

FOR 3162C Silviculture/FOR 6164 Silviculture Concepts (4 Credits) Course Syllabus- Spring 2022

DESCRIPTION

Silviculture is the 'art and science' of creating and maintaining communities of trees to meet specific objectives on a sustainable basis. This course will cover the principles for establishing, tending, and regenerating stands in the context of various ecological, economic, and social considerations. Students will develop a broad understanding of the silvicultural concepts and applications needed to manage forest stands for a variety of commodity and non-commodity values. Some of the values to be addressed in this course include timber production, wildlife habitat, water quality, recreation, forest health, and ecosystem restoration. Emphasis will be placed on, but not limited to, silvicultural systems of the Southeast.

TIME AND LOCATION

Wednesday, 5:00-8:00 pm, Room 4814
3 mandatory Saturday field labs; 2 field trips

INSTRUCTOR

Dr. Ajay Sharma
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Tel: 850-983-7129
Cell: 850-382-0720
Email: ajay.sharma@ufl.edu

TEACHING ASSISTANT

John Tracy
Office: NRC lab at Jay
Email: john.tracy@ufl.edu

Justin McKeithen
Office: NRC lab at Jay
Email: justmck@ufl.edu

OFFICE HOURS

I have an open-door policy- if I'm in, we can talk. Or, if you want to ensure that I will be available, contact me ahead of time (phone, email or see me after class) to set up an appointment.

REQUIRED TEXTBOOKS

Nyland, R. D. (2016). *Silviculture: concepts and applications*. Waveland Press.
Supplemental material and journal articles will be distributed by the instructors throughout the semester.

SUGGESTED READING AND RESOURCES

Oliver, C. D., and Larson, B. C. (1996). *Forest stand dynamics: updated edition*. John Wiley and sons.
Ashton, M. S., and Kelty, M. J. (2018). *The practice of silviculture: applied forest ecology*. Wiley.
Burns, R. M., and Honkala, B. H. (1990). *Silvics of North America. Volume 1. Conifers*. United States Department of Agriculture (USDA), Forest Service, Agriculture Handbook 654 (available at <https://www.fs.usda.gov/treearch/pubs/1547>)
Burns, R. M., and Honkala, B. H. (1990). *Silvics of North America: Volume 2. Hardwoods*. United States Department of Agriculture (USDA), Forest Service, Agriculture Handbook 654 (available at <https://www.fs.usda.gov/treearch/pubs/1548>)

OTHER COURSE RESOURCES

- com, which can be accessed by UF students for free at <http://www.it.ufl.edu/training/> is a useful resource for help in excel and other common software
- 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>

ELECTRONIC COMMUNICATIONS

Course material will be available through the Canvas e-learning site. It is the responsibility of the student to print off the material in advance of class. On occasion, I may send emails to your UF email address or via canvas messaging regarding course updates. If you aren't doing so already, you should be checking your UF email on a regular basis.

COURSE OBJECTIVES

By the end of the course, students should understand the following concepts and techniques:

- Effects of site and silvics on silvicultural systems
- Natural and artificial regeneration concepts and applications
- Site preparation (mechanical and herbicide treatments, prescribed fire)
- Even-aged silviculture (intermediate treatments and reproduction methods)
- Uneven-aged silviculture
- Silvicultural applications to meet specific management objectives

COURSE GRADING SYSTEM

Quizzes (2)	2	@	25 points	50	10%
Midterm Exam	1	@	100 points	100	20%
Final Exam	1	@	100 points	100	20%
Abstracts	2	@	10	20	4%
Class activities	variable	@	variable	30	6%
Lab Reports	3	@	25 points	75	15%
Field Summaries	2	@	25	50	10%
Final Project Report	1	@	50 points	50	10%
Final Project Presentation	1	@	25 points	25	5%

TOTAL POINTS= 500 (100%)

Letter grades will be assigned as follows: A (93-100), A⁻ (90-92), B⁺ (86-89), B (83-85), B⁻ (80-82), C⁺(76-79), C (73-75), C⁻ (70-72), D⁺(66-69), D (63-65), D⁻ (60-62), E (<60)

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

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

ATTENDANCE AND MAKE-UP WORK

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/ugrad/current/regulations/info/attendance.aspx>.

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, fill in the blanks, true/false, 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, case studies and/or mini labs designed to supplement and reinforce the lecture material and

concepts discussed. Students will work either 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. Class activities in total will constitute 10% of total grade.

