

Landscape Ecology (GEO4376/5378)
(Fall 2016)

Class meets: Tu, Th 11 am - 12:15 pm, Bellamy 001
Office hour: Tu 9:30-10:30 am, Th 2-3 pm, or by appointment

Instructor

Dr. Tingting Zhao, Associate Professor, Department of Geography
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Credit Hours: 3

Course Description

This course is designed to introduce students to concepts, methods, and applications of landscape ecology. Students are expected to understand how landscape structure and spatial configuration affect ecological processes and vice versa through 1) lectures, 2) computer-based assignments, 3) closed-book exams, and 4) (graduate students only) an oral presentation (no written report is required).

Course Objectives

At the end of the course, the student will:

- 1) describe landscape ecology concepts and approaches, with particular emphasis on scale, landscape pattern, and ecological processes;
- 2) integrate landscape-ecology methods to geographic data analysis and modeling;
- 3) use software packages, including TerrSet and ArcGIS, for spatial analysis of broader environmental and socioeconomic questions; and
- 4) explore applications of landscape ecology to ecological conservation, natural resource management, landscape and urban planning, and other related fields.

Course Prerequisites

GEO1330 (Environmental Science) or equivalents (such as IFS2012) for all students
GIS4043/5105 (Introductory GIS) or equivalents (or taking concurrently) for all graduate students

Required Textbook and Readings

Landscape Ecology. ISBN 1-323-35916-8 (Note: This is a customized textbook including eight selected chapters from Smith, T.M. and Smith, R.L. 2015. *Elements of Ecology 9th edition*. Pearson).

Turner, M. and Gardner, R.H., 2015, *Landscape Ecology in Theory and Practice: Pattern and Process*. Springer. ISBN 978-1-4939-2794-4 (e-book) 978-1-4939-2793-7 (hardcover).

Electronic Materials

Class announcements, assignments, and lecture notes will be posted on Blackboard course site LANDSCAPE ECOLOGY.

General Requirements for Assignments

There are three main computer-based assignments. Due to the space limit of our GIS lab, **students are required to schedule off-class hours to meet and work on the three assignments.**

All assignments require the utilization of computers and software called TerrSet, ArcGIS, and/or RULE. It is very important that you have some prior knowledge of GIS and experience in using GIS software. In addition, some software is only available in our GIS lab(s).

The class will be divided into teams, each led by a graduate student with experience in ArcGIS and/or TerrSet, to finish each assignment task.

The students will be evaluated as a group based on quality of the submitted computer-based assignment. They will also be graded by their peers for contribution to each assignment; and this grade will also be used to determine a student's final grade received for each computer-based assignment.

Also, **note that there may be possibility of one or two computer-based assignment(s) to be replaced by essay assignment(s)** due to unexpected software issues. In this case, the students will each write his/her own essay and be graded individually.

Graduate Presentation

Graduate students will be required to finish an independent project (no written report is required) that uses landscape ecology theory and approaches in an area of particular interest to them. The choice of topic must be approved by the instructor. Ideally, this project will provide an opportunity for students to identify or enhance their research, e.g., thesis or dissertation work.

The content of this project may be literature review or research project with real-world data analysis. The *presentation proposal* must be typewritten, including the topic of presentation and a reading list. *The oral presentation* should be 15 minutes in length, to be followed by a 5-minute question period. PowerPoint or similar presentation media is required. No written reported is required as a part of this term project.

Grading

Your grade will be determined based on combined performance of exams, assignments, and (graduate students only) oral presentation.

Session	Exam 1	Exam 2	Assignments	Graduate Presentation
Undergrad	40%	40%	18%	n/a; 2% for attendance
Grad	30%	30%	30%	10%

Course Policies

Attendance is required throughout the semester. Absences due to your outside work schedule, extended job interviews, routine family or spousal responsibilities, and/or vacations are not excused absences. If an unplanned absence occurs, you will need to bring verification of your absence (a note from a physician or the Health Center, jury duty notification form, etc) in order to reclaim a lost attendance day.

The Director of Student Health Services does not issue excuses to students. A card indicating date and time of admission, discharge or treatment will be given to the student for presentation to the faculty member in a timely manner. Ultimately, the authority for deciding whether the student is excused for medical reasons rests with the instructor.

No delay will be accepted for assignments and graduate presentation. You normally have an entire week to work on an assignment, and several weeks for the presentation. Start as early as possible to avoid negative impacts from unfavorable situation arising close to the submission deadline.

Exam makeup is only permitted for a student when justified by illness, conflicting examinations, four or more examinations in a 24-hour period, or for certain emergencies. Arrangements must be made prior to the scheduled exam.

Persistent informal talking and any reading or studying of other materials will not be tolerated in classroom meetings. All changes to the course schedule made in class are the responsibility of the student. You are responsible for all missed class materials.

Office appointments will be made only when there is a clear conflict with the student's course schedule.

Academic Honer Policy

The Florida State University Academic Honor Policy outlines the University's expectations for the integrity of students' academic work, the procedures for resolving alleged violations of those expectations, and the rights and responsibilities of students and faculty members throughout the process. Students are responsible for reading the Academic Honor Policy and for living up to their pledge to ". . . be honest and truthful and . . . [to] strive for personal and institutional integrity at Florida State University." (Florida State University Academic Honor Policy, found at <http://fda.fsu.edu/Academics/Academic-Honor-Policy> .)

Americans with Disabilities Act

Students with disabilities needing academic accommodation should: (1) register with and provide documentation to the Student Disability Resource Center; and (2) bring a letter to the instructor indicating the need for accommodation and what type. This should be done during the first week of class.

This syllabus and other class materials are available in alternative format upon request.

For more information about services available to FSU students with disabilities, contact

Student Disability Resource Center
874 Traditions Way
108 Student Services Building
Florida State University
Tallahassee, FL 32306-4167
(850) 644-9566 (voice)
(850) 644-8504 (TDD)
sdc@admin.fsu.edu
<http://www.disabilitycenter.fsu.edu/>

Syllabus Change Policy

This syllabus is subject to change with advance notice. The class schedule on our Blackboard course site gives the most up-to-date listing of our schedule.

Schedule
(subject to change)

Week	Date	Topic	Readings	Assignments
1	8/30, 9/1	Ecology	Pearson chpt. 1	
2	9/6,8	Organisms & population	Pearson chpt. 3	
3	9/13,15	Species interaction	Pearson chpt. 4	
4	9/20,22	Ecological communities	Pearson chpt. 5	
5	9/27,29	Landscape ecology	Pearson chpt. 8	
6	10/4,6	Scale	Turner p15-29	Assignment 1
7	10/11,13	Landscape pattern I	Turner chpt. 2	
8	10/18, 20	Landscape pattern II; Exam 1 (on Thursday)	Pearson chpt. 6	
9	10/25,27	Landscape pattern metrics	Turner chpt. 4	Assignment 2
10	11/1,3	Pattern-process interaction	Turner chpt. 7	
11	11/8,10	Model	Turner chpt. 3	Graduate presentation proposal due on Thursday
12	11/15,17	Neutral model	Turner chpt. 3	Assignment 3
13	11/22	Disturbance	Turner chpt. 6	
14	11/29, 12/1	Succession; Exam 2 (on Thursday)	Pearson chpt. 7	
15	12/6,8	Graduate presentation; Summary and course evaluation		