

Forest Ecology - FOR 3153C (3 Credits)
Course Syllabus- Spring 2022

COURSE DESCRIPTION

Forest ecology is the study of the relationship of organisms with each other and the environment, specifically within a forested ecosystem. This course is designed to provide students with the conceptual background needed to understand the complexity of interactions that occur within a forest ecosystem at multiple scales and over time. Emphasis is also placed on developing the professional skills needed to evaluate, apply, and present this conceptual, scientific understanding in the context of resource management.

COURSE OBJECTIVES

To learn

1. the concepts and principles of plant ecology
2. how abiotic and biotic factors control forest productivity and nutrient cycling
3. the temporal changes in ecosystem structure and function
4. the use of scientific literature, with a focus on interpreting graphs and tables
5. skills to make own ecological observations and measurements
6. to apply ecological knowledge in the restoration and multifunctional management of forest ecosystems at local and landscape level

TIME AND LOCATION: Thursday, 5:00-8:00 pm, Room 4814, 3 mandatory Saturday field labs

INSTRUCTOR

Dr. Ajay Sharma
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TEACHING ASSISTANT

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OFFICE HOURS

Monday, 11:00 am- 1:00 pm, in Bldg. 4900, Room # 4907, OR, by appointment.

RECOMMENDED TEXTBOOKS (NOTE: NO REQUIRED TEXT)

Binkley, D. (2021). *Forest Ecology: An Evidence-Based Approach*. John Wiley & Sons.
Kimmins, J. P. (2004). *Forest Ecology*. 3rd edition. Prentice-Hall Inc., NJ.

OTHER RELEVANT TEXTBOOKS

Franklin, J.F., Johnson, K.N., and Johnson, D.L. (2018). *Ecological forest management*. Waveland Press.
Barnes, B.V., Zak, D.R., Denton, S.R. and Spurr, S.H. (1997). *Forest Ecology*. Wiley Press. 4th edition.
Perry D.A., Oren, R., and Hart, S.C. (2008). *Forest Ecosystems*. 2nd Ed. Johns Hopkins University Press.

OTHER COURSE RESOURCES

- LinkedIn Learning is a useful resource for help in Excel and other common software. It can be accessed by UF students for free at <https://training.it.ufl.edu/linkedin/>
- For scientific literature, the “web of science” is available to students free of charge on campus or when connected by the campus VPN (virtual private network).
http://apps.webofknowledge.com/UA_GeneralSearch_input.do?product=UA&search_mode=GeneralSearch&SID=4AS8kteP7SRmsEaOyXA&preferencesSaved=
- To set up the VPN on your computer, go to <https://connect.ufl.edu/it/wiki/Pages/glvpn.aspx>

ADDITIONAL READINGS

Instructor will assign readings throughout the semester.

ELECTRONIC COMMUNICATIONS AND E-LEARNING

Course material will be available through the CANVAS e-learning site. You can login to CANVAS at the e-learning main website at <https://lss.at.ufl.edu/>. You will use the site to access, download or print readings and course materials, submit assignments, and check for announcements. All course related communication will be done using Canvas. You should be checking your Canvas site regularly. It is the responsibility of the student to print off the lecture material in advance of class.

TECHNOLOGY REQUIREMENTS

- A computer or mobile device with high-speed internet connection
- A headset and/or microphone and speakers is suggested
- Latest version of web browser. Canvas supports only the two most recent versions of any given browser. Learn what browser you are using at <https://www.whatsmybrowser.org>
- A printer for printing your handouts and other course material

DESCRIPTION OF ASSIGNMENTS

Quizzes

The quiz is intended to evaluate your comprehension of the main concepts from the reading material. The format may vary between short answer (3 sentences), matching, or multiple choice.

Class Activities or mini labs

This course will have long class sessions (typically 3 hrs). In addition to the lectures during the class sessions, we will have some activities (abstracts, case studies, mini labs, etc.) designed to supplement and reinforce the lecture material and concepts discussed. Students will work individually or in groups for these activities. These activities will be due either at the end of the class or next week, for which you will receive points upon satisfactory completion. You are expected to participate fully in these activities. If you do not engage with your group in these activities, you will receive zero credit for that activity.

