Introduction to Applied Ecology (IAE) - Fall 2010
S332 (22239) / E332 (18733) / E532 (19930)
Lecture: MW 9:30-10:45am, SPEA 277

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Course Objectives
Applied ecology is the application of ecological principles to study and evaluate the effects and consequences of human activities on communities, ecosystems, landscapes, and the biosphere. This course, as an introduction to applied ecology, will require a review of general ecology, including interactions among organisms and between organisms and their physical (abiotic) environment. Further, we will consider human dimensions of ecology, especially the ecological effects of human activities.

This course is specifically for those without an extensive science background. I specifically expect that you will have no background in ecology, and relatively little background in the sciences. If this is not the case, please arrange to transfer into E527 Applied Ecology or to waive that course if your experience extends beyond its syllabus.

My objective is to provide a solid foundation for those of you interested in more ecology-related coursework and to allow those of you pursuing management and policy to read relevant literature insightfully, facilitating application of ecological concepts to your future endeavors. As an introductory course, the course emphasizes breadth instead of depth, but as you develop specific interests, you will find opportunities for depth in later courses or on your own.

Course Format
Textbook and readings
  - There is a biology lab manual that comes with the text if you purchase it new through the bookstore; we will not use the lab manual. I encourage you to look online for a used text to save some money and re-use! The textbook-only ISBN is: 0321042905
- Readings posted on Oncourse under “Resources” (see me if you are unfamiliar with Oncourse)

In Class
We will be moving briskly but with care through the material. Scheduled quizzes every two weeks may help you to keep up with the work; although, I reserve the right to remove quizzes from the schedule if they appear unnecessary. Lots of our time will be spent in lecture; some in discussion. Time spent in
discussion will leave less time for lecture, and I will be putting some of the burden for the more straightforward class material on you. I expect to be very flexible with our schedule, and if we encounter difficulties in not covering everything in lecture, we’ll make adjustments to the schedule. Lectures and quizzes will start at the beginning of the class period, so be on time to class. **In class, please turn off cell phones; no texting will be tolerated and you will receive an unexcused absence for violation of this rule. Laptops must be turned off in class as well.**

**Attendance Policy:** You cannot succeed in this course unless you attend class regularly. I will allow you two absences requiring no excuse. However, you are still responsible for turning in any assignment due those days and cannot make-up any quiz or exam given on those days—in other words, don’t take your “free day” on a quiz/exam day. If you must miss a class beyond those two absences allowed or on an assignment/exam day, you must notify me prior to the class and provide a reasonable explanation (e.g., illness, funeral, conference, etc.) and related documentation regarding the reason for your absence in order to be “excused” without a grade penalty. If the situation was clearly out of your control, you may speak with me immediately after an absence to provide explanation. **Unexcused absences lower your final grade (off the top) by 2% each.**

**Academic Integrity**
No form of academic dishonesty will be tolerated. This course requires individual integrity and professionalism from all students. If academic dishonesty is proven, you will receive a grade of zero for the work; repeat offense is grounds for failure in the course. A website defining plagiarism with examples of acceptable and unacceptable ways to give credit for the ideas and words of others will be reviewed in class. You are responsible for understanding plagiarism and avoiding it at all times.

Main web site: [http://www.indiana.edu/~istd/](http://www.indiana.edu/~istd/)
Class web exercise: [https://www.indiana.edu/~istd/practice.html](https://www.indiana.edu/~istd/practice.html)

**Assignments and Examinations**
In addition to biweekly quizzes, you will have two midterms, and a final. You will write one short research paper (more info to come), and will respond to questions regarding journal article readings. A plagiarism and literature search assignment will help you write your research paper (more info to come).

All journal article readings and related questions will be located on Oncourse under “Resources” > “Readings and reading questions.” All students **read all readings** because everyone will be responsible for this information on exams. Undergraduate students answer reading questions ONLY for general readings, Graduate and Honors students answer reading questions for general readings AND “Honors/Grad (H/G) Readings.” H/G reading questions will be clearly labeled on Oncourse. Always bring 2 copies of reading responses to class (one to turn in, and one to consult during discussion).

