SWS 6932 – Ecosystem Science: Concepts and Applications

Spring 2026
3 Credits
Hybrid Offering – Synchronous (Tuesday period 6 and Thursday Periods 6 &7)

Instructor
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Office hours: Zoom chat sessions every Thursday period 7; in-person office hours by appointment

Teaching Assistant - TBD
[office location]
[telephone number]
[email address]
[Zoom or in-person office hours, day, time, link location]

Course Description
This course is designed to teach students the basics of ecosystem sciences, including ecosystem structure and functions. Specific topics will include measuring and understanding primary and secondary production, the roles of organisms in ecosystem stability and functions, case studies of important ecosystem-scale studies, and evaluating ecosystem services. Basic and applied approaches to ecosystem science will be explored.

Course Learning Objectives
Upon completion of this course, students should understand:

- The structure of ecosystems and ecological scales (time and space) of ecosystem dynamics, emergent properties and related concepts
- The importance of scale in ecological studies
- Understand nutrient cycling and energy flow dynamics at ecosystem scales
- How to measure and understand ecosystem functions such as primary and secondary production, energy flow, nutrient cycling, and maintenance of biodiversity
- Roles of natural disturbance
- Ecosystem recovery from disturbance; successional processes
- The various roles of organisms, from microbes to animals, in ecosystem structure and functions
- How ecosystems are studied; strengths and limitations of ecosystem-scale approaches
- How to interpret ecosystem scale studies through examination of case studies
- Ecosystem services and how to evaluate them

Prerequisites
None, but experience with basic ecology, chemistry, and physics is expected.

Course Reading and Learning Materials

Primary literature (scientific articles) will be provided throughout the semester. Discussions of readings will be during scheduled class times.

Suggested text resources:

Weathers, K.C., Strayer, D. L., and G. E. Likens (2021), *Fundamentals of Ecosystem Science,* 2nd edition, Academic Press.

Jorgensen (2009), *Ecosystem Ecology,* Elsevier.

Golley, F. J. (1996), *A History of the Ecosystem Concept in Ecology: More Than the Sum of Its Parts*, Yale University Press.

Dodds, W.K. and M. R. Whiles (2019), *Freshwater Ecology: Concepts and Applications of Limnology*, 3rd edition, Academic Press.

Garvey, J. E. and M. R. Whiles. 2016. *Trophic Ecology*. CRC Press, Taylor and Francis Group.

Students Responsibilities:

Students are expected to study the assigned text prior to lecture coverage in class and are expected to actively participate in class and chat discussions.

Instructor interaction plan

Hybrid chat/discussion/review/Q&A sessions will occur for 1 hour each week on Thursday period 7

Required Technology and How to Obtain it

Students must have an e-mail account, Internet access, and access to a computer that meets the University of Florida computer standards.

Class expectations

Students are expected to attend course meetings on time and actively participate in discussions, whether remote or in person.

Technical Support

UF Computing Help Desk & Ticket Number: All technical issues require a UF Helpdesk Ticket Number. The UF Helpdesk is available 24 hours a day, 7 days a week. https://helpdesk.ufl.edu/ | 352-392-4357

Weekly Course Schedule

Week	Topic	Assessment	Dates
1/12	Introduction, ecosystem basics, emergent properties		
1/19	Structure and function of ecosystems		
1/26	Ecosystem functions: primary & secondary production		
2/2	Nutrient cycling and energy flow in ecosystems		
2/9	Scale in ecology, reductionist vs. holistic approaches		
2/16	Review for exam	Exam 1	2/19
2/23	Ecosystem functions - exports and subsidies		
3/2	Disturbance and recovery, successional patterns		
3/9	Ecosystem management approaches		
3/16	**Spring Break**		

Week	Topic	Assessment	Dates
3/23	Review for exam	Exam 2	3/26
3/30	Biodiversity and ecosystem structure and function		
4/6	Classic ecosystem studies – case studies; **report due 10th**		
4/13	Evaluating ecosystem services		
4/20	**23rd, 24th – reading days**		
4/27	**Exam Week**	Final exam	

Course Grading Policy
Course grading is consistent with UF grading policies.

