

FORS 347 - MULTIPLE RESOURCE SILVICULTURE

Spring 2016 – TuTh 10:10-11:00 in Liberal Arts 308

INSTRUCTOR

Justin Crotteau – Memorial Greenhouse. 714-875-4046 but use email whenever possible: justin.crotteau@umontana.edu. OFFICE HOURS: Tuesday & Thursday 11am-12pm and other times by appointment. *Schedule an appointment whenever possible.*

TEACHING ASSISTANT

Haley Anderson – Forestry 207; haley1.anderson@umontana.edu; 425-802-2638. OFFICE HOURS: Monday 12-2pm, Thursday 2-4pm, and by appointment.

COURSE DESCRIPTION

From the catalog: “An introduction to the concepts and application of silvicultural techniques to forest ecosystems to meet multiple resource objectives.”

This course deals with the culture of trees in forest stands. It provides an overview of silvicultural principles and practices, and their application to control the establishment, structure, and development of forest stands to satisfy a range of possible objectives (biological, economic, and social) by drawing on an understanding of forest stand dynamics and patterns of stand development. All silviculture is local; practices and examples from other regions will be included, but the primary emphasis is on silvicultural treatments used in western North America.

10 COURSE OBJECTIVES – KNOWLEDGE, SKILLS, AND ABILITIES

1. Be familiar with the components of silvicultural systems and silvicultural prescriptions. Possess the ability to prepare and quantitatively contrast silvicultural alternatives.
2. Be able to characterize stands with qualitative descriptions and quantitative measures of forest stand structure and site quality.
3. Understand concepts of forest stand dynamics and their relation to silvicultural practices. Be familiar with the development patterns of pure and mixed forest stand types.
4. Understand even-age and uneven-age regeneration methods and their variations for pure and mixed stands, and for common Montana forest types.
5. Understand the proper conduct of intermediate (tending) treatments – thinning & pruning – and their effects on stand density, stand growth, and tree quality.
6. Be knowledgeable of reforestation planning and practices. Understand elements of natural regeneration and the regeneration ecology of trees.
7. Understand elements of nursery operations and tree seedling propagation.
8. Be knowledgeable of practices involved in site preparation and vegetation management.

9. Be familiar with diverse applications of silvicultural principles (including forest restoration) and regional variations in practices applied to various North American forest types.
10. Establish/refine skills in preparing professional silvicultural reports and documents.

PREREQUISITE BACKGROUND

FORS 330 (Forest Ecology) or BIOE 370 (General Ecology; Formerly BIOL 340), minimum grade of C-. We apply some of the principles covered in other classes you *POSSIBLY* have taken previously – Tree Biology (FOR 210), Forest Biometrics (FOR 201), Forest Mensuration (FOR 302) – as well as those learned from related work or personal experience, etc.

CLASS MATERIALS

1. Calculator. You must bring a calculator to each class. This is the part of the syllabus where later in the semester I remind you that you were supposed to bring a calculator to each class.
2. Readings: articles and text chapters will be posted to the class FTP site or delivered via email.
3. Non-required Text: *The Practice of Silviculture – Applied Forest Ecology* by Smith, Larson, Kelty and Ashton (1997, Wiley and Sons). Aging, expensive, imperfect, but still useful, and still the standard silviculture text and desk reference.
4. Supplemental references for the ambitious:
5. *Silviculture: Concepts and Applications, 2nd ed.* by Nyland (2009, Waveland Press).
6. *Forest Stand Dynamics (Update Edition)* by Oliver and Larson (1996, Wiley and Sons).
7. For every field lab: 1) a pocket field notebook, preferably with Write-in-the-Rain waterproof paper, 2) pencil, 3) clothes appropriate for the weather.
8. Hardhats and/or other protective gear are at your own discretion; they are available upon request.

ONLINE MATERIALS

Lecture slides, readings, assignments, handouts and other class materials will be made available via the CFC website: [FORS 347 materials](#)

COMMUNICATIONS

Important class-related communications (lab cancellations, weather forecast notices, readings, updates, reminders, etc.) will be sent electronically via email. We will be using your formal UM email address for this communication, so make sure that you either check your UM email regularly or have that email forwarded to another personal account, if you use one.

LABS

1:10 up to 5:00pm, most Tuesdays

Most are field labs that will depart directly from the south side of Memorial Greenhouse. Otherwise Health Sciences 411.

- LABS HELD OUTDOORS – PREPARE FOR OUTDOOR WINTER CONDITIONS!

- Outdoor labs may run up to 5 pm. Let me know well in advance if you have known conflicts.
- Missed Lab? Accommodations will be made only in the case of medical or other family emergencies. If you miss *a* lab, meet with Haley or Justin for information. Make-ups may be negotiable on a case-by-case basis. Opportunities for make-up labs will be provided as/if they arise.

