

# Principles of Applied Ecology

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LA 441/541 • 4 Credits

Fall 2006 • W/F 9:00-11:50 • 231 Lawrence Hall

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Prerequisites: Undergrad: 1 course in ecology or biogeography. Grad: 1 course in natural sciences. See [http://darkwing.uoregon.edu/~bartj/pae/PAE\\_prereq.html](http://darkwing.uoregon.edu/~bartj/pae/PAE_prereq.html) for details.

*Non-majors should contact Chad Bush at 346-3634 in the Landscape Architecture Office*

## Course Objective:

By the end of the course, the student should be able to apply ecological understanding toward landscape design, planning and management interventions at, and across, a range of spatial scales and land-use contexts using concepts and techniques developed in class.

## Overview:

The primary goal of this course is to develop skills in the application of ecological principles to spatially based landscape design, planning and management. To this end, we will develop an ecological framework for landscape design, planning and management that draws from both ecology and design to integrate human needs with those of other species. Over the course of the quarter, we will:

- Draw from selected subdisciplines of ecology to explore different ways of understanding landscapes: as communities, as pattern and process, as living systems, and as spatial and temporal hierarchies
- Learn key ecological concepts and apply them to design, planning and management problems
- Consider how the interactions of landscape structure and function create dynamic ecosystems that change over time, and explore how to incorporate ecological processes in their management
- Apply an understanding of the life history needs of native plants and animals toward design, planning and management within a multi-species framework
- Develop a toolbox of concepts and techniques that can be applied across a range of spatial and temporal scales and a variety of land uses, from residential properties to watersheds, and from urban cores to nature reserves
- Build a working knowledge of how to apply ecological theory and methodologies to spatially-based problem-solving by reading and interpreting the literature, exploring scientific approaches to answering questions, examining case studies, and applying ecological approaches

## Course Mechanics:

The course will meet twice per week. The first two periods (9:00-10:50) will focus on the presentation and discussion of class materials. The final period (11:00-11:50) will serve as a lab, and may include instruction, class exercises or time for teams to work on class projects. Classes will encompass a variety of learning formats from lectures to guided in-class exercises, discussions of ecological literature, and outdoor field exercises. ***Students are required to participate in a full-day field trip on Saturday 10/14.*** Students unable to attend the field trip must clear it in advance with the instructor and perform an equivalent make-up assignment.

## **Textbooks and other readings**

### The required texts:

Johnson, B. R. and K. Hill. 2002. Ecology and design: frameworks for learning. Washington, D.C.: Island Press.

Dramstad, W.E., J.D. Olson and R.T.T. Forman. 1996. Landscape ecology principles in landscape architecture and land-use planning. Washington, D.C.: Island Press.

A course reader and a course packet will be available at the UO Bookstore.

### The optional text:

Forman, R.T.T. 1995. Land mosaics: the ecology of landscapes and regions. Cambridge: Cambridge University Press.

## **Evaluation**

***Final project presentations will occur during the final exam period. Please plan to be in class for presentations on that day.***

The course is offered as either graded or pass/no pass. In either case, all assignments must be completed satisfactorily and submitted in a timely fashion to achieve a passing grade. Grades will be based on both individual performance and team projects. The written reading assignments count as a single assignment, and you must receive a minimum of 65% to pass that component. Students will be expected to attend all classes and be on time, including the field trip. On-time class attendance counts for 10% of a student's grade. More than two unexcused absences will result in further deduction of points.

Throughout much of the quarter, students will work in teams of 4-5 people that will serve as the basis for performing in-class exercises, small-group discussions, and the final project. Students will develop team covenants and conduct a mid-project peer evaluation to help develop good team dynamics. At the end of the quarter, students will be asked to provide a final peer evaluation of the relative contributions of their team members.

The university requires that graduate students fulfill requirements beyond those of undergraduates in 400/500 level courses. To this end, graduate students will be asked to complete additional reading assignments, and to exercise leadership in class sessions and team projects.

## **Policy Statement on Academic Honesty**

All work submitted in this course must be your own (or your own team's) and originally produced for this course. The use of sources (ideas, quotations, paraphrases) must be properly acknowledged and documented. Students are encouraged to work together and assist one another, but unless an assignment is specifically assigned as a team project, each student is expected to complete their own work individually.

For the consequences of academic dishonesty, refer to the Schedule of Classes published quarterly. Violations will be taken seriously and are noted on student disciplinary records. If you are in doubt as to the requirements or the nature of specific projects in this regard, please do not hesitate to contact the instructors before you complete the project/activity in question.

## **Information for Students with Disabilities**

If you have a documented disability or other health considerations that may affect your class participation, and anticipate needing accommodations in this course, please make arrangements to meet with Prof. Johnson soon. If this is a documented disability, please request that the Counselor for Students with disabilities send a letter verifying your disability.