Grading Structure

Assignment Type	Point Value	Percent of Final Grade
Exam 1	100	27%
Exam 2	100	27%
Written report on ecosystem study	25	7%
participation	20	5%
Final Exam	125	34%
Total	370	

Grading Scale

Grade	Points	Percentage
A	337	90
B	300	80
C	263	70
D	225	60
E	221	<60

Make-Up Work and Absences
A 10% per day deduction will be assessed for any assignments turned in late. Assignments turned in more than a week late will not be accepted.
Requirements for class attendance and make-up exams, assignments and other work are consistent with university policies that can be found at:
https://catalog.ufl.edu/ugrad/current/regulations/info/attendance.aspx.

Academic Integrity

As a student at the University of Florida, you have committed yourself to uphold the Honor Code, which includes the following pledge: *We, the members of the University of Florida community, pledge to hold ourselves and our peers to the highest standards of honesty and integrity.* You are expected to exhibit behavior consistent with this commitment to the UF academic community, and on all work submitted for credit at the University of Florida, the following pledge is either required or implied: *"On my honor, I have neither given nor received unauthorized aid in doing this assignment*."

It is assumed that you will complete all work independently on each course unless the instructor provides explicit permission for you to collaborate on course tasks (e.g., assignments, papers, quizzes, exams). Furthermore, as part of your obligation to uphold the Honor Code, you should report any condition that facilitates academic misconduct to appropriate personnel. It is your individual responsibility to know and comply with all university policies and procedures regarding academic integrity and the Student Honor Code. Violations of the Honor Code at the University of Florida will not be tolerated. Violations will be reported to the Dean of Students Office for consideration of disciplinary action. For more information regarding the Student Honor Code, please see: http://www.dso.ufl.edu/SCCR/honorcodes/honorcode.php.

Online Course Evaluation Process
Students are expected to provide professional and respectful feedback on the quality of instruction in this course by completing course evaluations online via GatorEvals. Guidance on how to give feedback in a professional and respectful manner is available at https://gatorevals.aa.ufl.edu/students/. Students will be notified when the evaluation period opens, and can complete evaluations through the email they receive from GatorEvals, in their Canvas course menu under GatorEvals, or via https://ufl.bluera.com/ufl/. Summaries of course evaluation results are available to students at https://gatorevals.aa.ufl.edu/public-results/.

Academic Policies and Related Resources
Academic policies for this course are consistent with university policies. See https://syllabus.ufl.edu/syllabus-policy/uf-syllabus-policy-links/

Campus Health and Wellness Resources
Visit https://one.uf.edu/whole-gator/topics for resources that are designed to help you thrive physically, mentally, and emotionally at UF.

Campus Help Resources
Students experiencing crises or personal problems that interfere with their general well-being are encouraged to utilize the university's counseling resources. The Counseling & Wellness Center provides confidential counseling services at no cost for currently enrolled students. Resources are available on campus for students having personal problems or lacking clear career or academic goals, which interfere with their academic performance.

1. *University Counseling & Wellness Center, 3190 Radio Road, 352-392-1575,* **www.counseling.ufl.edu/cwc/**
   - Counseling Services
   - Groups and Workshops
   - Outreach and Consultation
   - Self-Help Library
   - Training Programs
   - Community Provider Database

2. U Matter We Care, **www.umatter.ufl.edu/**
3. *Career Resource Center,* First Floor JWRU, 392-1601, **www.crc.ufl.edu/**

Services for Students with Disabilities
The Disability Resource Center coordinates the needed accommodations of students with disabilities. This includes registering disabilities, recommending academic accommodations within the classroom, accessing special adaptive computer equipment, providing interpretation services and mediating faculty-student disability related issues. Students requesting classroom accommodation must first register with the Dean of Students Office. The Dean of Students Office will provide documentation to the student, who must then provide this documentation to the Instructor when requesting accommodation; 0001 Reid Hall, 352-392-8565, **www.dso.ufl.edu/drc/**

Software Use
All UF faculty, staff and students are required and expected to obey the laws and legal agreements governing software use. Failure to do so can lead to monetary damages and/or criminal penalties for the individual violator. Because such violations are also against university policies and rules, disciplinary action will be taken as appropriate.

Privacy and Accessibility Policies (Is this needed?)
[required for online courses, list all technology used]

- Instructure (Canvas)
  - Instructor Privacy Policy
  - Instructor Accessibility
- Zoom
  - Zoom Privacy Policy
  - Zoom Accessibility