



**FOREST AND RANGELAND
STEWARDSHIP**
COLORADO STATE UNIVERSITY

**F325: Silviculture
COURSE SYLLABUS**

Department of Forest and
Rangeland Stewardship
Warner College of Natural Resources

	Primary Instructor	Instructor	Instructor	Teaching Assistant
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Affiliation:	Colorado State Forest Service (CSFS)	Colorado State Forest Service (CSFS)	Forest and Rangeland Stewardship (CSU)	Forest and Rangeland Stewardship (CSU)

Term:	Spring 2019
Class Meeting Days:	M/W/F
Class Meeting Hours:	9:00-9:50am
Class Location:	127 Forestry
Course Credits:	3.0

Course Overview

Silviculture is the application of ecological principles to the management of forest stands. This course offers a detailed examination of modern silvicultural theory and methods. Specific topics include (but are not limited to): stand dynamics, density management, analysis of forest production, intermediate treatments, natural and artificial regeneration, and even- and uneven-aged silvicultural systems.

Course Goals and Objectives

Students will demonstrate understanding of how ecological processes influence and are influenced by forest stand structure, composition and productivity, and how silvicultural strategies and tactics are used to manipulate ecological processes to desired ends. Students will demonstrate proficiency using stand assessment tools - such as density management diagrams - and be able to articulate key differences between intermediate and regeneration treatments as well as between several types of even- and uneven-aged silvicultural systems.

Specific objectives for students (from the Society of American Foresters Standards, Procedures, and Guidelines for Accrediting Educational Programs in Professional Forestry):

- Demonstrate the ability to develop and apply silvicultural prescriptions appropriate to management objectives, including methods of establishing and influencing the composition, growth, and quality of forests, and understand the impacts of those prescriptions.
- Demonstrate the ability to analyze the economic, environmental, and social consequences of forest resource management strategies and decisions.

Course Prerequisites

F230, F311, NR220

Required Texts and Materials

- Nyland, R., Kenefic, L., Bohn, K., Stout, S. 2016. Silviculture: Concepts and Applications. Waveland Press, Inc. Long Grove, IL. 680 p. ISBN 147862714X.
- Additional assigned readings will consist of selections from the primary literature as well as excerpts from textbooks. Access to Canvas to view educational videos is required.

Library & Research Help

The CSU Libraries Help Desk provides basic research and technical assistance either in person at Morgan Library or by phone at 970-491-1841. Virtual assistance is also available via the Libraries' Ask Us chat and email services (<http://lib.colostate.edu/help/ask-us>). Jocelyn Boice is the librarian supporting the Forest and Rangeland Stewardship Department and this course. Contact her at: jocelyn.boice@colostate.edu / 970-491-3882.

Important Dates to Remember

Class Begins:	Tuesday, January 22 nd
Last Day to Add/Drop Classes Without an Instructor Override:	Sunday, January 27 th
Registration Closes:	Wednesday, February 6 th
Spring Break:	Saturday-Sunday, March 16 th -24 th
Withdrawal Deadline:	Monday, March 25 th
Last Day to Process a University Withdrawal:	Friday, May 10 th
Final Examination:	7:30-9:30am Tuesday, May 14 th
Grades Posted:	Tuesday, May 21 st

Course Schedule

Topics, content, assignments, exams, quizzes, and/or readings will be announced in class and within this syllabus. These due dates are tentative and can be changed at the discretion of the instructor(s).

Week	Topic
1	Intro
2	Forest ecology
3	Sites and site quality
4	Prescription process and density management
5	Density management
6	Intermediate treatments
7	Intermediate treatments
8	Forest health and climate change
9	Spring break – NO CLASS
10	Invasive species and fire
11	Site preparation
12	Natural and artificial regeneration
13	Even-aged systems
14	Uneven-aged systems
15	Uneven-aged systems
16	Restoration, silvicultural synthesis and review
17	Final Exam: 7:30am – 9:30am May 14 th

Quizzes, Midterms, Assignments, and Final Exam

Topics, content, assignments, exams, quizzes, and/or readings will be announced in class and within this syllabus. These due dates are tentative and can be changed at the discretion of the instructor(s). Please expect additional in-class assignments and homework within this timeline and framework.

