

FORS 434 Advanced Forest Roads

3 credits, Fall 2016

Instructor and Course Information:

Instructor: Beth Dodson
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Office hours: walk in or by appointment; open-door policy

Class dates: 8/30/2016 – 10/14/2016
Lecture: T/R 8:00-9:20, FOR 106
Lab: F 9:00-3:50, meet at public safety/motor pool unless otherwise specified

Readings/Text:

On Moodle

Course Description:

“The purpose of this course is to help students understand the principles and skills of forest road design and the concepts of forest transportation planning. The course will cover the basic topics of road location, design, construction, and maintenance and provide students with techniques to identify the combination of roads, facilities and transport systems which minimize costs and negative environmental impacts.”

Learning Objectives:

- Understand the principles and application of forest road location
- Understand when detailed road design vs. field location is warranted
- Understand and be able to conduct field surveys for new road location, road upgrade, and road removal
- Understand the principles and application of forest road design, including
 - Horizontal curves
 - Vertical curves
 - Cross-sectional information
 - Hand and computerized (ROADENG) design of forest roads
 - Structural design of stream crossings and other road structures
- Understand the application of Best Management Practices to new and existing roads
- Estimate road construction (and deconstruction) costs
- Understand forest road construction/deconstruction processes

Course Policies:

- All assignments are due at the BEGINNING of class unless otherwise specified. Late assignments will lose 10% of the potential points per day late.
- All work must be neat, legible and complete.
- While you are allowed to work with fellow students on individual assignments, all submitted assignments must represent your own individual work.
- All course communication (announcements, assignments, schedule with due dates) will be posted on the course Moodle, available through the UOnline home page. The course

Moodle can be accessed from any computer with internet access.

- 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.
- 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 [Student Conduct Code](#).

Important dates:

Deadline	Description
To 15 th instructional day (Sept. 19)	Students can drop classes on CyberBear with refund
16 th to 45 th instructional day (Sept 20-Oct 31)	A class drop requires a form with instructor and advisor signature, a \$10 fee from registrar’s office, student will receive a ‘W’ on transcript, no refund.
Beginning 46 th instructional day (Nov 1 – Dec 12)	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, and similar reasons are not among those limited and unusual circumstances. If you want to drop the class for these sorts of reasons, make sure you do so by the end of the 45 th instructional day of the semester. Requests to drop must be signed by the instructor, advisor, and Associate Dean and a \$10 fee applies.

Grading:

Please note, this class is offered for traditional letter grade only; it is not offered under the credit/no credit option. Grades will be based on both individual and group work assigned during the term. Final grades will be based on the percent of possible points earned. A standard +/- grading scale will be used. All efforts will be made to return graded work within one week of when it is turned in. Posted grades (on Moodle) will be updated continuously.

Graded work for this course will include the following:

Problem sets – generally due one week from the date assigned.

Pre-work for field trips – generally assigned the class period prior to field trips.

Field trip problem sets or reaction papers – assigned during the field trips, due by the class period following the field trip.

Final project – this will include written project plans, both draft and final, and an in-field presentation of your plan.

Schedule:

Tuesday lecture	Thursday lecture	Friday lab
8/30 – course intro; engineering soils intro READ: Das Ch. 2	9/1 – engineering soils READ: Das Ch. 3 and 4	9/2 – Road introduction, admin
9/6 – Soil classification; impacts of soil type on road design READ: Das Ch. 5	9/8 – sedimentation; BMPs for roads READ: BMP Roads chapter	9/9 – LEF – Project Road location
9/13 – when is road design necessary; pegging; latitude and departure; leveling READ: Kramer Ch. 2 and 5	9/15 – road location/design elements READ: Kramer Ch. 3	9/16 – LEF – horizontal curves; p-line survey
9/20 – road design; ROADENG	9/22 – road design; ROADENG	9/23 – LEF – Project road location adjustment; p-line survey
9/27 – road/stream crossing options	9/29 culvert design	9/30 – LEF – Project p-line survey
10/4 – fish passage	10/6 – road removal	10/7 – DNRC - Stream crossings READ: Kramer Field Handbook: stream crossing design, installation, and removal READ: Handbook Ch. 3 – 5
10/11 – cost estimating	10/13 - Course de-brief	10/14 – LEF – Final road lay-out FINAL PLANS DUE