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 M.S. and Ph.D. degrees in Atmospheric and Oceanic Science (PCC log no. 08088)

Your proposal to modify the M.S. and Ph.D. programs in Atmospheric and Oceanic Science has been administratively approved. A copy of the approved proposal is attached.

The changes are effective Fall 2009. The College should ensure that the changes are fully described in the Graduate Catalog and in all relevant materials, and that all advisors are informed.

CWR/

Enclosure

cc: Carmen Balthrop, Chair, Senate PCC Committee  
Sarah Bauder, Office of Student Financial Aid  
Reka Montfort, University Senate  
Barbara Hope, Data Administration  
Denise Nadasen, Institutional Research & Planning  
Anne Turkos, Archives  
Linda Yokol, Office of the Registrar  
Thomas Castonguay, Graduate School  
James Purtilo, College of Computer, Mathematical and Physical Sciences
DATE SUBMITTED __April 20, 2009__

COLLEGE/SCHOOL __CMPS__

DEPARTMENT/PROGRAM __Atmospheric and Oceanic Science (AOSC)__

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.)

We propose to add the department weekly seminar series as a 1-credit course (AOSC 718) for our graduate students. The main changes are: (1) for M.S. students, 3 hours of AOSC 718 can replace a 600-level course, but the total credit hours are not changed; (2) for Ph. D students, 3 hours of AOSC 718 can be used to replace a 600-level course, and there are 3 more hours of AOSC 718 required. See attachment for details.

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.)

We propose to add the department weekly seminar series as a 1-credit course for our graduate students. This is a common practice in our field and many other fields so that the students can be assured an opportunity to learn about the current research and development in the field. No additional resources are needed.

APPROVAL SIGNATURES - Please print name, sign, and date

1. Department/Committee Chair __Russell Dickerson__
   
2. Department Chair __James Carton__
   
3. College/School PCC Chair __ James Purtsch __
   
4. Dean __James Purtsch__
   
5. Dean of the Graduate School (if required) __James Purtsch__
   
6. Chair, Senate PCC __Phyllis Rees__
   
7. Chair of Senate __Phyllis Rees__
   
8. Vice President for Academic Affairs & Provost __Phyllis Rees__

VPAAP 8-05
I. Overview of the Proposal

This is a proposal to add critiques of the weekly Department seminars as a required 1-credit course for graduate students.

II. Rationale

The Department seminar series covers current research and advancement in the atmospheric, oceanic, and climate sciences. Traditionally, students have been asked to attend, but there has been neither verification nor evaluation. By adding the seminar as a required course in which student can critique the talks, their feedback can be collected and their understanding can be evaluated, the course aims to provide an enhanced experience important in helping the students to be informed of the frontiers of research in the field. This is a common practice in our field and many other fields.

III. Requirements for Major

A. Current (Full description as in the Graduate Catalog with highlighted text to be modified by this proposal)

Master of Science (M.S.)
The Atmospheric and Oceanic Science Department offers a non-thesis program leading to the Master of Science Degree. The requirements include course work, a scholarly paper and presentation, and a comprehensive examination. This program provides fundamental training to prepare students for research and operational work in the atmospheric and oceanic sciences.

Each new student will be assigned to a faculty advisor whose interests parallel those of the student. The faculty advisor will assist in the development of the student's course program and will follow the student's progress thereafter. The student may select an alternate advisor at any time, although financial support is dependent upon the availability of funds.

The student must submit an M.S. degree course plan, and a tentative schedule for completion, by the end of the first nine credit hours. A minimum of 30 semester hours of coursework is required for the degree program. This must include 27 hours of 600-level AOSC courses. AOSC 400-level courses are not acceptable for credit toward the degree. A maximum of 3 credits of AOSC 798 (Directed Graduate Research) is acceptable toward the degree. The purpose of the scholarly paper is to demonstrate the ability to conduct original or literature research. The paper will become part of the permanent archive of the Department. A Ph.D. dissertation prospectus will satisfy this requirement.

