Course title and number	Silviculture FOR 3162c/6164 (Meeting times same for both)
Term	Spring 2025
Meeting times and location	M 11:45 AM-12:35 PM; NZ 222 (period 5) We will meet at Austin Cary on most days for class soon after 11:45 am. Field meetings will run into lab time Laboratory M 12:50-4:55 PM; NZ 222 (period 5-9) W 10:40-12:35 pm; Rinker 210 (period 4-5)
Prerequisites	FOR 3153C or PCB 3043, FNR 3131C or Instructor Approval
Course Overview	Designed for students in their junior year or graduate students with little to no prior silviculture coursework.

Instructor for 3162/6164

Name Jason Vogel
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Office hours W 12:40 pm – 1:40 pm

Teaching assistant
Name Valentina Vaney
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Course Description

This course covers the theories and practices that pertain to managing 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 structure with team-based classroom discussion of readings and online material. When online materials are available for review it will be announced in class. The laboratory occasionally has scheduled in-class computer work, and field trips to meet with forestry professionals. Student presentations will be assigned both for the lab and the class periods.

Learning Outcomes/Course Objectives (1-4) and Student Skills (a-c)

At the end of this course, students 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. Interpret, present, and defend 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.

Resource Material

Assigned Reading Material will be found weekly in the Course Module

Suggested Reading (no required text)

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 recommend for those looking to become professional forest managers and is a great resource for this class. Suggested chapters are noted in the Canvas modules but these are not required.***

Forest Stand Dynamics. Chadwick and Oliver. 1996. McGraw Hill.

Silviculture: Concepts and Applications. R.D. Nyland.1996. 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 ON WEB

The Silvics of North America http://www.na.fs.fed.us/spfo/pubs/silvics_manual/table_of_contents.htm

Class Policies

1) Much of your laboratory work will be done with a team of your peers (4 persons/ group). Your work and time together will occur out of my sight and so it is worth revisiting this section of the student honor code:

   Respect for people and property. Students are encouraged both to conduct themselves in a manner that exemplifies respect for all people and property and to adhere to their personal values without imposing those on others.

2) **The class motto for the semester is REMAIN FLEXIBLE! And Be Safe!** Communicate with me about any problems you might have, and I will do the same. Usually, I do not answer emails on the weekend or late in the evening. Never come to a class if you think you might be sick or exposed to someone who has been

sick with a contagious disease. I promise you; an absence will not hurt your grade if you communicate with me.

3) If I am sick, I will try to continue with zoom meetings and will announce on Canvas if that is the case.

4) During field labs, I might be videotaping or taking pictures of the class that I will then share with the students who cannot attend in person. Let me know if you are uncomfortable with being in a picture and I will respect that.

5) Plan to do 6-7 hours of work per week beyond class time if you would like a 'higher' grade.

Grading Policies

1) **Participation, syllabus quiz, and group work plan (50 pts)**. Attend class and labs, take 'ungraded' quizzes, respect your peers.

2) **Describe a forest (30 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) **Online and team-based Quizzes (200 pts).** (20 pts per quiz x 10 quizzes). Do as an individual online and then as a team in class. These will mostly derive from the week's lectures and lab and are intended to gauge your readiness for the course.

4) **Exams (200 pts):** These will be cumulative up to the point of the exam.

4) Laboratory exercises (200 pts or 50 pts each / four reports). Each of you will be assigned a section of a lab report to do. This individual work will be ~70% of your grade, 20% will be a group question, and ~5% will come from your group's assessment of your help in pulling together the whole report. **The 20% assessment on group work cannot decrease your grade. So, if your individual work and peer assessment was an 'A' you will receive an 'A' for that assignment regardless of what your peers had done on the rest of the assignment.**

5) **Development of silvicultural prescription (70 pts)** and an in-person presentation of silvicultural prescriptions **(80 pts).** The prescription is individually graded by section and the presentation is a combined individual and team graded exercise**. Like the above, any group grades cannot lower your grade.** Note that part of your grade will be your participation and grading of other's work, and the grade you receive from your teammates. To receive your final grade on the silvicultural prescription, your group must answer the questions posed to you during the oral presentations and in your text.

Graduate students will form their own group(s) and develop a silvicultural prescription focused on a forest ecosystem or management type that is relevant to their interests. There will be additional readings and more extensive prescription expected.

7) **No "extra" extra credit** will be assigned to individuals. Extra credit during the semester will only be made available to the entire class.

8) **Grades -** The boundaries for each grade (% of total points) are:

A	**93-100%**	**C**	**73-76%**
A-	**90-92%**	**C-**	**70-72%**
B+	**87-89%**	**D+**	**67-69%**
B	**83-86%**	**D**	**63-66%**
B-	**80-82%**	**D-**	**60-62%**
C+	**77 -79%**	**F <60%**	

Lecture Outline

Week (approximate) topic and focus of lectures. Weekly readings will be posted on the first Monday of week of classes and a list for the semester is found at the end of the syllabus.

