

Landscape Ecology - GEO4376

Fall 2022

Class meets: Tu, Th 1:20-2:35 pm

Bellamy 117

Office hour: by appointment

Instructor

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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) assignments, 3) open-book exams, and 4) a final project.

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) examine software packages, such as QGIS or R, 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

GEO 1330 (Environmental Science) or equivalents (such as IFS2012 Sustainable Society)

GIS 4043 (Introductory GIS). Taking the introductory GIS course concurrently is fine.

GEO 2200C (Physical Geography)

Textbook

Turner, M. and Gardner, R.H., 2015, Landscape Ecology in Theory and Practice: Pattern and Process. Springer. ISBN 978-1-4939-3818-6 (eBook 978-1-4939-2794-4).

Suggested Readings

Smith, T.M. and Smith, R.L. 2015. Elements of Ecology (subscription) 9th edition. Pearson. ASIN: B00XIH18TM.

Electronic Materials

Class announcements, lecture notes, assignments, and exam study guides will be posted on Canvas course site LANDSCAPE ECOLOGY.

Grading

Your grade will be determined based on combined performance of exams, essay and peer reviews, computer-based assignments, and final project.

Exam 1	20%
Exam 2	20%
Essay 1 and peer review	10%
Essay 2 and peer review	10%
Computer-based assignments	17%
Final project	20%
Attendance	3%

General Requirements for Essay and Peer Reviews

- 1) You will have two sets of essay-peer review assignment.
- 2) Each assignment set consists of two parts – first part is for each student to write an essay, and the second part is that each student reviews and grades

three (3) essays submitted by your peer classmates. Note: In order to receive a grade for the second part, you will have to participate in the first part!

3) For the part of essay, unless stated otherwise, you will have 1 or 2 questions posted on Canvas. Choose only one of them to write an essay. The length of each essay is expected to be approximately 500 words.

4) Your essay must reflect the knowledge and thoughts gained from readings and lectures of Landscape Ecology. Irrelevant topics will not be tolerated and hence not counted towards grade.

5) For the part of peer review, each one of you will be asked to grade and comment on three essays submitted by your fellow classmates. A structured rating form will be provided to you. The rating will be anonymous – the essay writer will not see the names of his/her peer reviewers; s/he will see the itemized scores and comments from his/her reviewers. Note: your reviews must use your best knowledge and grading efforts. If you are found with any of the gaming strategies, you will be penalized in the grade you'll receive for the peer review part.

6) The grade of each student's essay is determined by the peer grading and evaluation of the course instructor. The grade of each student's peer reviews will be determined by the course instructor.

7) Plagiarism will not be tolerated. Submission of the essay will be through Turnitin in Canvas. This tool will provide a similarity percentage. Percentages higher than 12% will be graded with zero points.

General Requirements for computer-based Assignment

1) This assignment requires the utilization of a computer and software such as QGIS and R.

2) The class will be divided into teams, each led by a student with experience in GIS, to finish each assignment task.

3) The students will be evaluated as a group based on quality of the submitted report. 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 this computer-based assignment.

4) Also, note that there may be possibility that this assignment to be replaced by an essay assignment due to unexpected software issues. In this case, students will each write his/her own essay and be graded individually.

Final Project

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 interests. 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 report is required as a part of this term project.

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.

No delay will be accepted for essay submissions and student presentation except for extenuating circumstances, for which alternative arrangements with the instructor will be required as early as possible. You normally have an entire week to work on an essay, 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, three 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.

UNIVERSITY ATTENDANCE POLICY:

Excused absences include documented illness, deaths in the family and other documented crises, call to active military duty or jury duty, religious holy days, and official University activities. These absences will be accommodated in a way that does not arbitrarily penalize students who have a valid excuse. Consideration will also be given to students whose dependent children experience serious illness.

ACADEMIC HONOR 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/academicresources/academic-integrity-and-grievances/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.

Please note that instructors are not allowed to provide classroom accommodation to a student until appropriate verification from the Student Disability Resource Center has been provided.

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 the:

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)

sdrc@admin.fsu.edu

<http://www.disabilitycenter.fsu.edu/>

FREE TUTORING FROM FSU

On-campus tutoring and writing assistance is available for many courses at Florida State University. For more information, visit the Academic Center for

Excellence (ACE) Tutoring Services' comprehensive list of on-campus tutoring options – see <http://ace.fsu.edu/tutoring> or contact tutor@fsu.edu.

High-quality tutoring is available by appointment and on a walk-in basis. These services are offered by tutors trained to encourage the highest level of individual academic success while upholding personal academic integrity.

SYLLABUS CHANGE POLICY

Except for changes that substantially affect implementation of the evaluation (grading) statement, this syllabus is a guide for the course and is subject to change with advance notice.

SCHEDULE

(Subject to change)

Week	Date	Topic	Readings	Assignment
1	8/23, 25	Presentation + Introduction to Landscape Ecology	Turner 1	
2	8/30, 9/1	Organism & Population	Smith 1, 8	
3	9/6, 8	Ecological Communities	Smith 12, 16	
4	9/13, 15	Exam Q&A + Exam 1 on Thursday: due on the same day		
5	9/20, 22	Model & neutral model	Turner 3	Essay 1 starts
6	9/27, 29	Pattern-process I	Turner 2	Essay 1 due on Tuesday; peer-review starts
7	10/4, 6	Pattern-process II	Turner 7	Peer-review due
8	10/11, 13	Pattern metrics	Turner 4	
9	10/18, 20	Computer-based Assignment		Computer-based Assignment starts
10	10/25, 27	Computer-based Assignment II		
11	11/1, 3	Scale & Scaling	Turner 5	Analytical Assignment due on Tuesday Essay 2 starts
12	11/8, 10	Disturbance & Succession	Turner 6	Essay 2 due on Thursday Peer review starts
13	11/15, 17	Exam Q&A + Exam 2 on Thursday: due on the same day		
14	11/22	Landscape dynamics	Turner 9	Peer review due
15	11/29, 12/1	Final Projects		