Program Request
Environmental Science

Fiscal Unit/Academic Org
Graduate School Admin - D3000
Food, Agric & Environ Science
Food, Agric & Environ Science

Administering College/Academic Group
Converted with minimal changes to program goals and/or curricular requirements (e.g., sub-plan/specialization name changes, changes in electives and/or prerequisites, minimal changes in overall structure of program, minimal or no changes in program goals or content)

Co-administering College/Academic Group
Environmental Science

Semester Conversion Designation
ENVSCH-MS

Current Program/Plan Name
Master of Science

Program/Plan Code Abbreviation

Proposed Program/Plan Name

Current Degree Title

Credit Hour Explanation

<table>
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<tr>
<th>Program credit hour requirements</th>
<th>A) Number of credit hours in current program (Quarter credit hours)</th>
<th>B) Calculated result for 2/3rds of current (Semester credit hours)</th>
<th>C) Number of credit hours required for proposed program (Semester credit hours)</th>
<th>D) Change in credit hours</th>
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<td>Total minimum credit hours required for completion of program</td>
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<td>Maximum</td>
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<td>Required credit hours offered outside of the unit Minimum</td>
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<td>Maximum</td>
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<td>Maximum</td>
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Program Learning Goals

Note: these are required for all undergraduate degree programs and majors now, and will be required for all graduate and professional degree programs in 2012. Nonetheless, all programs are encouraged to complete these now.

Program Learning Goals

Assessment

Assessment plan includes student learning goals, how those goals are evaluated, and how the information collected is used to improve student learning. An assessment plan is required for undergraduate majors and degrees. Graduate and professional degree programs are encouraged to complete this now, but will not be required to do so until 2012.

Is this a degree program (undergraduate, graduate, or professional) or major proposal? Yes

Does the degree program or major have an assessment plan on file with the university Office of Academic Affairs? No

Program Specializations/Sub-Plans

If you do not specify a program specialization/sub-plan it will be assumed you are submitting this program for all program specializations/sub-plans.

Pre-Major

Does this Program have a Pre-Major? No
Attachments

* ESGP Semester Plan MS.pdf: MS degree Plan

(Program Rationale Statement: Owner: Al-Khour, Maureen Louise)

Comments

* this attachment also contains our list of required semester courses and advising sheet. (By Al-Khour, Maureen Louise on 10/10/2011 09:42 AM)

Workflow Information

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<th>Date/Time</th>
<th>Step</th>
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<td>Al-Khour, Maureen Louise</td>
<td>10/10/2011 09:43 AM</td>
<td>Submitted for Approval</td>
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<tr>
<td>Approved</td>
<td>Myers, Dena Elizabeth</td>
<td>10/17/2011 10:43 AM</td>
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<td>10/17/2011 10:43 AM</td>
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</table>
To: The Office of Academic Affairs

From: Richard Moore, Director

Date: October 3, 2011

Re: Environmental Science Graduate Program Semester Program Proposal

The Interdisciplinary Graduate Program (IGP) in Environmental Sciences currently consists of 78 faculty members with representatives from the Colleges of Food, Agriculture and Environmental Sciences, The College of Engineering, The College of Arts and Sciences and the College of Public Health.

ESGP currently offers the MS and the PhD degree in Environmental Science.

The student class of Autumn 2011 consists of 27 MS students and 35 PhD students. Funding for ESGP is based on the number of students advised by faculty in each college. These funds are administered by the lead Dean Dr. Bobby Moser in the College of Food, Agriculture and Environmental Sciences.

The members of the Graduate Studies Committee of The Environmental Science Graduate Program (ESGP) have reviewed their current academic program and we request a straight conversion of our current curriculum with the intention of creating specializations within the program after the semester conversion has taken place.

We find this to be in the best interest of students who have already accepted admission for Autumn 2011 as well as the current students finishing their programs.

The Environmental Science Graduate Program is a component of the university-wide interdisciplinary study of the Environmental Sciences that is currently taking place and we foresee many new opportunities to enrich our curriculum in the very near future.

Our faculty voted in a poll taken last year, and it was approved by our Graduate Studies Committee that ESGP students should have the opportunity to choose specializations. At the request of the Graduate School these specializations have not yet been formally submitted to the Council on Academic Affairs which also must approve our specialization proposal. The Council on Academic Affairs has indicated that it will no longer be entertaining new proposals until after the completion of its semester conversion work. We plan on submitting the package of specializations during the summer of 2012 based on selecting courses from the newly converted semester courses available throughout the university.
The only courses original to ESGP are:

ENVSCI 694 - Group Studies
ENVSCI 798 - Current Research Issues in Environmental Studies
ENVSCI 793 - Individual Studies in Environmental Science
ENVSCI 999 - Research in Environmental Science

ENVSCI 798 is a seminar course that meets once a week is is only one credit hour. It is group taught and has guest speakers. We also rotate the responsibility for teaching ENVSCI 798 from among our ESGP faculty. Attached to this memo is a list of the ESGP core courses which are all courses taught in other units. We will continue to monitor these courses for new course numbers. New courses will be added by vote of our Graduate Studies Committee.

Below are our current degree program description for the MS degree:

Current Description of the Master of Science Degree in ESGP
Students may follow either of two programs, thesis (Plan A) for 45 credit hours or non-thesis (Plan B) for 55 credit hours.

No later than the fifth week of the third quarter of enrollment in the Master's program, each student must submit an approved Plan of Study to the Graduate Studies Committee. The advisor and all members of the student's committee must sign the Plan of Study. ESGP offers considerable flexibility, enabling students, their advisors, and committee members to come up with a unique Plan of Study. Included in the required number of credit hours for the degree ESGP students must choose one core course from each of three areas: Biological Sciences, Physical Sciences, and Social Sciences from the core course list. This list is subject to change as courses change. Also students must have three quarters of ESGP Seminar (1 credit each quarter) to meet ESGP graduation requirements. Students are required to make a proposal presentation during the first year and an exit presentation at the Seminar the quarter before graduation is expected. More detailed information is available in the ESGP Handbook which is available on our web site. The above requirements are in addition to those requirements listed in The Graduate School Handbook. Students may schedule other graduate credit courses needed to fulfill the credit hour requirements of The Graduate School by consulting with their advisor. Any courses beyond the core courses are considered to be electives and must be listed on the Plan of Study Form for prior approval of The ESGP Graduate Studies Committee. All students are to take their research hours in the department of their advisor.

The non-thesis option provides an opportunity for students who are not primarily interested in research careers to pursue advanced study in environmental science. Students in the non-thesis option will write and in-depth research paper on a subject agreed upon by the student, advisor, and committee. The paper should be written in a style and format designated by a leading refereed journal in the student's field. The completed paper is to be evaluated by the advisor and committee to insure that it is rigorous and detailed analytical and scholarly work. Further the student must
demonstrate a thorough knowledge of the literature relevant to the topics. Copies of the completed paper must be turned into the ESGP office after the Master Examination is complete and the paper is approved by the committee.

**Proposed changes to this description:** The only changes are in the number of ESGP Seminars required. We propose changing from requiring 3 one credit quarter courses to 2 semester length seminars of one credit for both MS and PhD students. Required core courses will remain the same. The seminar course number will be 7798.

The MS degree will require 30 graduate semester credit hours. The MS non-thesis option will require 37.

**Changes to ESGP Seminar**

Currently the ESGP Seminar is held Autumn, Winter and Spring Quarters only and is not offered summer quarter.

Change: We will be requiring only 2 semester seminars for each degree (MS and PhD) for a total of 2 semester hours (instead of the current 3 quarter hours). This would not create a hardship for the student as 2 semester seminars would be approximately the same amount of time as 3 quarter seminars.

For example year 1 of semesters (Autumn 2012) seminar class would meet every Friday from August 24 until November 30 which is 15 sessions. During these session dates students will be required to schedule their proposal presentation and exit presentations in addition to dates held for faculty presentations. That is currently how the seminars are designed in the quarter system. The only change would be the scheduling of presentations at each meeting date. Because there will be less opportunity to schedule at the last minute, students will be required, on the new Plan of Study Form, to list the semester they require for their proposal presentations in advance and a date will be assigned.

**How will we communicate these changes to our students?**

Enclosed with this memo is our new Plan of Study Form. This is available to our students on the ESGP web site. After discussions with their advisors all ESGP students enrolled will be contacted to update their current Plan of Study or to create a new one and required to submit those forms to the Graduate Studies Committee of ESGP for review by Spring Quarter 2012. The Graduate Coordinator in the ESGP office will meet individually with students who have difficulty or questions.

Enclosed with this memo is also a list of our current core courses and their semester equivalents. There are currently sufficient offerings to allow our student to maintain their progress towards their degree. We feel confident that we will have sufficient courses available for our students and new ones will be added to this list.
MS students are required to take one course from each of these three areas of study: Biological Sciences, Physical Sciences and Social Sciences.

Under the semester system they will also be required to take one semester course from each category. Currently we do not impose a credit hour requirement on the core courses for the MS degree and will continue that policy into the semester system.

This change to semesters will slightly increase the number of hours students will spend in their core courses and will decrease the time spent in elective courses. We feel this will actually be a benefit to our students and allow them to study these three subject areas in more depth.

To allow them more choice we will be adding new courses to the core course list. Many of the new courses that will be added will allow student to specialize in one key area of environmental science and we will begin to build our specialization curriculum.

To this document we include:
A list of our core courses being taught under semesters
Our Plan of Study form to be used by students.

ESGP Core Courses – Semester Planning

M.S. students are required to take one course from each focus area.

