

COURSE DESCRIPTION

Course Title: Forestry 3162 - Silviculture (4 credits)
(Lecture MW (5th period NZ 222; 11:45 AM -12:35 PM) F (5th period NZ 219; laboratory Monday 6th-9th (12:50-4:55 PM; NZ 222)

Prerequisites: FOR 3153C or PCB 3043, FNR 3131C or
Consent of Instructor

Course is designed for: Juniors in Forestry, Natural Resource
Conservation, Wildlife Ecology, Botany

Instructor: Dr. Eric J. Jokela, Professor
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846-0890
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Teaching Assistant(s): Ms. Chelsea Drum; Mr. Praveen Subedi

Primary Course Web Site:
Sakai: FOR3162 & 6164 (logon to eLearning)

Secondary information:
<http://www.sfrc.ufl.edu/Class/for3162c/index.html>
(use gator link ID and password for access)

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. (**Required**).

SILVICULTURE - Laboratory Handbook and Exercises for Forestry 3162 E.J. Jokela; **AVAILABLE ON COURSE WEB SITE.**
<http://www.sfrc.ufl.edu/Class/for3162c/index.html>

Silviculture: Concepts and Applications. R.D. Nyland. 1996. McGraw Hill 633 p. (Supplemental text; not required).

Silvics of North America. Volume 1. Conifers, Volume 2. Hardwoods. 1990 (R.M. Burns and B. H. Honkala, Tech. Coord.) U.S.D.A. - Forest Service, Agric. Hdbk. 654

AVAILABLE ON WEB

http://www.na.fs.fed.us/spfo/pubs/silvics_manual/table_of_contents.htm (Strongly recommended for professional library).

Purpose and Course Learning Objectives:

- 1) Knowledge of fundamental silvicultural and habitat management concepts by promoting an understanding of the theory and practice governing the establishment, treatment and control of forest stands; natural and artificial regeneration systems; intermediate cuttings; natural and intensive silvicultural systems; land use ethics and sustainable management practices;
- 2) To provide field examples and practical experience in the design, prescription, and implementation of applied silvicultural techniques for managing forest stands for commodity and non-commodity objectives;
- 3) Understanding of the issues, trends, and opportunities facing natural resource professionals working in the field of silviculture;
- 4) Familiarity with organizations, companies and agencies that provide career opportunities in silviculture;
- 5) Development of information research and communication skills (written and oral); and
- 6) Awareness of the concepts and meaning of professionalism in the natural resources field.

Methods of Instruction:

- 1) Lectures (3 hours per week) major source of theory and technical information

Note: at times it may be necessary to reschedule our regular lectures to accommodate travel schedules and professional meetings. Please be flexible.

Discussion: To emphasize important topics
Answer questions
Provide information from recent research

- 2) Laboratory (4 hours per week)
Major source of practical and applied information; **ATTENDANCE IS REQUIRED (Lab reports/assignments will not be accepted for unexcused absences)**.

Periods will be spent primarily in the field

- 3) Textbook - **REQUIRED READINGS** - assigned pages in texts and supplemental papers;
- 4) Field trip - **ATTENDANCE IS REQUIRED**; two trips) to observe silvicultural practices and meet with natural resource management professionals. **Plan ahead in your classes for being gone March 18 and March 24-25!!!**

Evaluation:

- 1) Examinations covering lectures, laboratory topics, and assigned readings (Final = 25%; Mid-Term I - 15%; Mid-Term II - 15%). 55%
- 2) Satisfactory completion of all laboratory reports and field trips, including participation and attendance 25%
- 3) Oral presentations and defense of silvicultural prescriptions (SILVIEXAM) 10%
- 4) Four quizzes on lectures, readings, and laboratories Examinations and quizzes must be taken when scheduled, unless approved by instructor. 10%
- 5) Any late work on class assignments will be lowered by 10% for each day it is overdue.
- 6) Grade Assignments - The boundaries for each grade (% of Total points) are:

Percent (%)	Grade
93.4 - 100	A
90.0 - 93.3	A-
86.7 - 89.9	B+
83.4 - 86.6	B
80.0 - 83.3	B-
76.7 - 79.9	C+
73.4 - 76.6	C
70.0 - 73.3	C-
66.7 - 69.9	D+
63.4 - 66.6	D
60.0 - 63.3	D-
Less than 60%	E (Fail)

ACADEMIC HONESTY

Plagiarism will not be tolerated!