Abstracts of scientific journal articles

Students will select a full-length article from a scientific journal (see the list of journals below) that expands upon material covered in this course, and prepare a summary (1-2 page long, typed) that will have the following components

1. complete reference to the article (1 point; wrong citation format will not receive any points).
2. description of the topic (1 points)
3. findings/results from the research (2 points)
4. interesting ideas about the article (1 point)
5. relevance of the article to topics covered in this course (1 point)
6. 3 to 5-minute verbal presentation of the abstract to the class (4 points)

E.g. Citation Format:

Brethauer, D. K., Sharma, A., Vogel, J. G., Miller, D. L., & van Santen, E. (2021). Longleaf pine seedling growth and survival: Effects of season and intensity of simulated prescribed burning. *Forest Ecology and Management*, 502, 119719.

List of journals

Ecology

Ecological Applications

Journal of Applied Ecology

Journal of forestry

Journal of Wildlife Management

Forest Ecology and Management

Plant Ecology

Midterm and Final

There will two exams- midterm and final. These exams will consist of mix of short and long answer type questions, in addition to some objective questions. The exam will test your understanding of the course material and the questions will require you to synthesize and apply concepts learned in lectures, labs, class activities, and assigned readings. The exam will be closed book.

Labs and Reports

Much of the lab work done in this course is conducted in the field. Whenever field (outdoor) labs are scheduled, students should wear appropriate field clothing. For labs, you are supposed to collect and analyze data or summarize discussions for each lab project. The purpose of the lab exercises and reports is to develop skills for analyzing the environment, interpreting results in relation to ecological concepts, and presenting your findings. The lab reports will consist of the following sections: Introduction (including objectives and hypotheses), Methods, Results, Discussion, and Conclusions. The Introduction should relate your group's particular study to the concepts learned in class and should demonstrate why you chose your particular hypothesis. The Methods and Results sections will explain what you did and what you found. In the Discussion section, you should interpret your results in relation to your original hypothesis. In this section, you can also elaborate and integrate other groups' results in order to demonstrate your knowledge of the conceptual material being studied. The Conclusions section should summarize whether or not your hypothesis was supported by your results and discuss any broader implications of your study.

Final Project Paper/Report

Students will select a topic of their interest, but relevant to the field of forest ecology, and either (1) develop a review/synthesis article on that topic or (2) come up with a research topic and data collection design and will collect and analyze data. The final paper should be at least five pages long (single spaced, typed) + literature cited + Tables and Figures. Final Project submissions will be divided into several parts due at different times: Part 1: Title and Group formation (5 pts), Part 2: Literature Review (10 pts), Part 3: Introduction and Methods (10 pts), Part 4: First Draft (10 pts), and Part 5: Final Submission (40 pts). Peer reviewing will be part of the grading process for the final project.

Final Project Presentations

Students (group) will have up to 25 minutes for presentation and 5 minutes for questions. Instructor, teaching assistant, and peers will grade your presentations.

COURSE GRADING SYSTEM

<i>Assignment</i>	<i>Number of assignments</i>	<i>Points for each assignment</i>	<i>Total points</i>	<i>% of final grade</i>
Quizzes	2	25	50	10
Midterm Exam	1	75	75	15
Final Exam	1	75	75	15
Class Activities and/or abstracts	10	10	100	20
Lab Reports	3	25	75	15
Final Project Report	1	100 points	100	20
Final Project Presentation	1	25 points	25	5

TOTAL POINTS= 500 (100%)

<u><i>Letter Grade</i></u>	<u><i>Numeric Value</i></u>
A	93-100
A-	90-92
B ⁺	87-89
B	83-86
B ⁻	80-82
C ⁺	77-79
C	73-76
C ⁻	70-72
D	60-69

E	<60
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A complete explanation of the UF Grading policies can be found at:

<https://catalog.ufl.edu/ugrad/current/regulations/info/grades.aspx>

ATTENDANCE, LATE SUBMISSIONS AND MAKE-UP REQUESTS

It is the responsibility of the student to access lecture material, readings, quizzes, and exams and to maintain satisfactory progress in the course.

Assignments turned in after the posted deadline will lose value at the rate of 10% for each 24 hours that is late (weekend days count too!). Exams cannot be rescheduled, except in the cases of extended serious illness or family emergencies. Arrangements to make up missed exams or turn in late assignments must be made with the instructor in advance of the due date.