SPECIAL DATES

- Spring Break: April 4-8th
- Crotteau in Portland: April 11-15th
- Final Exam (“Exam 3”; content from final 1/3rd of semester): Wednesday May 11th, 8:00am

EXAMS AND ASSIGNMENTS

Final Grade

90% ≤ A ≤ 100%

80% ≤ B < 90%

70% ≤ C < 80%

60% ≤ D < 70%

F < 60%

LECTURE COMPONENTS – TOTAL = 60%

- 55% Exams (Three; 15-18-22%). *Be sure to have a calculator.* Mixed format -- multiple choice, fill-in, calculations, short answer, etc. No curve except in rare circumstances. *The greatest weighting (22%) gets applied to your **best** exam; lowest weighting (15%) gets applied to your **worst** exam.* NOTE: The 3rd exam is scheduled during the final exam period, but is similar to exams 1 and 2.
- 5% Pop-quizzes (two per teaching module = six total). Very short and mixed format -- multiple choice, fill-in, calculations, short answer, etc. These will primarily address material covered in assigned reading.

LAB COMPONENTS – TOTAL = 40%

- 10% Lab Attendance. 10 labs scheduled (tentative).
- 10% Lab Write-Ups. Short reports summarizing field trips and related readings. Reports (if applicable) are *due at start of following week’s lab*, unless noted otherwise.
- 10% Lab Project 1: Stand Exam & Thinning Rx. GROUP PROJECT (2 students). Professional report summarizing stand metrics and comparing alternative thinning prescriptions. We help you build the components.
- 10% Lab Project 2: Field Practicum. GROUP PROJECT (2 students). “Shark Tank”- themed oral presentation of silvicultural management options for three diverse management objectives. Closed presentations of 15 minutes held during last week of semester.

LATE POLICIES

- For each Lab Write-Up and Lab Project (Stand Exam & Thinning Rx; Field Practicum), lose $\frac{1}{2}$ grade (5%) for each 24-hr period beyond deadline.

UPPER-DIVISION WRITING

This course is one of several approved upper-division writing courses in the forestry major. As such, assignments are designed to provide students with more experience at college level writing and grow in the following areas:

- Use writing to learn and synthesize new concepts
- Formulate and express written opinions and ideas that are developed, logical, and organized
- Compose written documents that are appropriate for a given audience or purpose
- Revise written work based on constructive feedback
- Find, evaluate, and use information effectively and ethically
- Begin to use discipline-specific writing conventions
- Demonstrate appropriate English language usage
- Identify and pursue more sophisticated questions for academic inquiry
- Find, evaluate, analyze, and synthesize information effectively from diverse sources
- Manage multiple perspectives as appropriate
- Recognize the purposes and needs of discipline-specific audiences and adopt the academic voice necessary for the chosen discipline
- Use multiple drafts, revision, and editing in conducting inquiry and preparing written work
- Follow the conventions of citation, documentation, and formal presentation appropriate to that discipline
- Develop competence in information technology and digital literacy

ACADEMIC HONESTY

All students must practice academic honesty. Academic misconduct is subject to an academic penalty by the course instructor and/or a disciplinary sanction by the University. All students need to be familiar with the Student Conduct Code. [READ THE STUDENT CONDUCT CODE](#), particularly Section V (Academic Conduct). Plagiarism and other violations of the Student Conduct Code will definitely affect your grade, and may result in disciplinary proceedings and possible sanctions.

STUDENTS WITH DISABILITIES

The University of Montana assures equal access to instruction through collaboration between students with disabilities, instructors, and Disability Services for Students (DSS). If you think you may have a disability adversely affecting your academic performance, and you have not already registered with DSS, please contact DSS in Lommason 154 or 406.243.2243. I will work with you and DSS to provide an appropriate modification.

GRADING OPTION STATEMENT

This class is offered for traditional letter grade or audit (the credit/no credit option does not apply).

COURSE WITHDRAWAL DEADLINES

Time frame	Description	Deadline
To 15 th instructional day	Students can drop classes on Cyberbear with refund.	Through February 12
16 th to 45 th instructional day	Drop requires form with signatures from instructor and advisor. Registrar's office fee = \$10. No refund. Student will receive 'W' on transcript.	February 13 through March 28
Beginning 46 th instructional day	Drop is allowable <u>only under very limited and unusual circumstances</u> . The following reasons are <u>not</u> considered among those limited and unusual circumstances: doing poorly in the class; deciding you are concerned about how the class grade might affect your GPA; deciding you did not want to take the class after all; etc. If you want to drop the class for those sorts of reasons, <i>make sure you do so by the end of the 45th instructional day of the semester.</i>	Mar 29 through May 6

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Complete this form completely and return as soon as possible (no later than Tuesday, February 2nd)

NAME:

APPROXIMATE YEAR (OR ESTIMATED YEARS TO COMPLETION):

MAJOR/OPTION:

RELEVANT FORESTRY COURSEWORK (check):

- | | |
|--|---|
| <input type="checkbox"/> Soils? | <input type="checkbox"/> Forest Insects & Diseases? |
| <input type="checkbox"/> Tree Biology? | <input type="checkbox"/> Fire Management? |
| <input type="checkbox"/> Dendrology? | <input type="checkbox"/> Timber Harvesting? |
| <input type="checkbox"/> Mensuration? | <input type="checkbox"/> Other: _____ |
| <input type="checkbox"/> Forest Ecology? | <input type="checkbox"/> Other: _____ |
| <input type="checkbox"/> Forest Economics? | <input type="checkbox"/> Other: _____ |

RELEVANT WORK EXPERIENCE:

*** GEOGRAPHIC ORIGINS & MIGRATIONS:**

*** UNIQUE! OR OTHERWISE MEMORABLE ATTRIBUTE:**

*** SELF-PORTRAIT:**