

FOR435 **Advanced Timber Harvesting**

Instructor Information:

Instructors: Beth Dodson
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Office hours: open-door policy

Class Date: October 18 – December 16

Class Times: Two 1.5-hour lectures (T/R 8:00-9:20A), FOR 106 unless otherwise arranged
One 7-hour lab (F 9:00A – 3:50P) – Note: we may run long on some days-advanced notice will be given

Required Text: (notes)

Pre-requisite:

FORS 341

Course Descriptions:

The purpose of this course is to provide students with advanced knowledge and skills to apply, critically analyze, and evaluate various timber harvesting systems. This course covers the fundamentals of logging feasibility and cost analyses of various timber harvesting systems including the characteristics and performance of ground vehicles, cable and aerial systems; cost factors and cost analysis procedures; safety issues; and environmental impacts of harvesting systems.

The laboratory components of this course will provide students with basic working knowledge to conduct logging feasibility and cost analyses of various timber harvesting systems. Students will also learn how to use some of the major software packages that can be used in analyzing various harvesting systems.

Course Learning Objectives:

Ground-based harvesting system

- Understand the fundamentals of engineering mechanics (statics)
- Understand the characteristics and performance of ground vehicles
- Understand cost factors and learn cost analysis procedures
- Understand safety issues on ground-based harvesting operations
- Understand environmental impacts of ground-based harvesting systems
- Understand factors important in the layout and administration of a ground-based harvesting operation

Cable and aerial logging system

- Understand the engineering properties of wire rope
- Learn the procedures of payload analysis
- Learn how to use computer software for payload analysis (SkylineXL)
- Understand cost factors and learn cost analysis procedures
- Understand safety issues on cable and aerial logging operations
- Understand environmental impacts of cable logging system
- Understand factors important in the layout and administration of cable and aerial logging systems

Grading:

Please note, this class is offered for traditional letter grade only; it is not offered under the credit/no credit option.

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| • Harvest design project | 20% |
| • Lab exercises and homework | <u>80%</u> |
| Total | 100% |

In order for students to receive graduate credit for the course, a 5-10 page term paper addressing a current

management issue, focusing on the use of forest operations to solve a complex natural resource problem, is required. The paper will be of publishable quality, including an introduction, literature review, presentation of the issue, discussion of the significance for management, conclusion, and references to literature cited.

Tentative course schedule

Note: only those labs in bold type have been confirmed; all others are tentative and subject to change. When possible, lecture material will also shift to match lab content.

Week	Week of	Tuesday	Thursday	Friday (Lab)
1	17-Oct	Course Introduction Introduction to payload analysis	Kalispell Timber Tour – no lecture, depart from motor pool at 10 am, stay in Kalispell overnight	Weyerhaeuser mill tour (Kalispell)
2	24-Oct	Chain and Board Production Costing/	SkylineXL	“Barnstormin’ Farm Bill listening session” 8:30-10:30A, GBB 106 Active line machine operation - Arlie
3	31-Oct	Production tracking	NO CLASS	Active forest operation – production estimation
4	7-Nov	NO CLASS – ELECTION DAY	Costing – fixed costs	NO CLASS – VETERANS DAY
5	14-Nov	Costing – variable costs	Sale appraisal	BMP audit
6	21-Nov	Bid evaluation	NO CLASS - THANKSGIVING	NO CLASS - THANKSGIVING
7	28-Nov	Timber sale administration/ Supply chain management	Wood Supply Game	Active forest operation
8	5-Dec	Layout of line sales	Layout of ground-based sales	Layout project
9	12-Dec	Final Layout Project, due by 10:10 am Friday, December 16	no class – final exams	Final Layout Project, due by 10:10 am Friday, December 16

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 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.