Eastern Illinois University  
New Course Proposal  
BIO 4840, Resource Management and Environmental Assessment

This format is to be used for all courses submitted to the Council on Academic Affairs and/or the Council on Graduate Studies.

Gray boxes (except check boxes) will expand as you type in them.

Please check one:  X New course  □ Revised course

PART I: CATALOG DESCRIPTION

1. Course prefix and number, such as ART 1000: BIO 4840
2. Title (may not exceed 30 characters, including spaces): Environ Assess
3. Long title, if any: Resource Management and Environmental Assessment
4. Class hours per week, lab hours per week, and credit [e.g., (3-0-3)]:2-3-3
5. Term(s) to be offered:  Fall  X  Spring  Summer  On demand
6. Initial term of offering:  Fall  X  Spring  Summer  Year 2007
7. Course description (not to exceed four lines):
   This course will explore concepts in natural resource management including data acquisition and how environmental regulations are used in integrated ecological assessments at the federal and state level.

8. Registration restrictions:
   a. Identify any equivalent courses (e.g., cross-listed course, non-honors version of an honors course). None
   b. Prerequisite(s), including required test scores, courses, grades in courses, and technical skills. Indicate whether any prerequisite course(s) MAY be taken concurrently with the proposed/revised course.
      Permission of the instructor
   c. Who can waive the prerequisite(s)?
      □ No one  X Chair  X Instructor  □ Advisor  □ Other (Please specify)
   d. Co-requisites (course(s) which MUST be taken concurrently with this one):  None
   e. Repeat status:  X Course may not be repeated.
      □ Course may be repeated to a maximum of  hours or  times.
   f. Degree, college, major(s), level, or class to which registration in the course is restricted, if any: None
   g. Degree, college, major(s), level, or class to be excluded from the course, if any: None

9. Special course attributes [cultural diversity, general education (indicate component), honors, remedial, writing centered or writing intensive]  None
10. Grading methods (check all that apply):  X Standard letter  □ C/NC  □ Audit  □ ABC/NC (“Standard letter”—i.e., ABCDF--is assumed to be the default grading method unless the course description indicates otherwise.)
11. Instructional delivery method: lecture  lab combined (This is a drop-down menu.)
Eastern Illinois University
New Course Proposal
BIO 4840 – Resource Management and Environmental Assessment

1. Catalog description
   a) BIO 4840
   b) Resource Management and Environmental Assessment
   c) (2-3-3)
   d) S
   e) Environ Assess
   f) This course will explore the concepts in natural resource management including data acquisition and how environmental regulations are used in integrated ecological assessments at the federal and state level.
   g) Prerequisite: BIO 3800 or permission of the instructor.
   h) Spring 2007

2. Student Learning Objectives and Evaluation
   a) Students will:
      1. identify the principles of natural resource management and how they relate to environmental regulations;
      2. identify the frameworks of ecological assessments;
      3. access world-wide-web sites that serve existing data sets relevant to ecological assessments (e.g. satellite imagery; contaminant data, real-time monitoring stations);
      4. apply principles of natural resource management to develop an environmental assessment within the regulatory framework and prepare final written and oral reports similar to those expected in government or private industry, thus gaining experience in both verbal and written communication;
   b) Assessment will be based on a midterm and final exam (30 %); class participation (10 %); laboratory exercises (40%), written report and oral presentation (20%)

<table>
<thead>
<tr>
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<th>(30%) Midterm exam and final exam</th>
<th>(10%) Class participation</th>
<th>(40%) Laboratory exercises (weekly)</th>
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c) Not technology delivered
d) Requirements for students enrolling for graduate credit:

1. Develop more advanced data acquisition skills. Specifically, graduate students will integrate geospatial data with other data formats (e.g. EPA IRIS toxicological data).
2. While undergraduates will primarily be working with a partner or in a group for laboratory assignments and projects, graduate students will work independently. Additionally, the expectation for more advanced communication skills such as project presentations will be put upon graduate students and will be reflected in the grading of their assignments.
3. Students enrolling for graduate credit will have additional essay questions on the term and final examinations.

