



	Instructor	Teaching Assistant
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Office Hours:	M Noon-1pm	R Noon-1pm
	Term:	Fall 2019
	Class Meeting Days:	Lecture: MW Lab: T Work session: F
	Class Meeting Hours:	Lecture / Work session: 11-11:50 am Lab: 1-3:40 pm
	Class Location:	Forestry 127
	Lab Location:	NR 232 E
	Course Credits:	4

Course Overview

This course is designed to function as a capstone learning experience for forestry majors, allowing students to integrate and reflect on coursework from across the forestry curriculum (AUCC 4c). In this class, you will work as part of a team to develop a management plan for a real forest stand in the context of its management environment. Over the course of the semester, you will develop the tools required to create a stand management plan through lectures, labs, assignments and in-class discussions of a broad array of topics, from functioning effectively as a member of a team, to financial analysis of silvicultural alternatives.

The progression of coursework for F 421 is roughly as follows: functioning in a team; review of silvicultural practices in the central Rocky Mountains; assessing forest stands; developing management alternatives; translating direction from forest policy and administration into management objectives and evaluation criteria; financial analysis of alternatives; and preparing professional documents and reports. Assignments and labs throughout the semester will require you to develop proficiency using the Forest Vegetation Simulator silvicultural planning utility and to communicate effectively in writing and in oral presentations. This course builds upon core competencies of writing, speaking, and problem solving in an integrative and complementary way (AUCC 4a).

Course Goals and Objectives

Goals:

Students will develop the skills necessary to evaluate forest stands within specific management contexts, develop appropriate, ethical management plans, communicate key aspects of stand management effectively to other foresters as well as non-specialists, and implement management alternatives and assess their effectiveness over a defined time horizon.

Specific objectives for students (*from the Forest and Rangeland Stewardship Student Learning Outcomes for Forestry students – Appendix A*):

- 1.1 Communicate accurately and effectively, both verbally and in writing.
- 1.2 Demonstrate computer and technological literacy.
- 1.3 Demonstrate critical reasoning skills through the synthesis of multiple pieces of evidence.
- 1.4 Consider diverse perspectives and experiences throughout all aspects of the field of forestry.
- 1.5 Demonstrates professional and ethical behavior, including the ability to accurately describe the Society of American Foresters Code of Ethics.
- 1.6 Work effectively and collaboratively in teams.
- 1.7 Demonstrate effective leadership skills by navigating contrasting viewpoints.
- 3.2 Design and implement comprehensive resource inventories and assessments that meet multiple objectives using appropriate sampling methods and units of measurement.
- 3.3 Quantitatively summarize and statistically analyze inventory and assessment data.
- 3.4 Forecast future ecosystem conditions based on data analysis and interpretation.
- 4.1 Develop and apply silvicultural prescriptions for manipulating the composition, structure, and function of forests to achieve management objectives.
- 4.2 Analyze and evaluate the economic, environmental, and social trade-offs of forest resource management strategies and decisions.
- 4.3 Develop management plans with multiple specific objectives and constraints.
- 4.4 Apply valuation methods and procedures to ecosystem goods and services that include timber and non-timber forest products.

Course Prerequisites

F 230, F 321, F 322 and F 325

Required Texts and Materials

There is no required textbook; however, readings will be posted on RamCT throughout the semester.

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 for in-depth assistance at: jocelyn.boice@colostate.edu / 970-491-3882.

Important Dates to Remember

Dates and assignments are tentative and can be changed at the discretion of the professor.

Field trips:	Sat. Sept. 14 Sat. Oct. 5
Last day to withdraw:	Mon. Oct. 21
Fall break:	Sat. Nov. 23 – Sun. Dec. 1
Final examination:	NA

Schedule of Assignments (there is a detailed schedule at the end of the syllabus – Appendix B)

Labs:

This course includes weekly lab assignments that are designed to help students build the skillset required to prepare a stand management plan. Most labs can be completed in the time allotted provided students review lab materials (e.g. readings, instructional videos) before coming to class.

Assignments:

Assignments include readings, participation in class discussions, and short writing assignments and exercises.

Final Project:

Students will be assigned to groups early in the semester. Each group will complete a final project consisting of development of a management plan for a real forest stand. Final project grades will be assigned to groups based on a written report and oral presentation due in the final week of class. Labs and assignments throughout the semester are intended to help groups progress towards completion of final projects. However, the final project grade is independent of lab and assignment grades.

Basis for Final Grade

Students will be assigned individual grades for labs and assignments except where explicitly noted by the instructor. Final project grades will be assigned to groups. Peer grades will be assigned to individuals based on feedback from members of each student’s final project group.

Assessment	Percent of Final Grade
Labs	40%
Assignments	25%
Final Project:	25%
<i>(Written Report)</i>	<i>(20%)</i>
<i>(Oral Presentation)</i>	<i>(5%)</i>
Peer grade	10%
Total	100%

Grading Scale:

A	B	C	D	F
90-100	80-89	70-79	60-69	<60

Course Policies

Late Work Policy

Late work will be accepted for half credit up for 24 hours beyond the due date. No late work that is more than 24 hours overdue will be accepted.

Extra Credit Policy

Extra credit will not be offered for this course.

Plagiarism Policy for Individual Assignments and Labs

Any student who submits another’s work as their own or who knowingly allows someone else to submit their work as if it were their own will be penalized double the total number of point possible for the assignment or lab.

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. 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.

The instructor will make a reasonable effort to allow students to make up quizzes missed as a result of University-sanctioned activities or illness provided the instructor is informed of the absence prior to the missed class. Students should look to RamCT and/or fellow students for lecture material missed as a result of absences.