I. Silviculture as a Part of Forestry
   a) Lectures: Introduction, Forest measurements and terminology, Public vs. Private forestry, Ecological vs Plantation forestry
II. Stand Development, Forest Composition and Stand Structure
   b) Forest composition, stand development, stand structure
III. Land use Ethics and Public sector forest management
   c) Online Video, Ethics lecture
IV. Site Quality Evaluation - Purpose and Methods
   d) Site index, soils, and site quality, and estimating growth
V. Tending and Intermediate Cuttings
   e) Thinning Concepts, Effects, Methods, and Application
   f) Release Cuttings, Cleanings and Liberation Cuttings
   g) Herbicide Treatments in Silviculture, Herbicide Fate in the Environment
   h) Improvement Cuttings, Salvage and Sanitation Cuttings, Pruning
VI. Reproduction Methods and Silvicultural Systems
   i) Clearcutting, Coppice, Seed Tree, and Shelterwood
VII. Forest - Wildlife Interactions
VIII. Tree Nutrition and Forest Fertilization
IX. Regeneration Activities and Fire management
   j) Preparation and Treatment of the Site, Mechanical, Chemical and Prescribed Fire
X. Ecology of Regeneration
   k) Seed Biology and Seed Ecology, Fire for release, Tree Improvement and Species Selection
XI. Artificial Regeneration
   l) Direct Seeding and Planting
XII. Multiple Use Silvicultural Systems and Adaptive Management
   m) Management tradeoffs and public-private overlaps
   n) Diversity, Watershed protection, Profit

Laboratory Notes and Schedule

Most of the field laboratory exercises held will occur at the Austin Cary Forest but also the Millhopper campus. Read each laboratory exercise prior to coming to class. Note: The procedures for all laboratory exercises will be located on the silviculture course Canvas page.

You will also be responsible to come prepared for the elements, which includes wearing long pants and boots, and bringing rain gear when appropriate. **For your protection, hard hats will be worn during all field exercises. Snake leggings can be provided (checked out), or your personal 'snake' boots are recommended. Be mindful of ticks, check thoroughly after field days.** Equipment will be assigned at the beginning of the semester to each person, and to lab groups at the beginning of each class. **Lightning or high winds will cause us to cancel a trip, but light rain or "cold", and we will still go out.**

Laboratory Schedule. Note there will need to be some flexibility around field trips dates because of weather or our cooperator's availability.			
Date	**Topic**	**Location**	**Week**
13-Jan	Forest measurements / Calculations	Campus	1
20-Jan	No lab—MLK Day	---	2
27-Jan	Stand structure / Composition lab	ACF	3
3-Feb	Soils overview	ACF	4
10-Feb	**Vogel gone--SE SAF meeting--TBD**	ACF	5
17-Feb	Site Productivity Lab	ACF	6
24-Feb	Bottomland Hardwood silviculture	ACF	7
3-Mar	Thinning Lab	ACF	8
10-Mar	Regeneration lab	ACF	9
17-Mar	Spring break	----	10
24-Mar	Understory / overstory management	ACF	11
31-Mar	Discuss regeneration and overstory	ACF	12
6-7-Apr	Optional Overnight field trip	Georgia	13
14-Apr	USFS field trip	Ocala National Forest	14
21-April	Silviculture Prescription Assignment	Classroom	15
Finals / Reading Days--There is no final in the class, **but the final written prescription is due during final's week. Please see class Canvas calendar for the exact date.**			

Points and percentages for each class activity		
Activity	**Points**	**Percentage**
Participation	50	6
Describe a forest	30	3.6
Quizzes	200	24.1
Exams		
First	100	12
Second	100	12
Laboratory Exercises[&]		
1. Stand Struct. & Comp.	50	6
2. Site Qual. Eval.	50	6
3. Thinning	50	6
4. Regeneration	50	6
Silvicultural Prescription		
Presentation[†]	70	8.4
Report	80	9.6
Total points	830	100

Americans with Disabilities Act (ADA)

Accommodations for Students with Disabilities:
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.

Resources are available on-campus for students having personal problems or lacking clear career and academic goals which interfere with their academic performance. These resources include:
1. University Counseling Center, 301 Peabody Hall, 392-1575, personal counseling.
2. Student Mental Health, Student Health Care Center, 392-1171,
personal counseling.
3. Sexual Assault/Abuse Recovery Education, Student Health Care Center, 392-1161 x231, assist with sexual assault issues.
4. Career Resource Center, Reitz Union, 392-1601, career development assistance and counseling.

Code of Conduct

All students are expected to abide by the Student Honor Code as described in the Student Handbook (https://sccr.dso.ufl.edu/wp-content/uploads/sites/4/2020/12/Orange-Book-Web-Version-2020.pdf). Students are expected to behave in a professional and courteous manner

towards the instructor and other classmates. This includes turning off AND putting away your cell phone during class.

Plagiarism (http://web.uflib.ufl.edu/msl/subjects/Physics/StudentPlagiarism.html) can result in a reduced grade, failure of the course, and possible dismissal. Plagiarism includes: 1) the direct use of any written material (be careful with internet sites!!) without proper quotations and citation or 2) the submission of a document, in part or wholly authored by someone other than the student. It is up to the professor to evaluate the severity of any infraction and to determine the disciplinary action to be taken. The student should also be aware of his/her legal rights as defined in the Student Honor Code (https://www.dso.ufl.edu/%20sccr/process/student-conduct-honor-code).

No alcohol or illegal drug use is allowed during field excursions or on the overnight trip. Chewing tobacco use should be unobtrusive (no spit cups in vans!), no vaping, and cigarette use is not allowed because of fire risk.