The University of Florida requires all members of its community to be honest in all endeavors. Cheating, **plagiarism**, and other acts diminish the process of learning. When students enroll at UF they commit themselves to honesty and integrity. Your instructor fully expects you to adhere to the academic honesty guidelines you signed when you were admitted to UF. As a result of completing the registration form at the University of Florida, every student has signed the following statement: *"I understand the University of Florida expects its students to be honest in all their academic work. I agree to adhere to this commitment to academic honesty and understand that my failure to comply with this commitment may result in disciplinary action up to and including expulsion from the University."* Furthermore, on work submitted for credit by UF students, 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 to be assumed all work will be completed independently unless the assignment is defined as a group project by the professor. Examples of academic dishonesty would include, but not be limited to taking of information, tendering of information, plagiarism, conspiracy and bribery. When you use information from a source, provide a full literature citation. Copying information from other documents (whether they are websites, newspaper articles, or anything) is plagiarism and will not be tolerated. This policy will be vigorously upheld at all times in this course.

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.

UF Counseling Services

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.

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.

Classroom Expectations

1. Be prepared for class. Students who perform well in this class place a high priority on attendance, taking good notes, completing assigned readings and laboratory reports in a timely and accurate fashion, and actively participating by asking questions or providing comments on the topics being discussed.
2. Respect the formal learning environment. This includes arriving and leaving on time, shutting off cell phones and other electronic devices while in class, being open to the opinions and ideas of others, and working effectively and professionally in the field as a member of a multi-person crew.
3. Please feel free to ask questions and for assistance. My office door is always open and I place a high priority on your education and training.

LECTURE OUTLINE

Topic and Reading Assignment

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|--|--------------|
| I. Introduction: Silviculture as a Part of Forestry | Text: 3-19 |
| II. Stand Development, Forest Composition
and Stand Structure | Text: 20-43 |
| III. Site Quality Evaluation - Purpose and Methods | Text:234-247 |
| IV. Landuse Ethics and a Guiding Philosophy Exercise | |

in Natural Resource Management	Video
V. Tending and Intermediate Cuttings	
Release Cuttings	Text:147-157
Cleanings and Liberation Cuttings	Video
Herbicide Treatments in Silviculture	Text:131-147
Herbicide Fate in the Environment	Readings
Thinning Concepts and Thinning Effects	Text:47-57 69-98
Methods and Application of Thinning	Text:99-130 Readings
Low Thinning	
Crown Thinning	
Selection Thinning	
Mechanical Thinning	
Free Thinning	
Improvement Cuttings	
Salvage and Sanitation Cuttings	Text:464-482
Pruning	Text:57-68 Video
VI. Forest - Wildlife Interactions	Text:483-507 Readings
VII. Tree Nutrition and Forest Fertilization	Readings
VIII. Regeneration Activities	
Preparation and Treatment of the Site	
Mechanical, Chemical and Prescribed Fire	Text:195-233 Readings
IX. Ecology of Regeneration	
Seed Biology and Seed Ecology	Text:161-194
Tree Improvement and Species Selection	Text:247-261
X. Artificial Regeneration	Text:264-298
Direct Seeding	

Planting

XII. Reproduction Methods and Silvicultural Systems Text:301-315

Clearcutting Text:316-329

Coppice Text:330-346

Seed Tree and Shelterwood Text:347-363
391-405

Selection Text:364-390
405-417

XIII. Attributes of Professionalism

REQUIRED ADDITIONAL READINGS

See Table of Contents and Silviculture Handbook Vol 2 in lecture room.

TENTATIVE LABORATORY AND EXAMINATION SCHEDULE (SILVICULTURE)

Laboratories may be subject to change due to semester holidays, weather conditions, and industrial coordination. BE FLEXIBLE!

The majority of the laboratory exercises will be held in the field at the Austin Cary Forest. You are **required to read and comprehend each laboratory exercise prior coming to class. Note: the procedures and background for all laboratory exercises can be found on the silviculture course web site. Unannounced quizzes may be administered to ensure that adequate pre-field preparation has occurred prior to conducting the laboratory exercise.** You will also be responsible to come prepared for the elements, which includes: **wearing long pants and boots, and bringing rain gear. For your protection, hard hats and snake leggings will be worn during all field exercises.** Equipment will be assigned at the beginning of the semester to each designated crew. **Each crew is responsible for the use, care, and replacement of all lost equipment used during the laboratories.**

If you are prone to irritations or allergies by mosquitoes, fire-ants, wasps, chiggers, ticks and poisonous plants, it is strongly recommended that you always use repellents (**not** supplied by instructor) and take precautions during and after each laboratory session.