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 (up to one page long, typed) that will have the following components

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

E.g. Citation Format:

Fox, T. R., Jokela, E. J., and Allen, H. L. (2007). The development of pine plantation silviculture in the southern United States. *Journal of Forestry* 105(7): 337-347.

List of journals

Annals of Forest Science

Canadian Journal of Forest Research

Forestry

Forests

Forest Science

Journal of forestry

Forest Ecology and Management

New Forests

Midterm and Final Exams

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.

Field Summaries

The week following a field lab, you will turn in a brief (~2-3 page, double-spaced) report summarizing the main silvicultural practices observed during field visit. Your report should include information on where we went, who we met with (when applicable), the silvicultural practices observed, and any insights gained from the experience.

Labs and Reports

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: Abstract, 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. The Abstract (usually written last) will contain a brief summary of the entire lab report.

Final Project Paper/Report

Students will select a topic of their interest, but relevant to the field of silviculture, 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. Students may not use a topic or project that they have completed before as part of another course. The final paper should be minimum 5 pages long + 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 points), Part 2: Literature Review (10 points), Part 3: Introduction and Methods (10 points), Part 4: First Draft (10 points), and Part 5: Final Report Submission (15) points).

Final Project Presentations

Students (group) will have up to 20 minutes for presentation and 5 minutes for questions. Instructor and teaching assistant will grade your presentations.

ONLINE COURSE 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. These evaluations are conducted online at <https://evaluations.ufl.edu>. Evaluations are typically open for students to complete during the last two or three weeks of the semester; students will be notified of the specific times when they are open. Summary results of these assessments are available to students at <https://evaluations.ufl.edu/results>.

ACADEMIC HONESTY:

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 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/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."

SOFTWARE USE:

All faculty, staff and students of the University of Florida 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

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, www.counseling.ufl.edu/cwc/
Counseling Services
Groups and Workshops
Outreach and Consultation
Self-Help Library
Wellness Coaching
- U Matter We Care, www.umatter.ufl.edu/
- Career Resource Center, First Floor JWRU, 392-1601, www.crc.ufl.edu/

STUDENT COMPLAINTS:

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

COURSE OUTLINE (WEEKLY SCHEDULE)
(SUBJECT TO CHANGE BY THE INSTRUCTOR)

Date	Activities	Reading	Assignment Due
Week 1	Introduction to Silviculture and Silvicultural Systems Activity – Prior skills form, student profiles	Ch 1 and 2	
Week 2	Concepts of Regeneration Activity- Regeneration scenarios	Ch. 4 and 5	
Week 3	Nursery management, tree planting, direct seeding Activity: Prep for first Lab	Ch. 6	Abstract 1 Due
Week 3- Sat	Lab 1- Overview of tree planting options at Jay Research Facility; Regeneration and site prep on NIPF land		
Week 4	Guest lecture- Dr. Patrick Minogue (Site preparation) Activity- Site Preparation scenarios	Ch. 7 and 8	Quiz 1 Due
Week 4- Sat	Field Visit 1- BRSF Seed Orchard		
Week 5	Regeneration Methods, Selection Methods	Ch. 9 and 10	Lab 1 Report Due
Week 6	Uneven-aged Regeneration Methods Activity: Uneven-aged management calculations	Ch. 11 and 12	Field Visit 1 summary due
Week 7	Clearcutting and Shelterwood Methods Activity: Uneven-aged management calculations	Ch. 13 and 14	

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Week 7- Sat	Field Visit 2- RMS Sites -Even-aged Silviculture Lab 2- Uneven-aged silviculture (Escambia Experimental Forest)		
Week 8	Early Stand Development, Release Treatments Activity: TBD	Ch. 15 and 16	Final Project Part -1 Due; Field Visit 2 summary due
Week 9	SPRING BREAK!		
Week 10	Thinnings Activity- Computer lab- develop thinning prescriptions	Ch 17, 18, and 19	Abstract 2 Due; Lab 2 Report Due
Week 11	Mid Term Exam		
Sat	Lab 3- Marking a stand for thinning (Jay/Escambia Exp. Forest)		
Week 12	Managing quality in forest stands Activity- TBD	Ch. 20	Quiz 2 Due; Final Project Part -2 Due
Week 13	Silviculture for Forest Health and Protection	Ch. 21	Lab 3 Report Due
Week 14	Improvement, Salvage operations, and xx cuttings	Ch. 22	Final Project Part -3 Due
Week 15	Other Partial cuttings	Ch. 23	Final Project Part -4 Due
Week 16 (4/24)	Student Presentations- Final project Course Review		Final Project Part -5 and Presentation Due
	FINAL EXAM		