The Comprehensive Examination consists of written and oral portions. The written portion is composed of questions covering the subject areas of the following Core courses: AOSC 610, 611, 620, 621, 617 and 680. AOSC 611 can be replaced by AOSC 600 for those students with a specialization in Chemistry who get approval from their advisor and the AOSC Graduate Director.

All requirements for the M.S. degree must be completed within a five-year period. This time limit applies to any transfer work from other institutions to be included in the student's program. A full-time student can easily complete the M.S. degree in two years.

Doctor of Philosophy (Ph.D.)
The Department of Atmospheric and Oceanic Science offers a program leading to the Doctor of Philosophy Degree (Ph.D.) in atmospheric and oceanic sciences. This program is designed to furnish the student with the education and research background necessary to carry out independent and original scientific research. In order to earn the Ph.D., the student must complete a course work requirement, pass the Candidacy Examinations including a research prospectus, and prepare and defend a dissertation.
nine credit hours. A minimum of 30 semester hours of coursework is required for the degree program. This must include a minimum of 24 hours of 600-level AOSC courses. The remaining 6 semester-hours can come from additional 600-level courses, AOSC 718 (department seminars) or equivalent (pending approval by the Graduate Director), AOSC 798 (Directed Graduate Research). For AOSC 718 or AOSC 798, a maximum of 3 credit hours is acceptable toward the degree. The purpose of the scholarly paper is to demonstrate the ability to conduct original or literature research. The paper will become part of the permanent archive of the Department. A Ph.D. dissertation prospectus will satisfy this requirement.

The Comprehensive Examination consists of written and oral portions. The written portion is composed of questions covering the subject areas of the following Core courses: AOSC 610, 611, 620, 621, 617 and 680. AOSC 611 can be replaced by AOSC 600 for those students with a specialization in Chemistry who get approval from their advisor and the AOSC Graduate Director.

All requirements for the M.S. degree must be completed within a five-year period. This time limit applies to any transfer work from other institutions to be included in the student's program. A full-time student can easily complete the M.S. degree in two years.

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A student seeking a Ph.D. degree will be assigned to a faculty advisor whose interests parallel those of the student. The academic advisor will establish and chair an advising committee which will oversee the student's degree program.

The course work requirement is 30 semester hours in 600-level or above AOSC Department courses. In addition, the student must complete six (6) credits of AOSC 718 or equivalent (pending approval by the Graduate Director) of which up to three (3) semester-hours can be used to satisfy the requirement of 30 semester-hours above, and 12 credits of AOSC 899 (Doctoral Dissertation Research). It is anticipated that students may wish to take a number of the core courses in order to prepare for the Qualifying Examination.

In addition, there is a Minor course requirement of an additional nine semester hours of ancillary courses taken beyond the bachelor's degree from other departments in a related scientific discipline, at least 6 of which must be at the 600-level or above. These credits need not be from the same department but must have a unified or coherent theme. Students may petition the Department for a waiver of a portion of these requirements based on credits earned at another institution at the graduate level.

A student seeking the Ph.D. degree in atmospheric and oceanic science must pass the Candidacy Examinations, which are divided into two parts: The Qualifying Examination and the Specialty Examination. During the Specialty Examination, the student must present a dissertation prospectus to the examination committee. Following successful defense of the prospectus, the student advances to candidacy. Ability to perform independent research must be shown by a written dissertation based on the proposal presented at the Specialty Examination. The dissertation should be an original contribution to knowledge and demonstrate the ability to present the subject matter in a scholarly style. Upon completion of the dissertation the candidate is required to present the research results at an Atmospheric and Oceanic Science Department seminar and to defend the material to the satisfaction of a Final Examining Committee appointed by the Dean for Graduate Studies.

Full-time students are expected to complete the Qualifying Examination by the end of the second year of graduate study and be admitted to candidacy by the end of the third year. Students must be admitted to candidacy within five years after admission to the doctoral program and at least six months before the date on which the degree will be conferred. The student must complete the entire program for the degree, including the dissertation and final examination, during a four-year period after admission to candidacy.
A student seeking a Ph.D. degree will be assigned to a faculty advisor whose interests parallel those of the student. The academic advisor will establish and chair an advising committee which will oversee the student's degree program.