In addition to extra reading questions, Honors and Grad students will be responsible for additional questions on exams and will individually lead classroom discussion for one journal article reading (for participation points). Undergrads will be graded on general in-class participation, particularly during reading discussion led by Honors/Grad students.

The final examination for this course will be a take-home due Wednesday, 15 Dec, by 5 pm, by email.

**Late assignments:** If you know you will have to turn in an assignment late, please communicate with me in some way BEFORE the due date. I am very willing to accommodate emergencies. Please bear in mind that your extracurricular activities are your responsibility - if you decide to schedule an interview during class time, you are still responsible for handing in assignments on time. **Late assignments received without explanation will be downgraded 10% per day late.**
Makeup Examinations/Quizzes
Given that an absence on a quiz or exam day is excused and I am given advanced notice (if possible), I am willing to provide an exam or quiz early or later than scheduled. I generally will not provide exams or quizzes after the scheduled date unless I have been notified ahead of time, or unless the situation was clearly out of your control. **An unexcused absence on a quiz/exam day means a 0% for that assignment.**

Grading Formula
Your grades will be weighted in the following manner:

<table>
<thead>
<tr>
<th>Percentage</th>
<th>Component Description</th>
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<tbody>
<tr>
<td>05%</td>
<td>Lit search, plagiarism assignments</td>
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<tr>
<td>10%</td>
<td>Undergrad participation / Grad and Honors participation (includes G/H-lead readings)</td>
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<tr>
<td>10%</td>
<td>Reading question responses</td>
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<tr>
<td>15%</td>
<td>Quizzes (drop lowest grade)</td>
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<tr>
<td>15%</td>
<td>Final writing assignment (due 6 Dec)</td>
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<tr>
<td>25%</td>
<td>2 Midterms (12.5% each)</td>
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<tr>
<td>20%</td>
<td>Final</td>
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<tr>
<td>100%</td>
<td>Total</td>
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Your final letter grade is based on the total number of points at the end of the semester. Grades will be assigned according to the standard SPEA grading scale:

<table>
<thead>
<tr>
<th>Letter Grade</th>
<th>Percentage</th>
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<tbody>
<tr>
<td>A</td>
<td>92-100%</td>
</tr>
<tr>
<td>A-</td>
<td>90-91%</td>
</tr>
<tr>
<td>B+</td>
<td>88-89%</td>
</tr>
<tr>
<td>B</td>
<td>82-87%</td>
</tr>
<tr>
<td>B-</td>
<td>80-81%</td>
</tr>
<tr>
<td>C+</td>
<td>78-79%</td>
</tr>
<tr>
<td>C</td>
<td>72-77%</td>
</tr>
<tr>
<td>C-</td>
<td>70-71%</td>
</tr>
<tr>
<td>D+</td>
<td>68-69%</td>
</tr>
<tr>
<td>D</td>
<td>62-67%</td>
</tr>
<tr>
<td>D-</td>
<td>60-61%</td>
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<tr>
<td>F</td>
<td>&lt; 60%</td>
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Outdoors
We will be outdoors on campus during at least one class period; I will warn you about such trip(s) and appropriate dress, etc. ahead of time. In addition, we will take a **field trip to Griffy Woods Research and Teaching Preserve on October 23 (Saturday afternoon)**; if a student has a legitimate excuse for missing this field trip (*e.g.*, illness, funeral, conference, etc.), he/she may make-up the trip on his/her own (see instructor for arrangements) and compose a 3-page paper regarding ecological observations in the field. Otherwise, missing this trip is an unexcused absence (-2% of final grade—off the top).

Technical Writing
If you are uncomfortable with technical writing, see [http://www.indiana.edu/~wts/](http://www.indiana.edu/~wts/) or visit Ballantine 206 and talk with the Writing Tutorial Service (WTS). To schedule a tutoring session, call **855-6738**. I reserve the right to require students to consult WTS in order to receive a grade on an assignment if writing is inadequate. Students who are unsure of their technical writing skills may find the following book useful: *Academic Writing for Graduate Students* by Swales and Feak. The call number is PE 1404 .S93 1994. It is written for students who don’t speak English as a first language and takes particular care to explain writing concepts.

