

Course Overview

This course covers the theories and practices that pertain to managing for forest establishment (natural and artificial regeneration), composition, structure and growth. The principles of sustainable forest management will be covered for a broad array of ecosystem values and social and ecological benefits, including forest products, ecological restoration, wildlife, biodiversity, and ecosystem services. In aggregate, these topics broadly cover the art and science of silviculture.

The course has a lecture and laboratory component. The lectures have a traditional powerpoint structure and will be made available online in CANVAS, with classroom discussion of readings and online material once a week. When online materials are available for review it will be announced in class. The labs will include field trips to discuss different concepts throughout the semester and meet with forestry professionals. The timing of these labs is listed tentatively here but these may be adjusted due to accommodate guest speaker schedules. Student presentations will be assigned both for the lab and the class periods at the end of the semester.

4 Credits 3162c

- Spring 2022
- Asynchronous online lectures / in-person discussions
- Location for discussions – Rm 4822, Building 4800

Pre-Requisites

This course is a senior-level course, intended for students who have already gained a solid understanding of how ecosystems function, as well as a basic understanding of “desired” conditions based on landowner objectives. As such, successful completion of the following coursework is required prior to enrollment:

- FOR3153C *Forest Ecology*, or equivalent (contact instructor to determine sufficiency)

Instructors: Dr. Carissa Wonkka

Office: Rm 4919, Building 4900

Office hours: by appointment via Teams or in person

Email: c.wonkka@ufl.edu

Dr. Jason Vogel

Email: jvogel@ufl.edu

Teaching Assists:

Justin McKeithen

Office: Jay Research Facility

Email: justmck@ufl.edu

Sarah Kincy

Office: Rm 4309, Building 4300

Office hours: by appointment via Teams or in person

Email: kincysarah@ufl.edu

Learning Outcomes

By the end of this course, the student will be able to:

1. Design silvicultural applications for sustaining forest ecosystem goods and services.
 - a. Compare and contrast forest stand management options for different landowner objectives.
 - b. Describe appropriate uses of fire, mechanical, and chemical methods in forestry and their environmental consequences.
 - c. Ability to contrast methods of ensuring tree regeneration, guiding stand development, and using appropriate harvesting methods based on landowner objectives.
2. Demonstrate an ability to acquire, interpret, and present conclusions about silvicultural approaches both orally and in writing.
 - a. Prepare a written/oral paper or report.
3. Apply basic concepts in statistics and sampling methods to develop sampling designs and collect, analyze, and interpret natural resources inventory and monitoring data.
 - a. Collect, analyze, and interpret forest resource data.
4. Demonstrate environmental stewardship and professional and ethical behavior
 - a. Identify practices that adhere to ethical and professional standards of forestry.

Course Logistics

Recorded lectures will be made available on CANVAS during the lecture week. The lectures will be recorded by Dr. Jason Vogel while teaching this course in Gainesville and made available to the Milton section. Dr. Wonkka will conduct weekly in-person discussion sessions with students and conduct three field trips with students in Milton.

- Recorded lectures available weekly, with associated Canvas quizzes/assignments.
- **Wednesdays, 5-6 pm**, class discussion and QA period (Room 4822) * Note this in-person time will be made available for students to discuss lecture materials and lab exercises. *
- 3 Friday field trips (8 am – 5 pm)

Textbook(s) and/or readings: None required but the below are recommended.

- The Practice of Silviculture: Applied Forest Ecology (9th Ed.) D.M. Smith, B.C. Larson, M.J. Kelty, and P.M.S. Ashton. 1997. John Wiley, 537 p. ***This book is recommended for those looking to become professional forest managers and is a great resource for this class. Suggested chapters are noted in the syllabus, but these are not required.***
- Forest Stand Dynamics. Chadwick and Oliver. 1996. McGraw Hill.
- Silviculture: Concepts and Applications. R.D. Nyland. 1996 or 2016. McGraw Hill 633 p.

