May 24, 2006

MEMORANDUM

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

FROM: Phyllis Peres  
   Associate Provost for Academic Planning and Programs

SUBJECT: Proposal to modify the curriculum in the Physical Sciences Program  
   (PCC log no. 05032)

At its meeting on February 17, the Senate Committee on Programs, Curricula, and Courses approved your proposals to modify the undergraduate curriculum in Meteorology Physics. Copies of the approved proposals are enclosed. Please accept my apologies for the delay in formal notification.

The changes are effective in Fall 2006. The College should ensure that the new requirements are fully described in the Undergraduate Catalog and in all relevant descriptive materials, and that all advisors are informed.

CWR/

Enclosure

cc: James Baeder, Chair, Senate PCC  
    Sarah Bauder, Student Financial Aid  
    Mary Giles, University Senate  
    Barbara Hope, Data Administration  
    Anne Turkos, Archives  
    Linda Yokoi, Records & Registrations  
    Katherine McAdams, Undergraduate Studies  
    Deborah Reid Bryant, College of Computer, Mathematical and Physical Sciences
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.)

The current requirements for the Physical Sciences Program include a two semester sequence of chemistry: CHEM103 and 113. The Physics Department proposes that this chemistry sequence be replaced by CHEM135/136: General Chemistry for Engineers/Lab and an additional science elective chosen from an approved list. Note: students planning to pursue graduate work in atmospheric sciences would be required to take CHEM231/232: Organic Chemistry I/Lab for this science elective.

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.)

The Chemistry Department is phasing out the CHEM103 and CHEM113 sequence of courses. The Atmospheric and Oceanic Science Department has advised us that the CHEM135/136 and CHEM231/232 sequence of courses is the best choice of available introductory CHEM courses for students interested in the study of atmospheric sciences. The science elective provides some flexibility for students pursuing fields and careers that do not require knowledge of organic chemistry.

APPROVAL SIGNATURES

1. Department Committee Chair  
   Signature: Victor M. Yakovenko  
   Date: 11/28/05

2. Department Chair  
   Signature:  
   Date: 11/30/05

3. College/School PCC Chair  
   Signature:  
   Date: 11/30/05

4. Dean  
   Signature:  
   Date: 11/30/05

5. Dean of the Graduate School (if required)  

6. Chair, Senate PCC  
   Signature:  
   Date: 2/17/06

7. Chair of Senate  
   Signature:  
   Date: 5/24/06

8. Vice President for Academic Affairs & Provost  
   Signature:  
   Date:  

DATE SUBMITTED November 28, 2005  

PCC LOG NO. 05032

COLLEGE/SCHOOL CMPS

DEPARTMENT/PROGRAM PHYS/Physical Sciences Program

VPAAP 8-05
The text below reflects exact changes proposed for the Undergraduate Catalog description of Physical Science Program requirements (p. 144 in the 2005-06 Undergraduate Catalog). Old items to be deleted are in *italics*; additions are in **bold** – underlined in each case.

**Description of Proposed Program Change**

The current requirements for the Physical Sciences Program include a two semester sequence of chemistry: CHEM103 and 113. The Physics Department proposes that this chemistry sequence be replaced by CHEM135/136: General Chemistry for Engineers/Lab and an additional science elective chosen from an approved list. Note: students planning to pursue graduate work in atmospheric sciences would be required to take CHEM231/232: Organic Chemistry I/Lab for this science elective.

**Meteorology Physics Area of Concentration**

**Current Catalog Entry**

1. Basic Requirements. Courses are required in four foundational disciplines.
   a) Chemistry: CHEM 103 and 113 (8 credits)
   b) Mathematics: MATH 140, 141 and one other math course for which MATH 141 is a prerequisite (11 or 12 credits)
   c) Physics: PHYS 161, 260/261, 270/271 (11 credits) or PHYS 171, 174 272, 273, 275, 276 (14 credits). Students desiring a strong background in physics should take the 171-276 sequence, which is required of physics majors and offers much smaller classes than the 161-271 sequence.
   d) Changes in requirements are under review. Students should consult the Department for updated information.