Disabilities
Every effort will be made to accommodate individuals with disabilities documented by the office of Disabilities Services ([http://www2.dsa.indiana.edu/dss/](http://www2.dsa.indiana.edu/dss/)). However, documentation must be presented to the instructor within the first THREE weeks of class time. Please talk to me about any issues regarding disabilities as soon as possible.
**Course Schedule**
Lecture pace will be flexible, so lecture dates are approximate. Quiz and exam dates are fixed.

**Introduction**
Chapter 1  Aug 30

**The Physical Environment and How to Survive In It**
- Climate  Chapter 2  Sep 1
- Physical Environment  Chapter 3 reading 1  Sep 6*
- Intro to Adaptation, Niches, Communities  Chapter 5,14,22  Sep 8, 13
- Plant Adaptations to Environment  Chapter 7 reading 1  Sep 13, 15*
- Animal Adaptations to Environment  Chapter 8  Sep 15, 20*
- Soils  Chapter 4  Sep 20, 22*

Campus walk (timing adjusted for weather)  Sep 27

**First midterm** --------------------------------------------  Sep 29

**Ecosystem Processes**
- Decomposition  Chapter 9  Oct 4, 6
- Ecosystem Productivity  Chapter 24  Oct 6, 11*
- Nutrient Cycles  Chapter 25,26  Oct 13,18*
- Succession  Chapter 21  Oct 20
- *FIELD TRIP TO GRIFFY WOODS*  Oct 23 (SAT. PM)
- Landscape Disturbance  Chapter 23  Oct 25, 27*, Nov 1

**Second midterm** --------------------------------------------  3 Nov
(Choose final paper topic by 3 Nov)

**Survey of Terrestrial and Freshwater Ecosystems**
- Biogeography of Ecosystems  Chapter 27  Nov 8 (lit/plag. due)
- Unforested Terrestrial Ecosystems  Chapter 28  Nov 8, 10*
- Forests  Chapter 29  Nov 15*
- Freshwater and Wetland Ecosystems  Chapter 30  Nov 17,22*, 29

**Population Ecology**
- Properties of Populations  Chapter 10  Nov 29
- Population Growth and Regulation  Chapter 11  Dec 1*
- Intraspecific Competition  Chapter 12  Dec 6
- Human Impacts on Populations  Chapter 18  Dec 8
- Life History Patterns  Chapter 13  Dec 8

**Quiz and Midterm Exam Dates - bold above:**
Sep 8, Sep 22, Sep 29, Oct 13, Oct 27, Nov 3, Nov 17

*Reading Question Response Dates – starred above:
Sep 6, Sep 15, Sep 20, Sep 22, Oct 11 (H/G), Oct 18, Oct 27, Nov 10 (H/G), Nov 15, Nov 22, Dec 1

**Final paper due 6 Dec.**
**Final exam - TAKE HOME final exam due 15 Dec (Wednesday) by 5 pm, by email.**
  There will be no exam during the scheduled final exam slot for this class.
**Readings (on Oncourse)**

I reserve the right to make adjustments to readings (change an article listed here, change a due date, remove a reading, etc.); in any case, you will be notified of any changes and I will post readings at least one week in advance of the reading question due date.

**General Readings for all students – all prepare answers to readings questions**

*reading dates may be adjusted according to our pace as we go along*


- - - - First midterm


- - - - Second midterm


Honors/grad readings – all read, honors & grad students prepare answers
On exams, non-honors undergrads will be responsible for major points only.


- - - - First midterm


- - - - Second midterm


Important Dates
6 Sep – Reading 1
8 Sep – Quiz
15 Sep – Honors/Grad reading 1
20 Sep – Reading 2
22 Sep – Quiz, reading 3, HG reading 2
29 Sep – Midterm
11 Oct – HG reading 3
13 Oct – Quiz
18 Oct – Readings 4, 5
27 Oct – Quiz, reading 6
3 Nov – Midterm
8 Nov - Lit search and technical writing assignments due.
10 Nov – HG reading 4
15 Nov – Reading 7
17 Nov – Quiz
22 Nov – Readings 8, 9
1 Dec – Reading 10, HG reading 5
6 Dec – Paper due
15 Dec – Take-home final exam due by 5 pm, by email