WIS 4203C – Landscape Ecology and Conservation

Department of Wildlife Ecology and Conservation
University of Florida
Course Syllabus, Spring 2026, 3 Credits

Instructor
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Office hours:
Monday 8:30am-10:30am
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Scan QR code to schedule an appointment

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Welcome to WIS 4203C!

This course introduces the core concepts, theories, and methods of landscape ecology and shows how they help us understand and conserve wildlife in real, ever-changing environments. Landscape ecology focuses on how spatiotemporal heterogeneity shapes ecological patterns and processes, and once you start noticing these patterns, you will see them everywhere. Throughout the semester, we will explore how landscape patterns form and how to quantify them, and we will discuss how these patterns influence biodiversity, wildlife behavior, movement, metapopulation dynamics, species distributions, and conservation planning.

Course objectives

By the end of the semester, students who fully engage with the material and complete all course activities should be able to:

1. Describe the historical development and conceptual foundations of landscape ecology;
2. Apply GIS and spatial analysis tools commonly used in landscape ecology;
3. Apply landscape ecological perspectives to wildlife management and conservation;
4. Critically interpret scientific literature and debates in landscape ecology; and
5. Demonstrate scientific communication and critical thinking skills.

Prerequisite

One upper division course in ecology (FOR 3153C, PCB 3601C or PCB 4044C; and FOR 3434C), one in statistics (e.g., STA 2023), and one course in GIS (GIS 3043, GIS 3072C or URP 4273).

Assigned Readings and Course Notes

There are no required textbooks, but the following text may be useful:

Turner, M. G., and Gardner, R. H. 2015. Landscape Ecology in Theory and Practice: Pattern and Process. Springer-Verlag, New York.

Selected articles and book chapters from recent literature in landscape ecology will be required most weeks, which I will make available on E-Learning. Lecture notes and lab information will also be available there. Simply point your browser to http://elearning.ufl.edu/, and on the right-hand portion of the site, select the LOG IN TO E-LEARNING, and then use your GatorLink user name and password to login.

Assessments, Grading, and Policies

There will be a variety of assessment tools used during this course, ranging from lab assignments, to social media contents, to exams. The following table breaks down how each type of assessment will be weighted in your final grade:

Assignments	**% of Grade**
Weekly quizzes	15%
Social Media Assignments:	
Creation	15%
Review	15%
Lab:	
Lab assignments	20%
Lab practical	10%
Final Exam	
Question submissions	10%
Final Exam	15%
Total	100%

Grading Scale: A > 92%, A- = 90-91.9%, B+ = 87-89.9%, B = 82-86.9%, B- = 80-81.9%; C+ =77-79.9%, C =72-76.9%, C- = 70-71.9%; D+ = 67-69.9%, D = 62-66.9%, D- =60-61.9%, E<60%

Weekly Quizzes (15%) – To ensure that you keep up with class topics, a quiz will be posted each week covering that week's material. Quizzes are completed online in Canvas. They are intended to be short, straightforward checks of understanding. Late quizzes are only accepted with UF-

approved excuses. There will be no make-up quizzes, but you will be able to drop the lowest score of your quiz assignments.

Social Media Creation (15%) - To build your skills in communicating science to broad audiences, which has become increasingly important, you will be creating 2 short social media videos (1-3 minutes each) that translate landscape ecological concepts into clear and engaging messages. The contents should be scientifically accurate, clear, and engaging for a general audience. Each video must be uploaded to a public platform such as Instagram, Facebook, LinkedIn, YouTube, or X/Twitter, and students will submit the public link for evaluation. Creation 1, due in Week 7, may cover any topic from Weeks 1–6 of the course, and Creation 2, due in Week 12, may cover any topic from Weeks 7–11. Lab meetings in Weeks 6 and 11 provide extra time to work on these videos. The score for each creation will be based on peer reviews using a standardized rubric (see below), with instructor oversight to ensure fairness and consistency.

Rubric: Social Media Creation (25 points total each)

Category	Points	Description
Scientific Accuracy	5	Content is correct, relevant, and reflects clear understanding of course material.
Clarity & Accessibility	5	Explanation is understandable to a general audience; jargon is minimized or clearly explained.
Engagement & Creativity	5	Video is interesting, well-paced, and communicates why the topic matters.
Format & Production Quality	5	Video is visually clear, audible, and appropriate for a 1–3 minute public social media format.
Completeness	5	Submitted on time with the public link.