Topic	Due Date
A1: Silvics- ecological niche and productivity	Friday, February 1 st
A2: Site Index	Wednesday, February 6 th
Quiz 1	Friday, February 8 th
A3: Density management: SDI	Wednesday, February 13 th
A4: Density management	Monday, February 18 th
Exam 1	Friday, February 22 nd
A5: Density management: Thinning	Wednesday, February 27 th
Quiz 2	Friday, March 8 th
A6: Written critique	Friday, March 15 th
Exam 2	Friday, March 29 th
Exam 2 – take home	Tuesday, April 2 nd
A7: Fuels treatments	Monday, April 8 th
A8: Silvics- forest health and regeneration	Monday, April 15 th
Quiz 3	Friday, April 19 th
A9: Silviculture synthesis (group project)	Wednesday, May 8 th
Final Exam	Tuesday, May 14 th

Basis for Final Grade

Assessment	Percent of Final Grade
Professionalism and participation	5%
Silviculture synthesis project (group)	10%
Quizzes (3)	15%
Homework and in-class assignments	20%
Midterm exams (2)	30%
Final Exam	20%
Total	100%

Grading Scale

Rounding-up occurs at the hundredth decimal. For example, if a student scores 89.91%, a grade of “B+” is awarded. If a student scores 89.95%, a grade of “A-” is awarded.

A+	>98%
A	94-97%
A-	90-93%

B+	87-89%
B	84-86%
B-	80-83%

C+	77-79%
C	74-76%

D	64-73%
F	<63%

Course Policies**Late Work / Make-up Policy:**

Late work is not accepted unless prior arrangements are made OR due to an emergency. Make-up exams and quizzes **MUST** be approved and scheduled ahead of time. This policy may be relaxed at the discretion of the instructor(s) given reasonable justification for the late work or missed exam/quiz (e.g. illness, family emergency). It is strongly encouraged that students communicate with instructors about potential conflicts.

Extra Credit Policy:

Extra credit assignments may be offered at the discretion of the instructor.

What to bring to class:

We will frequently work on exercises in class that will require a scientific calculator (a graphing calculator is not necessary). You may use a scientific calculator app on your phone for in-class exercises, but **under no circumstances will students be permitted to use phones or smart watches during quizzes / tests**. Please bring a “real” calculator for quizzes / tests.

Grades of "Incomplete"

Per university policy, an instructor may assign temporary grade of Incomplete to a student who demonstrates that he or she could not complete the requirements of the course due to circumstances beyond the student's control and not reasonably foreseeable. A student must be passing a course at the time that an Incomplete is requested unless the instructor determines that there are extenuating circumstances to assign an Incomplete to a student who is not passing the course. When an instructor assigns an Incomplete, he or she shall specify in writing using the Department Incomplete Grade Form the requirements the student shall fulfill to complete the course as well as the reasons for granting an Incomplete when the student is not passing the course. The instructor shall retain a copy of this statement in his or her grade records and provide copies to the student and the department head or his or her designee. (Section I.6 of the *Academic Faculty and Administrative Professional Manual*)

Disability Access

Colorado State University is committed to providing reasonable accommodations for all persons with disabilities. Students with disabilities who need accommodations must first contact Resources for Disabled Students before requesting accommodations from the professor. Resources for Disabled Students (RDS; <http://rds.colostate.edu/home>) is located in room 100 of the General Services Building. Their phone is (970) 491-6385 (V/TDD). Students who need accommodations in this course must contact the professor at the beginning of the semester to discuss needed accommodations.

Attendance Policy

Students are expected to attend all classes unless they are unwell or are unable to attend due to a University-sanctioned activity. *Your attendance – or lack of it – will impact your grade.* Students must inform their instructors prior to the anticipated absence and take the initiative to make up missed work in a timely fashion. Instructors must make reasonable efforts to enable students to make up work which must be accomplished under the instructor's supervision (e.g., examinations, laboratories). In the event of a conflict this policy, individuals may appeal using established University procedures.

For the purposes of this regulation, University-sanctioned activities include competitions, events and professional meetings in which students are officially representing the institution. Appropriate sanctioned activities include:

- a. Intercollegiate athletics;
- b. Collegiate club sports and competitions;
- c. Conferences and workshops recognized by the University not related to academics;
- d. Commitments on behalf of the University (ASCSU, band, etc.); and
- e. Professional activities recognized by the University related to academics.

Department heads or their designated representatives must approve sanctioned professional and departmental activities. Other sanctioned activities must be approved by the appropriate program director on record with the Division of Student Affairs offices or the Department of Athletics.

Religious Accommodation

Participation in official University activities, e.g., an out-of-town athletic event, or special religious observances may provide a legitimate reason for an excused absence. The student is responsible for discussing this with the instructor at the beginning of the semester.

Final Exam Policy

Final examination week is part of the regular semester. Student attendance shall be consistent with University policy.

If a student has three or more final examinations (not classes) scheduled for the same day or if conflicts of examination times occur, the student may negotiate a time change with the instructors involved. If the parties involved cannot find a mutually agreeable time, the Registrar's Office indicates which courses must be changed. **Note:** The Registrar's Office must be notified at least one week prior to Final Examination Week to allow instructors time to make appropriate accommodations. It is the student's responsibility to initiate negotiations.

Any student who has a conflict with the examination schedule must inform the instructor as soon as possible before the examination. If an agreement cannot be reached between the instructor and student as to the appropriateness of a make-up examination the student should appeal to the department head.