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/UGRD/academic-regulations/attendance-policies/>

Computer or other hardware failures, except failure of the UF e-Learning system, will not excuse students for missing assignments. Any late submissions due to technical issues MUST be accompanied by the ticket number received from the Helpdesk when the problem was reported to them. The ticket number will document the time and date of the problem. You MUST e-mail your instructor within 24 hours of the technical difficulty if you wish to request consideration.

For computer, software compatibility, or access problems call the HELP DESK phone number—352-392-HELP = 352-392-4357 (option 2).

COURSE EVALUATION PROCESS

Student assessment of instruction is an important part of efforts to improve teaching and learning.

At approximately the mid-point of the semester, the School of Forest, Fisheries, and Geomatics Sciences (SFFGS) will request anonymous feedback on student satisfaction on various aspects of this course. These surveys will be sent out through Canvas and are not required but encouraged. This is not the UF Faculty Evaluation!

At the end of the semester, 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 HONESTY POLICY

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 in 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 or 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/scer/process/student-conduct-honor-code>.

SPECIAL ACCOMMODATION:

"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."

INCLUSIVE LEARNING ENVIRONMENT

This course embraces the University of Florida's Non-Discrimination Policy, which reads, *The University shall actively promote equal opportunity policies and practices conforming to laws against discrimination. The University is committed to non-discrimination with respect to race, creed, color, religion, age, disability, sex, sexual orientation, gender identity and expression, marital status, national origin, political opinions or affiliations, genetic information and veteran status as protected under the Vietnam Era Veterans' Readjustment Assistance Act.*

If you have questions or concerns about your rights and responsibilities for inclusive learning environment, please see the instructor or refer to the Office of Multicultural & Diversity Affairs website: <http://multicultural.ufl.edu>.

SOFTWARE USE

All faculty, staff and students of the university 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.

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/

CAMPUS HELPING RESOURCES

For issues with technical difficulties for e-learning in Canvas, please post your question to the Technical Help Discussion in your course, or contact the UF Help Desk at:

- Learning-support@ufl.edu | (352) 392-HELP - select option 2 | <http://elearning.ufl.edu>
- Library Help Desk support <http://cms.uflib.ufl.edu/ask>
- SFRC Academic Hub <https://ufl.instructure.com/courses/303721>

Student Life, Wellness, and Counseling Help

Students experiencing crises or personal problems that interfere with their general wellbeing 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.

- University Counseling & Wellness Center, 3190 Radio Road, 352-392-1575, <https://counseling.ufl.edu/>
 - Counseling Services
 - Groups and Workshops
 - Outreach and Consultation
 - Self-Help Library
 - Wellness Coaching
- U Matter We Care, <https://umatter.ufl.edu/>
- Career Resource Center, First Floor JWRU, 392-1601, <https://career.ufl.edu/>

Student Complaint Process

The SFFGS cares about your experience and we will make every effort to address course concerns. We request that all of our online students complete a course satisfaction survey each semester, which is a time for you to voice your thoughts on how your course is being delivered.

If you have a more urgent concern, your first point of contact should be the SFFGS Academic Coordinator or the Graduate/Undergraduate Coordinator for the program offering the course. You may also submit a complaint directly to UF administration:

- Residential Course: https://www.dso.ufl.edu/documents/UF_Complaints_policy.pdf
- Online Course: <http://www.distance.ufl.edu/student-complaint-process>

Other Academic Resources

[E-learning technical support](#), 352-392-4357 (select option 2) or e-mail to Learning-support@ufl.edu.

[Career Resource Center](#), Reitz Union, 392-1601. Career assistance and counseling.

[Library Support](#), Various ways to receive assistance with respect to using the libraries or finding resources.

[Teaching Center](#), Broward Hall, 392-2010 or 392-6420. General study skills and tutoring.

[Writing Studio](#), 302 Tigert Hall, 846-1138. Help brainstorming, formatting, and writing papers.

[Student Complaints Campus](#)

[On-Line Students Complaints](#)

IN-CLASS RECORDING

Students are allowed to record video or audio of class lectures. However, the purposes for which these recordings may be used are strictly controlled. The only allowable purposes are (1) for personal educational use, (2) in connection with a complaint to the university, or (3) as evidence in, or in preparation for, a criminal or civil proceeding. All other purposes are prohibited. Specifically, students may not publish recorded lectures without the written consent of the instructor.

