of recently developed curriculum.

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

VPAAP Rev. 3/1/04
Proposal for changes to the Minor in Hydrology

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

2. Catalog Description is unchanged.

Courses currently required for the minor (those to be changed or eliminated in the revision in boldface):

Required:

One of the following:
- GEOL 100/110 Physical Geology/Physical Geology Lab (4)
- GEOL 120/110 Environmental Geology/Physical Geology Lab (4)
**GEOL 322 Mineralogy (4)**
**GEOL 342 Sedimentation and Stratigraphy (4)**

Plus two from:

- GEOL 436 Principles of Biogeochemistry (3)
- GEOL 444 Low-Temperature Geochemistry (4)
**GEOL 451 Groundwater (3)**
**GEOL 452 Watershed and Wetland Hydrology (3)**
- GEOL 499 Special Problems in Geology (3)

Proposed courses for the revised minor (new/changed requirements are boldfaced):

Required:

One of the following:
- GEOL 100/110 Physical Geology/Physical Geology Lab (4)
- GEOL 120/110 Environmental Geology/Physical Geology Lab (4)
**GEOL 451 Groundwater (3)**
**GEOL 452 Watershed and wetlands hydrology (3)**

Plus two from:

- GEOL 436 Principles of Biogeochemistry (3)
- GEOL 444 Low-Temperature Geochemistry (4)
**One of the following:**
- **GEOL453 Ecosystem Restoration (3)**
- **GEOL435 Environmental Geochemistry (3)**
- GEOL 499 Special Problems in Geology (3)

In 2004, Geology’s existing citation Hydrology was converted into a minor. This minor focuses on the physical and chemical interactions of both surface and groundwater with the physical solid Earth, providing useful background to students seeking practical, applications-oriented training in environmental geosciences. Since 2004, however,
Geology has hired several new faculty members who have brought in new expertise and significantly increased its range of course offerings. We now propose revisions to four of our minors in order to bring them up to date with our current curriculum resources.

Specific changes to the Hydrology minor include:

- The elimination of GEOL322 – Mineralogy, and GEOL342 – Sedimentation and Stratigraphy from the list of required courses.

- The elevation of GEOL451 – Groundwater, and GEOL452 – Watershed and wetlands Hydrology from the list of elective courses to the required course list.

- The addition of GEOL453 – Ecosystem Restoration and GEOL435 – Environmental Geochemistry to the list of elective courses with the stipulation that only one can count toward the minor.

In 2004, GEOL322 – Mineralogy, and GEOL432 – Sedimentation and Stratigraphy were made required courses for Hydrology because each provides useful prerequisite knowledge to hydrogeologists. At the time, our two specialized courses in hydrogeology, GEOL451 – Groundwater, and GEOL452 – Watershed and Wetland Hydrology, were made options among elective courses. After a decade of observation and reflection, we now feel that this was misguided, as it made it possible for a student to complete the minor using courses that were peripheral to hydrogeology without ever fulling coming to grips with the discipline. The elimination of GEOL322 and GEOL342 from the list of required courses, and their replacement by GEOL451 and GEOL452 will make specialized knowledge in hydrogeology central to the minor and serve to distinguish it from other Geology minors. The addition of the option to take GEOL435 – Environmental Geochemistry or GEOL453 – Ecosystem Restoration will enable interested students effectively to bridge the practice of hydrogeology with biologically oriented environmental sciences. The proposed changes do not significantly alter that course load or general prerequisites needed to complete the minor.