Free, useful material

- Burns R.M. and B. H. Honkala. 1990. Silvics of North America. U.S.D.A. Forest Service, Agric. Hdbk. 654.

Available online

Silviculture FOR3162C

- The Silvics of North America
https://www.srs.fs.usda.gov/pubs/misc/ag_654/table_of_contents.htm
- Examples of silviculture in Minnesota: <https://silvlib.cfans.umn.edu/>
- We are building a similar example library here at UF

Description of Assessments and Activities

1. **Participation and group work plan (50 pts)** Watch the online lectures and attend in-class discussion.
2. **Describe a forest (45 pts)** This will involve you describing a forest iteratively over a semester, adding details that I will assign and describe to you. Ideally, you know the forest well-enough or can access it so that you can add the details that I will request at each iteration. (3x at 15 pts).
3. **Quizzes (200 pts, 20 pts per quiz x 10 quizzes)** Individually graded. Do as an individual online. These will mostly derive from the week's lectures and lab.
4. **Exams (200 pts, 100pts per exam x 2 exams)**
5. **Laboratory exercises (180 pts or 60 pts each / three reports)**
6. **Development of silvicultural prescription (100 pts)** and an in-person presentation of silvicultural prescriptions (80 pts).

Grades & Grading Scale

Points and percentages for each class activity		
Activity	Points	Percentage
Participation	50	5.8
Describe a forest	45	5.3
Quizzes	200	23.4
Exams		
First	100	11.7
Second	100	11.7
Laboratory Exercises		
1. Stand Struct. & Comp.	60	7.0
2. Site Qual. Eval.	60	7.0
3. Thinning & Regeneration	60	7.0
Silvicultural Prescription		
Presentation	100	11.7
Report	80	9.4
Total points	855	100.0

Grading Scale (%)

A 100% to 94%
A- 93.99% to 90%
B+ 89.99% to 87%
B 86.99% to 84%
B- 83.99% to 80%
C+ 79.99% to 77%
C 76.99% to 74%
C- 73.99% to 70%
D+ 69.99% to 67%
D 66.99% to 64%
D- 63.99% to 61%
E 60.99% to 0%

For information on current UF policies for assigning grade points, see Ugrad

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

Grad <https://catalog.ufl.edu/graduate/regulations/#text>

Attendance

Attendance of the labs/field trips is mandatory unless you have been excused.

Further information on UF attendance policy can be found at

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

Field Trips

In addition to providing practical familiarity with various silvicultural concepts, approaches, and practices, field labs provide opportunities to interact with resource management professionals. While every effort will be made to return students to campus by 5pm on days with field labs, students should recognize that this is **only an estimate**, and schedule their activities accordingly. All trips require professional attire – long pants (jeans or slacks), appropriate shirt, and closed-toe shoes. Any additional required equipment will be provided. Attendance to field labs is mandatory.

Assignments and Quizzes

Assignments and quizzes will be turned in electronically via Canvas. Without an excused absence, students will not have the option to complete quizzes after the established close date/time. No credit will be given for assignments submitted late, with the exception of pre-arranged excused absences. “Late” is defined as arriving after the prescribed date/time. All assignments are to be completed individually – reference materials may be used, but not other students.

Quizzes will be completed on canvas following your online lectures. Quizzes are worth 2.5% of your final grade. Only 8 of the 9 quizzes will count towards your final grade.

Final Project

The intent of the final project is to provide an opportunity for the student to demonstrate a cumulative knowledge of the course material. It is also intended to provide students with experience defending their approach to the landowner or their supervisor (the instructor). The written prescription/documentation will describe, in clear terms, the proposed activities and tools/techniques to be used, including contracts, maps, timing, etc. (as necessary). This documentation will be “presented” in a one-on-one meeting with the instructor and course TAs.