Social Media Review (15%) - To strengthen your ability to think critically about scientific communication, you will review your classmates' social media creations using a structured rubric. Critical evaluation is an increasingly important skill as misinformation becomes more widespread, and this assignment gives you practice assessing accuracy, clarity, and communication choices in real examples. During each of the two creation rounds, you will be assigned to review approximately 5 videos, providing a rubric score and a brief written critique (about 3 sentences) for each. Reviews should consider scientific accuracy, clarity, accessibility for a general audience, engagement, and the overall effectiveness of the communication. Your review score will be based on the completeness, thoughtfulness, and professionalism of your evaluations.

Lab Assignments (20%) - Throughout the semester, there will be a series of lab assignments linked to each week's material, completed either during lab or submitted the following Monday before class. These assignments reinforce hands-on skills in GIS and spatial analysis and provide

practice applying landscape ecology concepts to real datasets. There are no make-up labs, but the lowest lab assignment score will be dropped.

Lab Practical (10%) - The final lab of the semester will be devoted to a lab practical designed to assess your ability to use GIS tools to address landscape-scale ecological and conservation questions. The practical will include short-answer and applied analysis tasks that test your ability to perform spatial operations, interpret maps and metrics, and connect GIS outputs to wildlife management and conservation concepts.

Exam Question Submission (10%) - To help you review the course material and reflect on what you consider most important, you will submit two potential exam questions for the final exam (each worth 5%). These questions are **due in Week 15 before the last lecture**, and should represent meaningful concepts, methods, or applications covered during the semester. Your questions may take the form of short answer, multiple choice, or brief analytical prompts, and **each question must include a correct answer or explanation**. The goal is not to create easy or tricky questions, but to demonstrate your understanding of central ideas that all students should be able to answer. Because there is very little time to incorporate questions into the final exam, *late submissions cannot be accepted for any reason*. Your submission will be evaluated for completeness, accuracy, relevance, and alignment with course content. Selected questions may be incorporated into the final exam.

Final Exam (15%) - The final exam is cumulative and assesses your understanding of the major concepts, methods, and applications covered throughout the course. The exam may include a mix of multiple-choice questions, short-answer prompts, interpretation of maps or figures, and applied problem-solving scenarios related to landscape ecology and conservation. You will be expected to demonstrate not only familiarity with key ideas, but also your ability to analyze spatial problems and communicate ecological reasoning clearly. The final exam will take place on **Friday, May 1, from 7:30–9:30 AM**, as assigned by the university.

Late policy for assignments – Late assignments are generally not accepted. If an assignment is accepted without an authorized extension, it will incur a 10% deduction per day past the deadline. Authorized extensions without penalties will only be granted for documented, university-approved reasons. See the UF Attendance Policies for permitted reasons for make-ups: https://catalog.ufl.edu/UGRD/academic-regulations/attendance-policies/

UF Academic policies and resources

This course follows all University of Florida academic policies and guidelines. Students are responsible for reviewing the university-wide policies on accommodations, attendance,

academic integrity, wellness resources, and other support services provided at the following link: **https://go.ufl.edu/syllabuspolicies**

Tentative Schedule

Week	Dates	Monday	Wednesday	Thursday	Quizzes
1	Jan 12–18	What landscape ecology is and its history		Lab 1: GIS intro	Quiz 1
2	Jan 19–25	**No class (Holiday)**	History of landscape ecology and scale	Lab 2: Scaling issues	Quiz 2
3	Jan 26–Feb 1	Quantifying the pattern of landscapes		Lab 3: Patch metrics	Quiz 3
4	Feb 2–8	Causes of landscape pattern		Lab 4: Causes of landscape pattern	Quiz 4
5	Feb 9–15	Doing landscape ecology		Lab 5: Sampling across landscapes	Quiz 5
6	Feb 16–22	Habitat loss and fragmentation		Lab: Social media #1	Quiz 6
7	Feb 23–Mar 1	Connectivity theory		Lab 6: Connectivity	Quiz 7
8	Mar 2–8	Behavioral landscape ecology		Lab 7: Animal movement	Quiz 8
9	Mar 9–15	Species distribution modeling		Lab 8: Habitat suitability	Reviews #1, Quiz 9
10	Mar 16–22	**No class (Spring Break)**			
11	Mar 23–29	Metapopulations		Lab: Social media #2	Quiz 10
12	Mar 30–Apr 5	Source–sink dynamics		Lab 9: Landscape prioritization	Quiz 11
13	Apr 6–12	Land-use planning		Lab 10: Hotspots, conservation planning	Quiz 12
14	Apr 13–19	Landscape genetics		Lab practical	Quiz 13
15	Apr 20–26	Conclusions; future of landscape ecology		**No class**	Exam questions, Reviews #2
Finals	May 1	**Final Exam: Friday, May 1**			

Notes:
Quizzes are due the following Monday before class.
Labs are due the following Thursday before class.
Social media #1 reviews are due before Spring break.
Social media #2 reviews are due before the last day of class.