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e) Writing active
3. Outline of the Course
   a. Units of time: 2 fifty-minute lectures and 1 three-hour laboratory for 15 weeks.

   Week 1
   - Introduction to Environmental Assessments (EA).
   - Environmental Impact Assessment and Other Federal Regulations.

   Week 2
   - Biological Principles Associated with EA

   Week 3
   - Biological Principles Associated with EA
   - Ecosystem Characterization: Water

   Week 4
   - Ecosystem Characterization: Land
   - Defining and Describing Datasets

   Week 5
   - Environmental Regulations: Land, Toxic & Hazardous Materials

   Week 6
   - Information Management

   Week 7
   - GIS & Remote Sensing: Basic Techniques for EA

   Week 8
   - Mapping Biological Phenomena

   Week 9
   - Applications of Analytical EA Methods

   Week 10
   - Characterizing Human Imprint on Landscapes for EA

   Week 11
   - Mapping Patterns of Human Use and Potential Resource Conflicts

   Week 12
   - Case Studies: Southern Appalachia, Northern Forest Lands
   - Great Lake Ecological Assessment, Upper Mississippi River Adaptive Environmental Assessment.

   Week 13
   - Case Studies: Interior Columbia Basin Ecosystem Management Project

   Week 14
   - Final project presentations

   Week 15
   - Final project presentations

Finals week: Final exam

b) Not technology delivered
4. Rationale
   a) Purpose and need: Understanding the framework of environmental regulations is necessary for biologists to
evaluate anthropogenic impact to ecosystems. They must also learn the principles of resource management
as it relates to environmental systems. As such, biologists must learn how to acquire long-term datasets and
judge their validity in order to perform Ecological Assessments. This course will provide the foundation for
students to acquire those skills, thereby preparing students in the Biological Sciences EVB option to be
competitive for careers with state and federal agencies (such as IDNR and USFWS) as well as private
consulting firms.
   b) Justification of the course level and prerequisites: This course is intended for upper-level undergraduate and
graduate students. Ecology is recommended so students have the background in ecological concepts needed
to understand examples utilized in class. Additionally, this course will introduce students to the foundations
of natural resource management. Therefore, the course level is intended for upper-level undergraduate and
graduate students who understand the need for a scientific approach to the regulatory framework of
environmental assessment.
   c) This course does not significantly overlap with any existing course within Biological Sciences or any other
program.
   d) Program impact:
      1. Elective for undergraduate students in the Biological Sciences.
      2. Elective for M.S. graduate students in Biological Sciences

5. Implementation
   a) The course will be taught by Dr. Karen F. Gaines or any qualified Biological Sciences faculty member.
   b) $30 laboratory software fee pending approval by the President’s Council
   c) Texts:
         New York
         Boca Raton.

6. A community college course will not be judged equivalent to this course

7. Date approved by the Departmental Curriculum Committee: April 17, 2006

8. Date approved by CSCCC: April 28, 2006

9. Date approved by CGS: September 5, 2006

10. Date approved by CAA: August 31, 2006

*In writing-active courses, frequent, brief writing activities and assignments are required. Such activities -- some of which are to be
graded -- might include five-minute in-class writing assignments, journal keeping, lab reports, essay examinations, short papers, longer
papers, or a variety of other writing-to-learn activities of the instructor's invention. Writing assignments and activities in writing-active
courses are designed primarily to assist students in mastering course content, secondarily to strengthen students' writing skills. In
writing-intensive courses, several writing assignments and writing activities are required. These assignments and activities, which are to
be spread over the course of the semester, serve the dual purpose of strengthening writing skills and deepening understanding of course
content. At least one writing assignment is to be revised by the student after it has been read and commented on by the instructor. In
writing-intensive courses, students’ writing should constitute no less than 35% of the final course grade. In writing-centered courses
(English 1001G, English 1002G, and their honors equivalents), students learn the principles and the process of writing in all of its stages,
from inception to completion. The quality of students' writing is the principal determinant of the course grade. The minimum writing
requirement is 20 pages (5,000 words).