Using Generative AI: I will not police the use of artificial intelligence (AI) to do work in this class, but I recommend that you use it either not-at-all or minimally. (And you should cite AI if you do use it in any of your work.) This is because silviculture is a place-based form of ecosystem management, and so the generalities derived from an AI algorithm can seem non-sensical. There are other issues with AI. In the Canvas page under ‘Week 1’, there is a reading called “AI technologies at the University of Florida”. I would like everyone to read pages 15-17. But the whole document is worth a read if you want to know what UF is thinking on this topic.

Policies and Requirements

Communication Courtesy and Professionalism

Just as in any professional environment, meaningful and constructive dialogue is expected in this class and requires a degree of mutual respect, willingness to listen, and tolerance of opposing points of view. **Respect for individual differences and alternative viewpoints will be maintained in this class at all times.** All members of the class are expected to follow rules of common courtesy,

decency, and civility in all interactions. Failure to do so will not be tolerated and may result in loss of participation points and/or referral to the Dean of Students' Office.

Semester Evaluation Process

Student assessment of instruction is an important part of efforts to improve teaching and learning. At the end of the semester, students are expected to provide feedback on the quality of instruction in this course using a standard set of university and college criteria. 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

UF students are bound by The Honor Pledge which states "We, the members of the University of Florida community, pledge to hold ourselves and our peers to the highest standards of honor and integrity by abiding by the Honor Code. On all work submitted for credit by students 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." The Conduct Code specifies a number of behaviors that are in violation of this code and the possible sanctions. See the UF Conduct Code website for more information. If you have any questions or concerns, please consult with the instructor or TAs in this class.

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). 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:

<https://policy.ufl.edu/regulation/4-040/>

Privacy Statement

Our class sessions may be audio visually recorded for students in the class to refer back and for enrolled students who are unable to attend live. Students who participate with their camera engaged or utilize a profile image are agreeing to have their video or image recorded. If you are unwilling to consent to have your profile or video image recorded, be sure to keep your camera off and do not use a profile image. Likewise, students who un-mute during class and participate orally are agreeing to have their voices recorded. If you are not willing to consent to have your voice recorded during class, you will need to keep your mute button activated and communicate exclusively using the "chat" feature, which allows students to type questions and comments live. The chat will not be recorded or shared. As in all courses, unauthorized recording and unauthorized sharing of recorded materials is prohibited.

In-class recordings

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

education 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 deliver by an 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 presentation 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 guest lecturer during a class session.

Services for Students with Disabilities:

Students with disabilities who experience learning barriers and would like to request academic accommodations should connect with the Disability Resource Center. See the “Get Started With the DRC” webpage on the Disability Resource Center site <https://disability.ufl.edu/get-started/>. It is important for students to share their accommodation letter with their instructor and discuss their access needs, as early as possible in the semester.

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.

Campus Helping Resources

Whole Gator App

The Whole Gator and website and app connects UF students with resources dedicated to supporting overall health and well-being. In addition to many of the resources below it also has strategies to practice self-care. <https://one.ufl.edu/whole-gator/topics>

Health and Wellness

- U Matter, We Care: If you or someone you know is in distress, please contact umatter@ufl.edu, 352-392-1575, or visit U Matter, We Care website to refer or report a concern and a team member will reach out to the student in distress.
- Counseling and Wellness Center: Visit the Counseling and Wellness Center website or call 352-392-1575 for information on crisis services as well as non- crisis services.
- Student Health Care Center: Call 352-392-1161 for 24/7 information to help you find the care you need, or visit the Student Health Care Center website.
- University Police Department: Visit UF Police Department website or call 352-392-1111 (or 9-1-1 for emergencies).
- UF Health Shands Emergency Room / Trauma Center: For immediate medical care call 352-733-0111 or go to the emergency room at 1515 SW Archer Road, Gainesville, FL 32608; Visit the UF Health Emergency Room and Trauma Center website.
- GatorWell Health Promotion Services: For prevention services focused on optimal wellbeing, including Wellness Coaching for Academic Success, visit the GatorWell website or call 352-273-4450.

