

Harvesting Management
FE 471/571
Spring 2009

Instructor: Loren Kellogg
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Office Hours: MF 9:30 – 10:30

Course Prerequisites: FE 371, FE 470

Co-Instructors/Teaching Assistants: Jeff Wimer and Matt Bliss

Website: http://www.cof.orst.edu/cof/teach/fe4_571/

Course Format: Two 1-hour lectures; MF 11:00 – 11:50 AM
One 4-hour lab; Tue. or Thur. 1:00 – 5:00 PM

Required Text: FE 471/571 Class Notes (available from OSU Bookstore)
Oregon OSHA – Forestry Activities (website)
http://www.orosha.org/standards/div_7.html

Course Goals

Forest Engineers and Forest Operation Managers will have the knowledge and skills for harvesting management by being able to verify harvesting assessment plans and carry out field layout for implementation of skyline, helicopter and ground-skidding or forwarding logging operations. In addition, they will be able to demonstrate an understanding of practical logging skills and relate these skills to forest engineering tasks of logging layout, operations monitoring, and the design of training programs for forest workers.

Course Learning Objectives

1. Be able to match harvesting equipment and systems to silvicultural treatments for managing stand density and commercial thinning.
2. Understand practical and safe logging skills and be able to relate these skills to harvest unit layout, and designing training programs for forest workers.
3. Be able to verify harvesting assessment plans and complete field layout for implementation of logging operations.
4. Know characteristics of the harvesting operations work force, and be able to describe the process for developing a designed training program in the forest activities work sector.

Course Policies

1. All assignments are due by the beginning of either the lecture or lab period on the date assigned unless specifically stated otherwise.
2. Late assignments will be penalized 20% per day.
3. All work must be neat, legible, and complete. All figures, drawings, and tables must be titled.
4. Work that does not conform to the above requirements and the designated format (see below for assignments, reports and projects) will lose points or may not be accepted for a grade.
5. There will be no make up exams.
6. The use/operation of equipment (vehicles, logging equipment and tools) must be done in a safe manner and follow the instructor(s) supervision during all classes and field activities.
7. Any requests for deviations in the course policies, schedule, or deadlines must be made in writing to the instructor. These requests should be made in the form of a business letter that clearly states and defends your request.

Assignment Format (e.g. Skyline Payload Analysis)

All assignments in this course, except where specifically noted must follow standard engineering format and adhere to the form below:

- The course number, assignment title, date submitted, student name and sheet of sheets will be on the first sheet of every assignment.
- A summary sheet with the answers for all questions will be on the first sheet.
- Sheets after the first sheet will, as a minimum, be identified by the student's name and sheet of sheets.
- All sheets will be on 8 ½ x 11 paper with smooth edges.
- All sheets will be fastened together by staple in the upper left corner.
- Computer generated output such as LOGGERPC must be neatly organized and all answers clearly identified (e.g. underlined and labeled).

Lab Reports and Project Reports Format

Specific requirements and writing guidelines will be handed out for the series of lab reports and projects in this course. All reports must be presented in the above assignment format and should be organized to include the following sections:

Introduction

Explains the relevance of the topic and provides a brief background.

Methods/Procedures

Describes the process that you went through in gathering information and a statement of appropriate assumptions.

Results and Discussion

This is the main section of the report and it contains the information that you gathered to meet the specific objectives for each lab or project report.

Conclusion

Provides a brief summary of the importance of your results.

Grading

Final grades for the course will be based on performance in the following areas:

(Note: Several assignments will require a minimum score of 70% to pass the course; grading items may also change slightly with course schedule.)

Item	Total Points
Harvesting operation lab #1 Quiz	15
Felling/cable yarding training & safety reports: 5 @ 20 pts. each	100
Ground skidding layout (group project)	50
Skyline layout (group project)	100
Lecture/discussion assignments; 2 @ 10 and 25 points each	35
2 Midterm Exams @ 50 pts. each	100
Comprehensive Final Exam	125
TOTAL	525

Course letter grades will be based on the following; plus and minus grades will be given where appropriate. Depending upon class performance, the curve may be shifted downward.

<u>Letter Grade</u>	<u>Percent of Total</u>
A	90 - 100
B	80 - 89
C	70 - 79
D	60 - 69
F	<60

FE 571 Credit

Each student taking Harvesting Management for **graduate credit** is required to complete an individual student project (100 points) in addition to the requirements described above under "Grading". The student must submit a project proposal to the instructor for approval by the end of the second week of the term.

Week 1	<p>Lecture: March 30 & April 3</p> <p>Lab: March 31 April 2</p> <p>References:</p>	<ul style="list-style-type: none"> • Course Introduction and Overview • Matching Harvesting Systems to Silvicultural Treatments; Commercial Thinning • Skyline Thinning Field Trip (Quiz) <p><i>Trends in commercial thinning in western Washington</i> By J.F. McNeel and K. Dood</p> <p><i>Using a single-grip harvester and skyline yarding system in a forest health improvement application</i> By L.D. Kellogg and C.G. Brown</p> <p>US Forest Service, Pacific Northwest Region, Logging Equipment Specification and Cost Guide</p>
Week 2	<p>Lecture: April 6 & 10</p> <p>Lab: April 7 or 9</p>	<ul style="list-style-type: none"> • Ground Skidding Operational Planning Process and Field Layout • Skyline Logging Operational Planning Process (#1) Overview <p>Field: Ground Skidding Harvest Unit Recon and Layout (Group Project Report)</p>
Week 3	<p>Lecture: April 13 & 17</p> <p>Lab: April 14 or 16</p> <p>Required Reading:</p>	<ul style="list-style-type: none"> • Logging Safety Videos, Assignment & Discussion • Forest Operations Safety Regulations and Worker Training <p>Group Work on Ground Skidding Layout Project</p> <p><u>Class Notes:</u> (1) Structural changes needed to improve logging safety (2) Safety in logging operations <u>Oregon OSHA</u></p>
Week 4	<p>Lecture: April 20 & 24</p> <p>Lab: April 21 or 23</p>	<ul style="list-style-type: none"> • Designed Training and Logging Field Labs • Forest Operations Workforce <p>Felling and Cable Yarding Field Lab #1</p>

Week 7	Lecture: May 11 & 15 Lab: May 12 or 14	Skyline Payload Analysis (LOGGERPC) for Multispan, Running and Live Skyline Systems; Assignment Field: Skyline Unit Operational Planning and Layout #2 Landing design and skyline corridor layout
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Week 8	Lecture: May 18 & 22 Lab: May 19 or 21	<ul style="list-style-type: none"> • Guest Speaker • Midterm Exam II (Friday May 22) Felling and Cable Yarding Field Lab #3
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Week 9	Lecture: May 25 & 29 Lab: May 26 or 28	<ul style="list-style-type: none"> • Memorial Day Holiday (Monday May 25) • Skyline Logging Operational Planning Process (#3) Summary and Guidelines for Presentations Felling and Cable Yarding Field Lab #4
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Week 10	Lecture: June 1 & 5 Lab: June 2 or 4 Required Reading:	<ul style="list-style-type: none"> • Helicopter logging productivity factors and harvest planning • Course Review Field Presentation and Written Report Due on Skyline Logging Planning Project <u>Class Notes:</u> Timber Sale Preparation for Helicopter Logging <u>Oregon OSHA</u>
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