The course work requirement is thirty semester hours in 600-level or above AOSC Department courses. In addition, the student must take 12 credits of AOSC 899 (Doctoral Dissertation Research). It is anticipated that students may wish to take a number of the core courses in order to prepare for the Qualifying Examination.

In addition, there is a minor course requirement of an additional nine semester hours of ancillary courses taken beyond the bachelor's degree from other departments in a related scientific discipline, at least 6 of which must be at the 600-level or above. These credits need not be from the same department but must have a unified or coherent theme. Students may petition the Department for a waiver of a portion of these requirements based on credits earned at another institution at the graduate level.

A student seeking the Ph.D. degree in atmospheric and oceanic science must pass the Candidacy Examinations, which are divided into two parts - the Qualifying Examination and the Specialty Examination. During the Specialty Examination, the student must present a dissertation prospectus to the examination committee. Following successful defense of the prospectus, the student advances to candidacy. Ability to perform independent research must be shown by a written dissertation based on the proposal presented at the Specialty Examination. The dissertation should be an original contribution to knowledge and demonstrate the ability to present the subject matter in a scholarly style. Upon completion of the dissertation the candidate is required to present the research results at an Atmospheric and Oceanic Science Department seminar and to defend the material to the satisfaction of a Final Examining Committee appointed by the Dean for Graduate Studies.

Full-time students are expected to complete the Qualifying Examination by the end of the second year of graduate study and be admitted to candidacy by the end of the third year. Students must be admitted to candidacy within five years after admission to the doctoral program and at least six months before the date on which the degree will be conferred. The student must complete the entire program for the degree, including the dissertation and final examination, during a four-year period after admission to candidacy.

B. Proposed

The proposed requirements are below. The main changes are: (1) for M.S. students, 3 hours of AOSC 811 can be used to replace a 600-level course, but the total credit hours remain the same; (2) for Ph.D. students, 3 hours of AOSC 811 can be used to replace a 600-level course, and there are 3 more hours of AOSC 811 required. Examples under the new requirement:

Ph.D. Student #1: 27 hours of 600-level courses, 6 hours of AOSC811, and 12 hours of AOSC899
Ph.D. Student #2: 30 hours of 600-level courses, 3 hours of AOSC811, and 12 hours of AOSC899
M.S. Student #1: 24 hours of 600-level courses, 3 hours of AOSC811, 3 hours of AOSC798
M.S. Student #2: 27 hours of 600-level courses, 3 hours of AOSC811, none of AOSC798

Full text for the proposed requirements, with modified texts highlighted:

Master of Science (M.S.)
The Atmospheric and Oceanic Science Department offers a non-thesis program leading to the Master of Science Degree. The requirements include course work, a scholarly paper and presentation, and a comprehensive examination. This program provides fundamental trainings to prepare students for research and operational work in the atmospheric and oceanic sciences.

Each new student will be assigned to a faculty advisor whose interests parallel those of the student. The faculty advisor will assist in the development of the student's course program and will follow the student's progress thereafter. The student may select an alternate advisor at any time, although financial support is dependent upon the availability of funds.

The student must submit an M.S. degree course plan, and a tentative schedule for completion, by the end of the first
IV Transition to New Curriculum

The new requirement will apply to students entering on and after fall 2009.

APPENDIX: Sample Course Syllabus

AOSC 7/6
Atmosphere, Ocean, climate, and synoptic meteorology
Thursdays 3:15-4:30pm Room: CSS 2400 Credits: 1
Course web and seminar announcement and other information: http://www.atmos.umd.edu/~seminar

Course Description

This course, associated with the AOSC department seminar series, is a 1 credit course offered each fall and spring semester. The course covers a broad range of topics in the contemporary sciences of atmosphere, ocean, climate, and synoptic meteorology.

Expectations:
1. Students will attend each seminar and actively participate in the question and answer period.
2. A final paper is required. The paper should be a description of your understanding and your critique of 1-2 seminars that took place during the semester. The length of the paper should be at least 2 paragraph.
3. Discussions led by the instructor will be conducted approximately once every month before or after a seminar to review and critique the presentations.