- Student Success Initiative, <http://studentsuccess.ufl.edu>

Academic Resources

- E-learning technical support: Contact the UF Computing Help Desk at 352-392-4357 or via e-mail at helpdesk@ufl.edu.
- Career Connections Center: Reitz Union Suite 1300, 352-392- 1601. Career assistance and counseling services.
- Library Support: Various ways to receive assistance with respect to using the libraries or finding resources. Call 866-281-6309 or email ask@ufl.libanswers.com for more information.
- Teaching Center: 1317 Turlington Hall, 352-392-2010 or to make an appointment 352- 392-6420. General study skills and tutoring.
- Writing Studio: Daytime (9:30am-3:30pm): 2215 Turlington Hall, 352-846-1138 | Evening (5:00pm-7:00pm): 1545 W University Avenue (Library West, Rm. 339). Help brainstorming, formatting, and writing papers.

Student Complaints

- Academic Complaints: Office of the Ombuds; Visit the Complaint Portal webpage for more information.
- Enrollment Management Complaints (Registrar, Financial Aid, Admissions): View the Student Complaint Procedure webpage for more information.
- Residential Course: <https://www.ombuds.ufl.edu/complaint-portal/>
- Online Course: <https://pfs.tnt.aa.ufl.edu/state-authorization-status/#student-complaint>

Silviculture FOR3162C

Detailed Outline

Week	Content	What is due?
13 January	ONLINE LECTURES: Silviculture as a Part of Forestry, Introduction, Forest measurements and terminology, Public vs. Private forestry, Ecological vs Plantation forestry IN PERSON MEETING – Wednesday 5-6pm	
20 January	ONLINE LECTURES: Stand Development, Forest Composition and Stand Structure IN PERSON MEETING	
27 January	ONLINE LECTURE – Stand structure, shade tolerant/intolerant IN PERSON MEETING	Canvas Quiz 1
Saturday 8 February	FIELD TRIP/ LAB 1 - Stand Structure & Composition	
3 February	ONLINE LECTURE – Soils overview IN PERSON MEETING	Canvas Quiz 2
10 February	ONLINE LECTURE – Tending and Intermediate Cuttings Thinning Concepts, Effects, Methods, and Application Release Cuttings, Cleanings and Liberation Cuttings Herbicide Treatments in Silviculture, Herbicide Fate in the Environment Improvement Cuttings, Salvage and Sanitation Cuttings, Pruning IN PERSON MEETING	Canvas Quiz 3
17 February	ONLINE LECTURE – Reproduction Methods and Silvicultural Systems IN PERSON MEETING	
24 February	ONLINE LECTURE – Forest - Wildlife Interactions IN PERSON MEETING – EXAM!!!	EXAM 1
Friday 28 February	FIELD TRIP/LAB 2– Site Quality, TIMO visit	
3 March	ONLINE LECTURE – Thinning IN PERSON MEETING	Canvas Quiz 4 Lab Report 1
10 March	ONLINE LECTURE – Thinning and regeneration	Canvas Quiz 5 Lab exercise 2
17 March	Spring Break	
24 March	ONLINE LECTURE – Ecology of Regeneration: Seed Biology and Seed Ecology, Fire for release, Tree Improvement and Species Selection IN PERSON MEETING	Describing a forest Canvas Quiz 6
Saturday 29 March	FIELD TRIP/LAB 3 – Thinning & Regeneration	
31 March	ONLINE LECTURE – Artificial Regeneration: Direct Seeding and Planting IN PERSON MEETING	Canvas Quiz 7
7 April	ONLINE LECTURE – Multiple Use Silvicultural Systems and Adaptive Management *** NO IN PERSON MEETING***	Canvas Quiz 8 Lab exercise 3
14 April	ONLINE LECTURE – TBD/makeup IN PERSON MEETING – EXAM!!!	EXAM II

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21 April	ONLINE LECTURE – TBD/makeup IN-PERSON MEETING- Discussion on upcoming prescription/presentation	Silvicultural Plan Canvas Quiz 9
28 April – 2 May	Silvicultural Plan individual presentations	presentation- TBD