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, *etc.* **must be silenced** during all classroom and lab lectures. Those not heeding this rule will be asked to leave the classroom/lab immediately so as to not disrupt the learning environment. Please arrive on time for all class meetings. Students who habitually disturb the class by talking, arriving late, *etc.*, and have been warned may suffer a reduction in their final class grade. When emailing the instructor or TA, please include your full name, CSU ID, and the course number in your email.

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 of our major assignments. While you will not be required to sign the honor pledge, we will ask each of you to write and sign 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>

Appendix A

Student Learning Outcomes (SLOs) for Forestry students in FRS.

These SLOs are aligned with standards set by the Society of American Foresters. You can review THOSE here:

https://www.eforester.org/Main/Certification_Education/Accreditation/Criteria_and_Documents/Main/Accreditation/Criteria%20and%20Documents.aspx?hkey=b337bccf-b946-4038-8667-108442c69e22

SLO1: Professional Skills and Communication

- 1.1 Communicate accurately and effectively, both verbally and in writing.
- 1.2 Demonstrate computer and technological literacy.
- 1.3 Demonstrate critical reasoning skills through the synthesis of multiple pieces of evidence.
- 1.4 Consider diverse perspectives and experiences throughout all aspects of the field of forestry.
- 1.5 Demonstrates professional and ethical behavior, including the ability to accurately describe the SAF Code of Ethics.
- 1.6 Work effectively and collaboratively in teams.
- 1.7 Demonstrate effective leadership skills by navigating contrasting viewpoints.

SLO2: Ecology and Biology

- 2.1 Apply ecological concepts and principles including the structure and function of ecosystems, plant and animal communities, competition, diversity, population dynamics, succession, disturbance, and nutrient cycling across spatial and temporal scales.
- 2.2 Correctly identify dominant and ecologically significant flora and fauna.
- 2.3 Demonstrates a working knowledge of soil properties and processes, hydrology, water quality, and watershed functions.
- 2.4 Demonstrate a working knowledge of tree physiology and the effects of climate, fire, pollutants, moisture, nutrients, genetics, insects and diseases on tree and forest health and productivity.

SLO3: Measurements of Forest Resources

- 3.1 Identify, measure, and map land areas and conduct geospatial analyses.
- 3.2 Design and implement comprehensive resource inventories and assessments that meet multiple objectives using appropriate sampling methods and units of measurement.
- 3.3 Quantitatively summarize and statistically analyze inventory and assessment data.

3.4 Forecast future ecosystem conditions based on data analysis and interpretation.

SLO4: Management of Forest Resources

4.1 Develop and apply silvicultural prescriptions for manipulating the composition, structure, and function of forests to achieve management objectives.

4.2 Analyze and evaluate the economic, environmental, and social trade-offs of forest resource management strategies and decisions.

4.3 Develop management plans with multiple specific objectives and constraints.

4.4 Apply valuation methods and procedures to ecosystem goods and services that include timber and non-timber forest products.

SLO5: Forest Resource Policy and Administration

5.1 Articulate the requirements of major environmental policies and the processes by which policies are developed.

5.2 Accurately describe how policies, including laws and regulations, apply to forest management practices.

5.3 Describe the administration of public and private forestry enterprises, including technical, financial, human, and legal dimensions

Appendix B

Detailed course schedule – subject to change at the instructor’s discretion.

Week	Date	Lecture Topic (tentative)	Lab	Project Deliverables
1	8/26/2019	Course intro / group questionnaire	Teams / Project Intro	
	8/28/2019	Landscape context		
	8/30/2019	Work session		
2	9/2/2019	Labor Day - no class	Collecting and summarizing data	Work plan due: 9/3
	9/4/2019	Management direction		
	9/6/2019	Work session		
3	9/9/2019	Management direction	Field Trip #1: Saturday, September 14	
	9/11/2019	Describing stands		
	9/13/2019	Work session		
4	9/16/2019	Describing stands	FVS structure and data mgmt.	Management direction due: 9/16
	9/18/2019	Evaluation criteria		
	9/20/2019	Work session		
5	9/23/2019	GOEC	Basic FVS outputs / FFE	
	9/25/2019	GOEC		
	9/27/2019	Work session		
6	9/30/2019	GOEC	Field Trip # 2: Saturday, October 5	
	10/2/2019	Regional silv.		
	10/4/2019	Work session		
7	10/7/2019	UEA review	Custom FVS outputs	Stand assessment / desired condition due: 10/7
	10/9/2019	Ethics		
	10/11/2019	Work session		
8	10/14/2019	Ethics	Simulating EA alternatives	
	10/16/2019	Ethics		

	10/18/2019	Work session		
9	10/21/2019	UEA review		EA alternative due: 10/21
	10/23/2019	Regional silv.	Simulating ITS	
	10/25/2019	Work session		
10	10/28/2019	Regional silv.		Simulating GS
	10/30/2019	Regional silv.		
	11/1/2019	Work session		
11	11/4/2019	Managerial finance		UEA alternative due: 11/4
	11/6/2019	Managerial finance	Work session	
	11/8/2019	Work session		
12	11/11/2019	Managerial finance		Managerial Finance
	11/13/2019	Implementation		
	11/15/2019	Work session		
13	11/18/2019	Implementation		Financial analysis / evaluation of alternatives due: 11/18
	11/20/2019	Regional silv.	Marking Guides	
	11/22/2019	Work session		
14	11/25/2019	Fall break - no class		Fall Break - No Lab
	11/27/2019	Fall break - no class		
	11/29/2019	Fall break - no class		
15	12/2/2019	Work session		Work session
	12/4/2019	Work session		
	12/6/2019	Work session		
16	12/9/2019	Student Presentations		Completed Plans due: 12/13
	12/11/2019	Student Presentations	Student Presentations	
	12/13/2019	Student Presentations		