A “class lecture” is an educational presentation intended to inform or teach enrolled students about a particular subject, including any instructor-led discussions that form part of the presentation, and delivered by any instructor hired or appointed by the University, or by a guest instructor, as part of a University of Florida course. A class lecture does not include lab sessions, student presentations, clinical presentations such as patient history, academic exercises involving solely student participation, assessments (quizzes, tests, exams), field trips, private conversations between students in the class or between a student and the faculty or lecturer during a class session.

Publication without permission of the instructor is prohibited. To “publish” means to share, transmit, circulate, distribute, or provide access to a recording, regardless of format or medium, to another person (or persons), including but not limited to another student within the same class section. Additionally, a recording, or transcript of a recording, is considered published if it is posted on or uploaded to, in whole or in part, any media platform, including but not limited to social media, book, magazine, newspaper, leaflet, or third-party note/tutoring services. A student who publishes a recording without written consent may be subject to a civil cause of action instituted by a person injured by the publication and/or discipline under UF Regulation 4.040 Student Honor Code and Student Conduct Code.

COURSE OUTLINE (WEEKLY SCHEDULE)

(This syllabus represents current plans and objectives for this course. As the semester progresses, changes may need to be made to accommodate timing, logistics, or to enhance learning. Such changes, communicated clearly, are not unusual and should be expected)

Week	General Topic	Critical Dates
1 (Jan 6)	Discuss Syllabus; Introduction; Why study Forest Ecology	
2 (Jan 13)	Ecosystem Ecology: Ecosystem concept, Biomes of the world; Production Ecology <i>Class activity:</i> A carbon cycle interactive, Photosynthesis-Respiration Game	
3 (Jan 20)	Abiotic factors and their ecological role; Discuss abstracts <i>Class activity:</i> Longleaf pine ecology; Jose et al. paper	Abstract 1 Due
JAN 22 (SATURDAY)	LAB 1 (Saturday)- Forest Communities and Microenvironment	
4(Jan 27)	Biotic Factors: Populations and Communities Community Ecology -I (<i>Community structure, Diversity, Species Interactions, Niche Concept</i>) <i>Class activity:</i> Species diversity assessment, Niches of Radiata pine	Final Project Part 1
5(Feb 3)	Community Ecology –II (<i>Ecological Interactions and Species Coexistence</i>) <i>Class activity:</i> Falcataria and Eucalyptus mixed plantation	Lab Report 1 Due
Feb 5 (SATURDAY)	LAB 2- Stand Structure, Diversity, and Productivity	
6(Feb 10)	Invasion Ecology: Invasive plants and forest ecosystems <i>Class activity:</i> Angry Aliens Ecology, Discuss Lab 2 calculations	Quiz 1 Due
7(Feb 17)	Guest lecture (Dr. Silva); Climate Change and Forest Ecosystems <i>Class activity:</i> Climate change scenarios	
8 (Feb 24)	MIDTERM EXAM	
9 (Mar 3)	SPRING BREAK	
10 (Mar 10)	Disturbance Ecology; Fire Ecology <i>Class activity:</i> Discuss abstracts	Abstract 2 due; Lab Report 2 Due;
11 (Mar 17)	Ecological Succession; Stand Dynamics <i>Class activity:</i> Primary and secondary succession interactive simulations (gameplay)	Quiz 2
MAR 19 (SATURDAY)	LAB 3- Blackwater River SF Visit; Invasive species, fire ecology	
12 (Mar 24)	Biogeochemistry and Nutrient cycling <i>Class activity:</i> Nutrient cycling and budgeting in managed and unmanaged forests (Hubbard Brooks and southern pines experiments)	Lab Report 3 Due; Final Project Part 2 Due
13 (Mar 31)	Landscape Ecology: Terminology, Fragments and Edges and their ecological effects, Landscape ecology questions <i>Class activity:</i> Space Eco-Voyage	Final Project Part 3 Due
14 (Apr 7)	Restoration Ecology: Theories and Practices, SER Primer <i>Class activity:</i> Discuss Final Project progress and feedback	Final Project Part 4 Due
15 (Apr 14)	Miscellaneous Topics; Course revision and wrap-up; Student presentations and Final Project	Final Project Due; Final Project Report Due
16 (April 21)	READING DAY	
17 (April 28)	FINAL EXAM	Final Exam