**Proposed Catalog Entry**

1. Basic Requirements. Courses are required in four foundational disciplines.
   a) Chemistry: CHEM 103 and CHEM 113 (8 credits) **CHEM 135 and 136 (4 credits)**
   b) Science Elective (one of the following): ASTR 120, BSCI 105, BSCI 106, CHEM 231/232, ENAE 283, ENCH 215, ENEE 204, ENES 102, ENES 220, ENES 221, ENME 232, ENSP 101, GEOL 100/110, GEOL 120, GEOL 212, or METO 200/201. Note: Students planning to pursue a career in atmospheric sciences are expected to take CHEM 231/232 to fulfill this science elective.
   c) Mathematics: MATH 140, 141 and one other math course for which MATH 141 is a prerequisite (11 or 12 credits)
   d) Physics: PHYS 161, 260/261, 270/271 (11 credits) or PHYS 171, 174 272, 273, 275, 276 (14 credits). Students desiring a strong background in physics should take the 171-276 sequence, which is required of physics majors and offers much smaller classes than the 161-271 sequence.
   e) Changes in requirements are under review. Students should consult the Department for updated information.

**Commentary**

1. The Chemistry Department has phased out the CHEM103 and CHEM113 sequence of courses. The Atmospheric and Oceanic Science Department has advised us that the CHEM135/136 and CHEM231/232 sequence of courses is the best choice of available introductory CHEM courses for students interested in the study of atmospheric sciences. The Chemistry Department has advised us that CHEM 135/136 is the best choice for students planning to complete a single analytic chemistry course. The science elective provides some flexibility for students pursuing fields and careers that do not require knowledge of organic chemistry.
2. The list of science elective were discussed and agreed to by the physical science committee, which has representatives from the relevant departments. It is often the case that students changing their major to physical science will have already completed a course from this list. Current or prospective physical science majors who wish to complete courses on this list that are restricted to majors in other departments will need to seek approval from those departments.
Wonderful! I approve. Please go with it......Herm

Thomas Gleason wrote:

> Mike and Herman,
> >
> > Russ Dickerson agreed to the following change to the physics-meteorology and
> physical science program meteorology specialization with regard to the chemistry
courses:
> >
> > CHEM135/136 and 231/232 preferred
> >
> > CHEM131/132 and 231/232 acceptable for those students who have already completed
CHEM131/132.
> >
> > Let me know if this is okay with you so that I can submit the PCC paperwork.
> >
> > Thanks,
> >
> > Tom
>
>>> Russell Dickerson wrote:
>>> >>>
>>> >>> Tom
>>> >>>
>>> >>> I agree that we should encourage the METO focused Phys Sci students to take
CHEM 135/136 >>> followed by CHEM 231/232; if they have done 131 that is ok too.
>>> >>>
>>> >>>
>>> >>> Russ
>>> >>>*******************************************************************************
>>> >>> Russell R. Dickerson, Professor & Chairman
>>> >>> Department of Atmospheric and Oceanic Science
>>> >>> Affiliate of Chemistry & Chemical Physics
>>> >>> The University of Maryland, College Park, MD 20742
>>> >>> Phone: (301) 405-5391
>>> >>> Fax: (301) 314-9482; http://www.atmos.umd.edu/~russ
>>> >>>*******************************************************************************
Hello,

Mike and I are in agreement that the best one semester general chem course would be 135 (lecture) and 136, if lab is needed. 135 more-or-less covers all of general chem whereas 131 does not. If desirable, I can send you the tentative list of topics for the new chem in the 4th semester which will show the subjects not being covered by 131,

Herman Ammon

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Thomas Gleason wrote:

Dear Professor Ammon,

I think I may need to clarify this a bit. The students interested in atmospheric sciences will be required to take two chemistry courses. Professor Dickerson, from Meteorology, would prefer that the students majoring in Physics-Meteorology or Physical Sciences with a specialization in meteorology take CHEM131/132 and 231/232 for the two chemistry courses. Professor Dickerson says that he discussed this with Professor Doyle.

The student in the physical sciences program who aren't interested in atmospheric sciences would be allowed to take CHEM135/136 and an additional science elective.

The Physics Department needs to submit PCC requests for both the Physics-Meteorology area of concentration and the Physical Sciences program due to the recent changes in the chemistry course sequence. I need to resolve this issue soon, and we will probably need a letter from the Chemistry Department in support of the request. If you still have concerns about this, would you please contact Professor Dickerson (russ@atmos.umd.edu)?

Best regards,

Tom Gleason
Assistant Director
Physics Student Services