FORS 347 - MULTIPLE RESOURCE SILVICULTURE
Spring 2014
Tu, Th 10:10-11:00 in Forestry 301

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Instructor
Chris Keyes -- Forestry Bldg. 208A (if not in office, check Memorial Greenhouse). 243-6051 but use email whenever possible: christopher.keyes@umontana.edu; OFFICE HOURS: Tuesday & Thursday 11am-12pm and other times by appointment. Schedule an appointment whenever possible.

Teaching Assistant
Justin Crotteau, Memorial Greenhouse; justin.crotteau@umontana.edu; 406-243-5239. OFFICE HOURS: Monday & Friday 11am-12pm, Wednesday 2-3pm, 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 the application of silvicultural treatments to forests of 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.
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**
FOR 330 (Forest Ecology) or BIOL 37 (Formerly BIOL 340; Ecology) or equiv. We apply some of the principles covered in classes you may have taken previously -- Tree Biology (FOR 210), Forest Biometrics (FOR 201), Forest Mensuration (FOR 302), 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 an FTP site or delivered via email.
5) For every field lab: 1) a pocket field notebook with Write-in-the-Rain waterproof paper, 2) pencil, 3) clothes appropriate for the weather.
6) Helmets and/or other protective gear are at your own discretion; available upon request.
Safety equipment needed for work in Memorial Greenhouse will be provided.

**Online Materials**
Lecture slides, readings, assignments, handouts and other class materials will be made available at the CFC website: [ftp://ftp.cfc.umt.edu/Special/AFMP/FORS%20347%20SILVICULTURE/](ftp://ftp.cfc.umt.edu/Special/AFMP/FORS%20347%20SILVICULTURE/)
Just click on the file, download, and save.

**Get In the Loop**
Do Now: Send your preferred email address to Justin for class-related communications (lab cancellations, readings, updates, etc.).

**Labs**
1:10 up to 5:00pm
Most are field labs that will depart directly from the south side of Memorial Greenhouse.
Otherwise Health Science 411 (Tuesday) or Liberal Arts 202 (Thursday).
- 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.
- Lab grade counts for 50% of your overall grade.
- If you need to temporarily switch Tues-Thurs lab, you must inquire/reserve in advance.
- Missed Lab? Accommodations will be made only in the case of medical or other family emergencies. If you miss lab, meet with Justin for information.
- Makeups negotiable. Opportunities for replacements will be announced if/as they arise.

**Special Dates**
- Keyes in Carolina (Forest Biomass Research Project PI Meeting: February 24-28.
- Spring Break: March 29 – April 6.
- Final Exam (“Exam 3”; content = last 3rd of semester): Friday May 16, 8-10am.
Exams and Assignments

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<th>Grade</th>
<th>A</th>
<th>B</th>
<th>C</th>
<th>D</th>
<th>F</th>
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<tr>
<td>%</td>
<td>100</td>
<td>90</td>
<td>80</td>
<td>70</td>
<td>60</td>
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LECTURE COMPONENTS – 50%

- **50% Exams** (Three; 15-15-20%). *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 (20%) gets applied to your best exam.*

LAB COMPONENTS – 50%

- **20% 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.
- **20% Lab Projects (2):**
  - **Stand Exam & Thinning Rx (10%).** INDIVIDUAL PROJECT. Professional report summarizing stand metrics and comparing alternative thinning prescriptions. We help you build the components over three lab periods.
  - **Field Practicum (10%).** GROUP PROJECT (2 students). Oral presentation of silvicultural management options for three diverse management objectives; 3 stands visited during the semester. 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 ½ 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. The Code is available for review online at: http://life.umt.edu/vpsa/student_conduct.php.

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 Lommasson 154 or 406 243 2243. I will work with you and DSS to provide an appropriate accommodation.

Grading Option Statement
This class is offered for traditional letter grade only (the credit/no credit option does not apply).

Course Withdrawal Deadlines

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<tr>
<th>To 15th instructional day</th>
<th>Students can drop classes on Cyberbear</th>
<th>February 14 = last day</th>
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<tr>
<td>16th to 45th instructional day</td>
<td>Drop (grade of ‘W’) requires form with signatures from instructor and advisor. Registrar’s office fee = $10.</td>
<td>February 18 through April 7</td>
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<td>Beginning 46th instructional day</td>
<td>Drop is allowable only under very limited and unusual circumstances. The following reasons are NOT 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 these sorts of reasons, make sure you do so by the end of the 45th instructional day of the semester.</td>
<td>April 8</td>
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NAME:

APPROXIMATE YEAR (OR ESTIMATED YEARS TO COMPLETION):

MAJOR/OPTION:

RELEVANT FORESTRY COURSEWORK (check):
- Soils?
- Tree Biology?
- Dendrology?
- Mensuration?
- Forest Ecology?
- Forest Economics?
- Forest Insects & Diseases?
- Fire Management?
- Timber Harvesting?
- Other:___________________
- Other:___________________
- Other:___________________

RELEVANT WORK EXPERIENCE:

GEOGRAPHIC ORIGINS & MIGRATIONS:

UNIQUE! OR OTHERWISE MEMORABLE ATTRIBUTE:

SELF-PORTRAIT: