FORS 341 Timber Harvesting and Forest Roads  
Spring 2014

Instructor:  **Beth Dodson**  
Office: FOR 201A  
Phone: (406) 243-5542  
Email: elizabeth.dodson@umontana.edu  
Office Hours: Monday 3-5 and by appointment

TA:  Trisha Singh  
Email: trisha.singh@umconnect.umt.edu

Class Times:  
Lecture: MW 10:10-11:00 in LA 106  
Lab:  W 12:10-3:00 in FOR 301 (Section 2)  
M 11:10-2:00 in JRH 203 (Section 3)

Required Text:  
Water Quality BMPs (Best Management Practices) for Montana Forests  
Montana Guide to the Streamside Management Zone Law and Rules  
(these will be distributed the first day in class)  
Other readings as assigned (available in class Moodle)

Course Description:  
An overview of harvesting system capabilities and selection for multiple resource objectives. Fundamentals of forest road management. Best management practices as they apply to forest operations in Montana and the western US.

Course Learning Objectives:  
At the end of this course, students will be able to:  
- Identify harvesting systems common in western North America.  
- Understand basic safety principles applied to harvesting operations.  
- Match stand, terrain, and management goals to appropriate harvesting systems.  
- Have a working knowledge of forest road form and function.  
- Understand how road management decisions impact the safety, cost effectiveness, and environmental performance of forest road systems.  
- Demonstrate improved technical writing skills.  
- FORS 341 is one of the College of Forestry and Conservation’s distributed upper-division writing courses.  
- Approved Writing Course Learning Outcomes  
- 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
Upper-division Writing Requirement in the Major Outcomes
- 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

Course Policies:
- All assignments are due at the BEGINNING of class or lab on the assigned date. Unless otherwise specified, all lab assignments are due one week from when they are initially assigned.
- Unless otherwise specified, all assignments are to be submitted electronically through the course Moodle.
- Late assignments will be penalized 20% of the possible grade per day.
- All work must be neat, legible and complete.
- In order to be afforded accommodation, all absences from lab activities or exams must be arranged PRIOR to the missed class.
- While you are allowed to work with fellow students on individual assignments, all submitted assignments must represent your own individual work.
- Students with disabilities may request reasonable modifications by contacting me. The University of Montana assures equal access to instruction through collaboration between students with disabilities, instructors, and Disability Services for Students (DSS). “Reasonable” means the University permits no fundamental alterations of academic standards or retroactive modifications. 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.
- 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

Important deadlines for changing course options
February 14 Last day to drop classes on Cyberbear. Last day to drop a course without a “W” assigned to the course.
February 18-April 7 Dropping a course requires a drop/add form with instructor and advisor signature. There is a $10 fee at the registrar’s office. The course will appear on your transcript with a grade of “W”.
(45th instructional day)
April 8 At this point in the semester students are only allowed to drop a class under very limited and unusual circumstances. Not doing well 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, or deciding you want to change majors are not among those limited and unusual circumstances. If you want to drop a class for these sorts of reasons, make sure you do so before April 8.

Grading:

<table>
<thead>
<tr>
<th></th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>Midterm exam I:</td>
<td>25%</td>
</tr>
<tr>
<td>Midterm exam II:</td>
<td>25%</td>
</tr>
<tr>
<td>Lab reports and assignments:</td>
<td>50%</td>
</tr>
</tbody>
</table>

Please note, this class is offered for traditional letter grade only, it is not offered under the credit/no credit option. A standard +/- grading scale will be used. Final grade points will be adjusted down (never up) if necessary; a curve will not be applied to individual exams or assignments.

Schedule of Topics:

<table>
<thead>
<tr>
<th>Date</th>
<th>Monday - Lecture</th>
<th>Wednesday - Lecture</th>
<th>Lab</th>
</tr>
</thead>
<tbody>
<tr>
<td>27-Jan</td>
<td>Course introduction, lab safety</td>
<td>Falling and processing</td>
<td>Harvest operations - LEF</td>
</tr>
<tr>
<td>3-Feb</td>
<td>Falling and processing</td>
<td>Falling and processing safety</td>
<td>Harvest operations – TBD</td>
</tr>
<tr>
<td>10-Feb</td>
<td>Environmental impacts of falling and processing</td>
<td>Ground skidding</td>
<td>Harvest operations – TBD</td>
</tr>
<tr>
<td>17-Feb</td>
<td>No class – President’s Day</td>
<td>Ground skidding</td>
<td>Assignment - No lab</td>
</tr>
<tr>
<td>24-Feb</td>
<td>Introduction to engineering soils</td>
<td>Environmental impacts of ground skidding</td>
<td>Harvest operations - TBD</td>
</tr>
<tr>
<td>3-Mar</td>
<td>Line logging</td>
<td>Line and helicopter logging</td>
<td>Harvest operations – TBD</td>
</tr>
<tr>
<td>10-Mar</td>
<td>Environmental impacts of line logging</td>
<td>Line logging safety and contracting</td>
<td>Model Yarder – on campus</td>
</tr>
<tr>
<td>17-Mar</td>
<td>Biomass, mastication, and other operations</td>
<td>Foresters’ Ball event preparation</td>
<td>Foresters’ Ball event participation</td>
</tr>
<tr>
<td>24-Mar</td>
<td>Review: System selection in-class assignment (due in class 3/26)</td>
<td>Midterm I</td>
<td>Harvest operations - TBD</td>
</tr>
<tr>
<td>31-Mar</td>
<td>Spring Break – no classes</td>
<td></td>
<td></td>
</tr>
<tr>
<td>7-Apr</td>
<td>Road function and anatomy</td>
<td>More engineering soils</td>
<td>Road overview</td>
</tr>
<tr>
<td>14-Apr</td>
<td>Road drainage</td>
<td>Road drainage</td>
<td>Road drainage</td>
</tr>
<tr>
<td>21-Apr</td>
<td>Stream crossings</td>
<td>Road surfacing</td>
<td>Stream crossings</td>
</tr>
<tr>
<td>28-Apr</td>
<td>Road management</td>
<td>Road management</td>
<td>Road decommissioning</td>
</tr>
<tr>
<td>5-May</td>
<td>Road contracting</td>
<td>Review/overflow</td>
<td>Road operations/management - TBD</td>
</tr>
<tr>
<td>12-May</td>
<td>10:10-12:10 Midterm II (Friday, May 16)</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
Lab Assignments (20 points each):
For each field lab during the semester, a report of what you saw during the lab will be due by the lab meeting time the following week, submitted via Moodle unless otherwise specified. Four (4) points per day will be subtracted from any late lab report. Absences must be arranged prior to a missed lab.

Each report should be 1-2 pages in length and contain the following information:
- A description of the operation, such as:
  - Landowner and contractor names
  - Equipment used
  - Tasks performed by each piece of equipment or individual
  - Order of operations
- Goal(s) of the operation (i.e. thinning for fuel reduction, salvage logging, road maintenance to reduce environmental impacts, etc.)
- Special considerations and how these considerations are met with the specific operation (i.e. riparian areas, sensitive soils, neighbor concerns, aesthetics, etc.)
- Other observations you deem noteworthy

Lab reports will be graded on both the quality of the writing and the accuracy of the factual information presented. All lab reports may be resubmitted to earn back up to one-half the missed points. Resubmitted reports must be turned in within one week of when they were returned to the student. Please email all resubmissions directly to Trisha Singh at trisha.singh@umconnect.umt.edu.

Foresters’ Ball Event Participation (20 points):
Students will assist with two events that will be part of the 97th Foresters’ Ball. These events are a Careers in Natural Resources Fair on Friday, March 21 from 12-3 pm targeted to high school juniors and seniors and undeclared UM students and is intended to introduce these students to the wide range of career possibilities in the natural resources; and Community Forestry Day on Saturday, March 22 from 10am-2pm targeted to families with school-aged children intended to get them interested in and excited about natural resources. Each of you will sign up for at least one assignment on one of these days. Individual assignments will include demonstrating the model yarder, assisting with participant surveys, assisting presenters with logistical needs, and otherwise interacting with conference attendees. Grades will be based on participation.

In the event you are not able/willing to assist with one of these events, a 10-15 page paper detailing trends in forestry and natural resource higher education within the United States and Canada over the past 30 years and the implications for forest management is due by Monday, March 24.