Please note: student who plan to get their M.S. degree in Environmental Science, then continue on to a PhD, will have to take a total of three courses from each focus area. In other words, the courses taken for the Masters cannot be double counted. (ESGP Handbook, Appendix I)

CORE COURSES IN BIOLOGICAL SCIENCE:

Environment and Natural Resources
   ENR 5250.01, Wetland Ecology Restoration, 3 semester hours
   ENR 5250.02, Wetland Field Laboratory, 1 semester hour
   ENR 7333, Successional Dynamics of Forests, 3 semester hours
   ENR 5560, Rehabilitation/Restoration of Ecosystems, 2 semester hours
   ENR 5225, Ecosystems Modeling, 3 semester hours
   ENR 5263, Biology of Soil Ecosystems, 3 semester hours
   ENR 6610, Soil & Environmental Biochemistry, 2 semester hours
   ENR 5220, Ecosystems of the World: Temperate, Boreal and High Latitude Ecosystems, 3 semester hours

Public Health
   PUBH EHS 6320, Global Health & Enviro Microbiology, 3 semester hours
   PUBH EHS 7360, Water Contamination: Sources and Health Impact, 3 semester hours

Evolution, Ecology & Organismal Biology
   EEOB 5420, Aquatic Ecosystems – Ecology of Inland Waters 1.5 semester hours
   EEOB 5470, Community and Ecosystem Ecology, 3 semester hours
EEOB 4410, Conservation Biology, 3 semester hours
EEOB 6210, Ecotoxicology, 2-4 semester hrs.

Microbiology
MICRO 5150, Microbial Ecology, 3 semester hours
MICRO 5155, Environmental Microbiology, 3 semester hours

Horticulture and Crop Science
HCS 5602, The Ecology of Agriculture, 3 semester hours

CORE COURSES IN PHYSICAL SCIENCES AND ENGINEERING

Environment and Natural Resources
ENR 5222, Ecological Engineering and Ecosystems Restoration, 3 semester hours
ENR 5282, Environment Fate and Impact of Contaminants in Soil and Water, 3 semester hours
ENR 5261, Environmental Soil Physics, 3 semester hours
ENR 5262, Soil Chemical Process & Environmental Quality, 3 semester hours
ENR 5260, Soil Landscapes: Morphology, Genesis and Classification, 3 semester hours

Food, Agriculture & Biological Engineering
FABENG 5550, Design of Sustainable Waste Management Systems, 3 semester hours
FABENG 5320, Agroecosystems, 3 semester hours

Geography
GEOG 5900 Climatology, 3 semester hours

Earth Science
EARTHSCI 5651, Hydrogeology, 4 semester hours
EARTHSCI 5621, Introduction to Geochemistry, 3 semester hours
EARTHSCI 5718, Aquatic Geochemistry, 3 semester hours

Environmental Engineering
ENE 2100, Analytical Methods in Environmental Engineering, 3 semester hours
ENE 5180, Ecological Engineering and Science, 3 semester hours
ENE 5200, Principles of Risk Assessment, 3 semester hours

Chemistry
CHEM 6550, Atmospheric Chemistry, 1.5 semester hours

CORE COURSES IN SOCIAL SCIENCES AND POLICY

Environment and Natural Resources
ENR 5310, Environmental and Natural Resources Economics, 3 semester hours
ENR 7520, Environmental Science and Law, 3 semester hours
ENR 6451, Water Law, 3 semester hours
ENR 7500, Resolving Social Conflicts, 3 semester hours
ENR 8350, Ecosystems Management Policy, 3 semester hours
ENR 5325, Public Forest & Lands Policy, 3 semester hours
RURLSOC 7560, Environmental Sociology, 3 semester hours
Agricultural, Environmental and Developmental Economics
AEDECON 6220, Environmental and Resource Economics
AEDECON 6300/ENR 5310, Environmental and Natural Resource Economics, 3 semester hours
AEDECON 5330, Benefit-Cost Analysis, 3 semester hours

Public Affairs
PUBAFRS 6000, Public Policy Formulation and Administration, 4 semester hours
PUBAFRS 6080, Public Affairs Program Evaluation, 4 semester hours

City and Regional Planning
CRPLAN 6300, Law and Planning I: Land Use, 3 semester hours
CRPLAN 6310, Law and Planning II: Environment and Society, 3 semester hours
CRPLAN 6410, Planning for Sustainable Development, 3 semester hours
CRPLAN 7400, Site Planning and Development, 3 semester hours
CRPLAN 7500, Plan Making and Analysis Techniques, 3 semester hours
CRPLAN 7270, Environmental and Energy Modeling, 3 semester hours
## ESGP Plan of Study

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<th>Sem Hrs</th>
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MS = 30 Semester Hours / MS Plan B = 37 Semester Hours / PhD = 80 Semester Hours (Semester Hours = 2/3 of quarter hours)

- [x] Advisor's Signature
  Please Print Name Here

- [x] Student's Signature

- [x] Advisory Committee Member's Signature
  Please Print Name Here

- [x] Advisory Committee Member's Signature
  Please Print Name Here

- [x] Advisory Committee Member's Signature
  Please Print Name Here

- [x] Advisory Committee Member's Signature
  Please Print Name Here