

FSC 401 Timber Harvesting - Fall 2008

Course Objectives and Outcomes

FSC 401 is a 3 credit course (2 hrs of lecture & 3 hrs of lab per week) designed to examine and analyze industrial timber harvesting practices in the United States and Canada with specific emphasis on Maine. By the end of the course the student should be able to:

- explain basic harvesting systems, the components and functions of these systems, and how to select the appropriate system based on silvicultural prescriptions;
- assess the performance of a timber harvesting operation using work study techniques and production analysis;
- develop an operational plan for timber harvesting with consideration for safety, block layout, equipment requirements, and silvicultural needs; and
- perform basic economic analyses on timber harvesting operations.

Location and Time

Lecture: Mon & Wed 10:00 – 10:50 (am) Nutting 257
Lab: Tues 1:10 – 4:00 (pm) Nutting 102

Faculty Information

Name: Dr. Jeffrey Benjamin
Phone: 581-2727
Email: First Class or Jeff_Benjamin@umenfa.maine.edu
Office Hours: Open door policy Mon – Wed or by appointment (247 Nutting Hall).

Grading and Course Expectations

Criteria

Reports and assignments will be graded based on a concisely written problem definition (10%), complete problem solution (including graphs, charts and figures as appropriate) (60%), proper referencing of external sources (10%), grammar (10%), and overall professional appearance (10%).

Grade Components

50%	Labs and Assignments (5 @ 10%)
	1. Block Layout Planning
	2. Block Layout Operational Map
	3. Block Layout Operational Cruise
	4. Production Analysis
	5. Cost and Revenue Prediction
	6. Linear Programming
20%	Exams (2 @ 10%)
<u>30%</u>	Final Exam
100%	

Expectations beyond classroom

Students are expected to seek out additional references from materials discussed in class / field trips to support solutions to course problems.

Instructional Materials and Methods

There is no required textbook for this course. Handouts will be provided where appropriate, but course material will primarily be delivered through class lectures (presentation or workshop format) and lab activities. The following is a recommended reading list to supplement course material:

- *Adler, M.J. and Van Doren, C. 1972. How to Read a Book. Touchstone New York, NY. ISBN 0-671-21209-5.
- *Adler, M.J. 1983. How to Speak / How to Listen. Touchstone New York, NY. ISBN 0-684-84647-0
- Buongiorno, J. and Gilless, J.K. 2003. Decision Methods in Forest Resource Management. Academic Press San Diego California. ISBN 0-12-141360-8.
- Conway, S. 1982. Logging Practices and Principles of Timber Harvesting. Miller Freeman Publications.
- *Goldratt, E.M. and Cox, J. 2004. The Goal: A Process of Ongoing Improvement. The North River Press Great Barrington, MA. ISBN 0-88427-178-1.
- Lussier, L.J. 1961. Planning and Control of Logging Operations. The Forest Research Foundation – Université Laval. Quebec, Canada.
- MacDonald, A.J. 1999. Harvesting Systems and Equipment in British Columbia. Forest Engineering Research Institute of Canada. FERIC Handbook No. HB-12.
- Matthews, D.M. 1942. Cost Control in the Logging Industry. McGraw-Hill Book Company. New York.
- *Maxwell, John. 2000. Failing Forward: Turning Mistakes into Stepping Stones for Success. Thomas Nelson Inc, Nashville Tennessee.
- Moesswilde, M. 2004. Best Management Practices for Forestry: Protecting Maine's Water Quality. Department of Conservation – Maine Forest Service.
- Myers, F.E. and Stewart, J.R. 2002. Motion and Time Study for Lean Manufacturing – 3rd Edition. Prentice Hall Upper Saddle River, NJ. ISBN 0-13-031670-9.
- Stenzel, G., Walbridge, T.A., and Pearce, J.K. 1985. Logging and Pulpwood Production – 2nd Edition. John Wiley and Sons Inc. ISBN 0-471-86822-1.

Course Policies

Attendance

Course material will primarily be delivered through class lectures (presentation or workshop format) and lab activities, so *attendance is mandatory*. The success of field trips and many lab exercises is dependant on the volunteer time of local contractors and University Forest staff. Out of courtesy to our hosts, we will not keep them waiting unless under extraordinary circumstances. *Therefore, departure times for field trips and labs are firm*. If you miss the bus or van, you will have to make arrangements to make up the lab on your own time. Please note that appropriate courtesy in class is expected at all times to ensure that others concentrating on lecture and lab material are not disturbed.

Assignments and Reports

Assignments and reports are to be handed in *before the start of class* on the date due. No late work will be accepted unless with a medical excuse or a strong reason pre-arranged with the instructor. All work will be assigned with sufficient time for completion based on expectations and value.

Course Folder

A course folder has been established on First Class for lecture and lab notes, assignments, and additional reference material.

Exams

Make-up exams will be given only for a medical excuse or a strong reason pre-arranged with the instructor. Missed exams count as zero points.

Cell Phones

To extend professional courtesy to fellow students and guest speakers, *turn cell phones and other related electronic devices off* while in class or on field trips.

Academic Honesty

Academic dishonesty includes cheating, plagiarism and all forms of misrepresentation in academic work, and is unacceptable at The University of Maine. As stated in the University of Maine's online undergraduate "Student Handbook," plagiarism (the submission of another's work without appropriate attribution) and cheating are violations of The University of Maine Student Conduct Code. An instructor who has probable cause or reason to believe a student has cheated may act upon such evidence, and should report the case to the supervising faculty member or the Department Chair for appropriate action.

Students with Disabilities

If you have a disability for which you may be requesting an accommodation, please contact the Director of Disabilities Services, 121 East Annex, 581-2319, as early as possible in the semester.

Class and Lab Schedule

Topic	Week	Day	Lecture	Lab Activity	
Principles of Timber Harvesting	1	1-Sep	W	Forest Operations Toolbox	No Lab
	2	8-Sep	M	The Overall Process	Block Layout - "Planning"
			W	Block Layout	
	3	15-Sep	M	Safety	Safety - University Forests
			W	Guest Lecture	
	4	22-Sep	M	Best Management Practices	Block Layout - "Field Reconnaissance"
			W	Forestry Equipment	
	5	29-Sep	M	Harvest Systems	Block Layout - "Boundary and Trails"
			W	Biomass Harvesting	
	6	6-Oct	M	Horse Logging	Horse Logging
			W	Exam #1	
	7	13-Oct	M	No Class - Fall Break	No Lab - Fall Break
			W	Measures of Production	
	8	20-Oct	M	Operations Cruise	Block Layout - "Boundary and Trails"
			W	Work Study Methods in Forestry	
9	27-Oct	M	Work Study Methods in Forestry	Block Layout - "Operational Cruise"	
		W	Process Flow Charts		
10	3-Nov	M	Production Analysis	Field Trip TBA	
		W	Production Analysis		
11	10-Nov	M	Time and Motion Study	Production Analysis	
		W	Hourly Rate Determination		
12	17-Nov	M	Hourly Rate Determination	Cost and Revenue Prediction	
		W	Equipment Purchase Decisions		
13	24-Nov	M	Exam #2	Field Trip TBA	
		W	Harvest Scheduling		
14	1-Dec	M	Harvest Scheduling	Linear Programming	
		W	Harvest Scheduling		
15	8-Dec	M	Harvest Scheduling	Course Review	
		W	Course Review		