SPECIAL REPORT
of the
ACADEMIC MATTERS COUNCIL
concerning a
REVISION OF THE
ENVIRONMENTAL AND NATURAL RESOURCE ECONOMICS
CONCENTRATION IN THE RESOURCE ECONOMICS MAJOR

Presented at the
743rd Regular Meeting of the Faculty Senate
December 11, 2014

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Background and Recommendation

This proposal is a revision to the Environmental and Natural Resource Economics Concentration in the Resource Economics major. The revision affects which courses are required and which may be used as electives. The overall number of credits required for the concentration in the major is unchanged.

Because many of the courses in the Environmental and Resource Economics concentration are housed in the College of Natural Sciences, the Academic Matters Council Program Subcommittee requested the department to consult with CNS to ensure course availability for majors. Following this consultation, minor revisions were made.

This revision was submitted as Proposal #1281 on the UMass Course and Curriculum Management System.

The Program Subcommittee recommended the approval of this proposal and the Academic Matters Council unanimously voted in favor of it on September 17, 2014.

MOVED: That the Faculty Senate approve the Revision of the Environmental and Natural Resource Economics Concentration in the Resource Economics Major, as presented in Sen. Doc. No. 15-016.
This proposal is an update to the concentration for Environmental and Resource Economics. The concentration curriculum is made up of 10 courses; 5 are required and 5 are selected from a list. One of the required courses is a policy course for which there were two options: ENVIRSCI 213 or POLISCI 382. We propose to add two further options for this required course: POLISCI 383 Energy Policy and NRC 409 Natural Resource Policy and Administration. In addition, the list of selected courses has been updated to remove several courses that are no longer taught or are less relevant and to add relevant courses that students may choose. All changes are shown in the attached file.

In spring 2013, the Undergraduate Studies Committee of the Department of Resource Economics reviewed the entire Resource Economics major curriculum. Working groups were formed in each of the three concentration areas that were led by a Committee Member and included all the faculty working in that area. These working groups proposed updates to the curriculum that were reviewed by the Undergraduate Studies Committee. The changes submitted here were approved by unanimous vote of the entire faculty in fall 2013.

The purpose is to update the curriculum (see below). This should start Fall 2014 (the box above for proposed start date does not save this information).

The curriculum review found that there were two additional courses that were excellent fits for the required policy course and should be added as options. The review also found that the list of selected courses needed to be updated to match current offerings.

This proposal does not require additional resources. The proposal updates course options for classes taken outside the department. The small number of majors in this concentration spread across many classes will not add new capacity needs. We do not expect this change to affect enrollments in the Environmental and Natural Resource Economics Concentration.
Concentration in Environmental and Natural Resource Economics—Proposed Changes Highlighted

NOTE: Most Resource Economics courses are taught either fall or spring AND all upper level Resource Economics courses carry prerequisites (sometimes several!). You must prepare a plan of study for all semesters through graduation to ensure that you can meet departmental requirements.

1. Students in this option take the following five courses plus five courses selected from the list in Part 2, in addition to the 12 departmental core courses.

   - RES-ECON 262 Environmental Economics
   - RES-ECON 263 Natural Resource Economics
   - RES-ECON 471 Benefit-Cost Analysis of Natural Resource Programs
   - RES-ECON 472 Advanced Topics in Resource and Environmental Economics
   - One Policy course ENVIRSCI 213 Intro to Environmental Policy, POLISCI 382 Environmental Policy, POLISCI 383 Energy Policy, or NRC 409 Natural Resource Policy & Administration

2. Select five courses from the following course list. The following provides some suggestions although other courses may be chosen with approval of the advisor. Students who wish to organize their choices to complete a career emphasis should consult with their advisor to identify the appropriate courses. NOTE: Prerequisites may be required for some of the courses listed. (Courses with a * cannot be used as both a Policy course and selected course.)

   **COURSE ADDITIONS**

   **Physical and Biological Science**
   - BIOLOGY 421 - Plant Ecology
   - ENVIRSCI 214 - Ecosystems, Biodiver. & Global Change
   - Other 300 – 500 level Environmental Science Courses
   - GEO-SCI 494LI - Living on Earth: Real-world Issues
   - GEO-SCI 497E - Geography, Policy and Environment
   - GEO-SCI 497PA - Protected Areas/Indigenous People
   - PLSOILIN 342 - Pesticides, the Envir. & Public Policy
   - PUBHLTH 562 - Air Quality Assessment
   - STOCKSCH 350 - Sustainable Soil and Crop Management
   - STOCKSCH 375 – Soil and Water Conservation

   **Natural Resource Conservation**
   - NRC 260 - Fish Conservation and Management
   - NRC 261 - Wildlife Conservation
   - NRC 297E – Forest Ecology and Conservation
   - NRC 540 - Forest Resources Management
   - NRC 564 - Wildlife Habitat Management
   - NRC 571 - Fisheries Science and Management
   - NRC 575 - Case Studies
   - NRC 577 - Ecosystem Modeling and Simulation
   - NRC 586 - Natural Resource Inventory of Local Lands
   - NRC 590GC - Global Environmental Conservation
   - NRC 590TP - Adapting to Climate Change: Theories, Policies and Action

   - HISTORY 383 - American Environmental History
   - NRC 382 - Human Dimensions of Natural Resource Mgmt.
   - NRC 409 - Natural Resources Policy and Administration*
   - POLISCI 181 - Controversies in Public Policy
   - POLISCI 253 - International Envir. Politics & Policy
   - POLISCI 280 - Public Policy
   - POLISCI 382 - Environmental Policy*
   - POLISCI 383 – Energy Policy*
   - REGIONPL 553 - Resource Policy and Planning
   - REGIONPL 558 - Issues in Environmental Management
   - REGIONPL 575 - Environmental Law and Res. Mgmt.
   - RES-ECON 312 – Introductory Econometrics
   - RES-ECON 428 - Managerial Econ. in Food & Res. Indus.
   - RES-ECON 452 - Industrial Org. in Resource Econ.
   - RES-ECON 453 - Public Policy in Private Markets
   - RES-ECON 462 - Experimental Economics

   **Public Policy, Business and Economics**
   - ECON 309 - Game Theory
   - ECON 313 - Public Finance
   - ECON 366 - Economic Development
   - ENVIRDES 553 - Resource Policy and Planning
   - ENVIRDES 577 - Urban Policies
   - ENVIRDES 591B - Sustainable Cities
   - ENVIRDES 213 - Introduction to Environmental Policy
## COURSE DELETIONS

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
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<tbody>
<tr>
<td>BIOLOGY 524</td>
<td>Coastal Plant Ecology</td>
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<tr>
<td>ECON 308</td>
<td>Political Economy of the Environment</td>
</tr>
<tr>
<td>ENVDES 547</td>
<td>Landscape Pattern &amp; Process</td>
</tr>
<tr>
<td>ENVIRSCI 315</td>
<td>Principals of Environmental Toxicology and Chemistry</td>
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<tr>
<td>GEO-SCI 285</td>
<td>Environmental Geology</td>
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<tr>
<td>GEO-SCI 362</td>
<td>Conservation Geography</td>
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<tr>
<td>GEO-SCI 370</td>
<td>Urban Geography</td>
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<tr>
<td>GEO-SCI 485</td>
<td>Applied Environmental Geology</td>
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<tr>
<td>NRC 549</td>
<td>Ecosystem Management</td>
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<tr>
<td>PUBHLTH 567</td>
<td>Environmental Compliance Regulations</td>
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