If you are allergic to insect bites, or if you have other medical conditions for which emergency treatment may be required, **it is your responsibility to:** (1) inform the instructors about the condition during the first day of class, (2) tell them where you

keep your medicine; and (3) how to administer emergency treatment should the situation arise.

Lyme disease, which may be contracted through tick bites, is a condition that all natural resource professionals should be knowledgeable of. While not fatal, it can be very painful and even debilitating. Therefore, it is your personal responsibility to wear protective clothing and repellents that will minimize your chances of contracting this disease -- even with these precautions, you should conduct a self-examination for ticks after each field session.

READ EACH LABORATORY EXERCISE PRIOR TO COMING TO LAB!

<u>Semester Week</u>	<u>Class Period Content</u>
Jan. 7 (indoors)	CLASSES BEGIN (Monday) i) Introduction to silviculture ii) Organization of growth in forest trees
Jan. 14 (outdoors)	i) Stand structure exercise ii) Stand structure report assigned
Jan. 21	NO LAB SCHEDULED, (Martin Luther King Holiday)
Jan. 23	i) Lecture/lab/readings quiz I ii) Stand structure report due
Jan. 28 (indoors)	i) Site quality evaluation lecture ii) Video: "A Prophet For All Seasons" - Landuse Ethics
February 4 (outdoors)	i) Site index (standard method, soil-site method, and species comparison curves exercise) ii) Site index lab report assigned
Feb. 11 (outdoor)	i) Pine thinning data collection ii) Thinning effects exercise assigned
Feb. 13	i) Site index report due
Feb. 15	i) Lecture/lab/readings quiz II
Feb. 18 (outdoors)	i) Pine marking and review (stand histograms must be ready!)
Feb. 20	i) Thinning effects report due
Feb. 22	i) Mid-term Exam I (during lecture)

- Feb. 25**
(outdoors) **i) Oral discussion** - Concepts of Thinning (bring completed histograms and tables for discussion)
- Mar. 1** **Turn in Final Histograms, tables, and SVS figures for the slash pine thinning exercise**
- Mar. 2-9 NO CLASSES SCHEDULED, SPRING BREAK!!
- Mar. 11
(outdoors) i) Regeneration survey lab
ii) Regeneration lab report assigned
- March 18
(outdoors) **REQUIRED All-Day Field Trip,**
Plum Creek Timber Co. (Mr. Marshall Jacobson; Industrial Forest Management)
Leave Monday morning from NZ breezeway - 6:30 AM (bring hardhats and leggings)
- March 20** **i) Regeneration Report Due**
- Mar. 22** **i) Lecture/lab/readings quiz III**
- Mar. 24-25**
(outdoors) **i) REQUIRED Over-night Field Trip,**
(Greenwood Plantation - Mr. and Mrs. Leon Neel; Dr. Steve Jack - Joseph Jones Ecological Research Center, Ichauway, Ga; Longleaf Pine Ecology and Management); **leave on Sunday 10:00 A.M.)**
- Mar. 29** **i) Mid-term exam #2 (during lecture)**
- Apr. 1
(outdoors) i) Introduction to SILVIEXAM procedures, stand assignments, and data collection
- Apr. 8, 15
(outdoors) i) Use weeks for SILVIEXAM data collection, stand prescriptions, and to develop Powerpoint Presentations
- Apr. 12** **i) Lecture/lab/readings quiz IV**
- Apr. 22**
(indoors) **i) SILVIEXAM oral presentations (Note: there is no written report)**
- Apr. 24 i) Last day of classes

May 1

Final Exam (Wednesday; 7:30 AM -9:30 AM)

NOTE: FOR OUR FIELD TRIP TO THE JONES ECOLOGICAL RESEARCH CENTER, A NOMINAL \$10.00 CHARGE IS REQUIRED FOR LODGING. YOU WILL BE RESPONSIBLE FOR BRINGING YOUR OWN FOOD, SLEEPING BAG, AND TOWEL.