<http://www.registrar.colostate.edu/final-exams>

Professionalism Policy

Per university policy and classroom etiquette; mobile phones, iPods, smart watches, *etc.* **must be silenced** during all classroom and lab lectures. Those not heeding this rule will be asked to leave the classroom/lab immediately as not to disrupt the learning environment. Please arrive on time for all class meetings. When emailing the instructor or TA, please formally address the recipient and include your full name, CSU ID, and the course number in your email.

Like attendance, professionalism is part of your overall grade. Students who habitually disturb the class by talking, arriving late, fiddling with their phones, *etc.*, and have been warned may suffer a reduction in their final class grade. This class and the instructors will abide by Colorado State University's Principles of Community regarding inclusion, integrity, respect, service, and social justice <https://oeo.colostate.edu/colorado-state-university-principles-of-community/>.

Academic Integrity

The Department of Forest and Rangeland Stewardship takes academic integrity seriously. At minimum, academic integrity means that no one will use another's work as their own. The CSU writing center defines plagiarism this way:

Plagiarism is the unauthorized or unacknowledged use of another person's academic or scholarly work. Done on purpose, it is cheating. Done accidentally, it is no less serious. Regardless of how it occurs, plagiarism is a theft of intellectual property and a violation of an ironclad rule demanding "credit be given where credit is due."

Source: (Writing Guides: Understanding Plagiarism. <http://writing.colostate.edu/guides/guide.cfm?guideid=17>)

If you plagiarize in your work you could lose credit for the plagiarized work, fail the assignment, or fail the course. Each instance of plagiarism, classroom cheating, and other types of academic dishonesty will be addressed according to the principles published in the CSU General Catalog (under "Academic Integrity/Misconduct: <http://catalog.colostate.edu/general-catalog/policies/students-responsibilities/> .)

Of course, academic integrity means more than just avoiding plagiarism. It also involves doing your own reading and studying. It includes regular class attendance, careful consideration of all class materials, and engagement with the class and your fellow students. Academic integrity lies at the core of our common goal: to create an intellectually honest and rigorous community. Because academic integrity, and the personal and social integrity of which academic integrity is an integral part, is so central to our mission as students, teachers, scholars, and citizens, we will ask to you sign the CSU Honor Pledge as part of completing all our major assignments. While you will not be required to sign the honor pledge, we will ask each of you to sign and date the following statement on your papers and exams:

"I have not given, received, or used any unauthorized assistance."

Title IX Information

CSU's Student Sexual Harassment and Violence policy, following national guidance from the Office of Civil Rights, requires that faculty follow CSU policy as a "mandatory reporter" of any personal disclosure of sexual harassment, abuse, and/or violence related experiences or incidents shared with the faculty member in person, via email, and/or in classroom

papers or homework exercises. These disclosures include but are not limited to reports of personal relational abuse, relational/domestic violence, and stalking. While faculty are often able to help students locate appropriate channels of assistance on campus (e.g., see the CSU Health Network link below), disclosure by the student to the faculty member requires that the faculty member inform appropriate CSU channels to help ensure that the student's safety and welfare is being addressed, even if the student requests that the disclosure not be shared.

For counseling support and assistance, please see the CSU Health Network, which includes a variety of counseling services that can be accessed at: <http://www.health.colostate.edu/>. And, the Sexual Assault Victim Assistance Team is a confidential resource for students that does not have a reporting requirement and that can be of great help to students who have experienced sexual assault. The web address is <http://www.wgac.colostate.edu/need-help-support>.

Source: <http://oeo.colostate.edu/title-ix-sexual-assault>

Non-Discrimination Statement

Colorado State University does not discriminate on the basis of race, age, creed, color, religion, national origin or ancestry, sex, gender, disability, veteran status, genetic information, sexual orientation, gender identity or expression, or pregnancy. The University complies with the Civil Rights Act of 1964, as amended, related Executive Orders 11246 and 11375, Title IX of the Education Amendments Act of 1972, Sections 503 and 504 of the Rehabilitation Act of 1973, Section 402 of the Vietnam Era Veterans' Readjustment Assistance Act of 1974, as amended, the Age Discrimination in Employment Act of 1967, as amended, The Pregnancy Discrimination Act of 1978, Americans with Disabilities Act of 1990, the Civil Rights Act of 1991, the ADA Amendments Act of 2008, the Genetic Information Nondiscrimination Act of 2008, and all civil rights laws of the State of Colorado. Accordingly, equal opportunity of employment and admission shall be extended to all persons. The University shall promote equal opportunity and treatment in employment through a positive and continuing affirmative action program for ethnic minorities, women, persons with disabilities, and veterans. The Office of Equal Opportunity is located in 101 Student Services. Source: <http://oeo.colostate.edu/non-discrimination-statement>