

FRST 262 Forest Harvest Planning

Spring Course Outline

Location & Times: TBA

Instructors: TBA

Description

This course examines a variety of considerations associated with timber harvesting operations. Topics include: skyline logging systems; cost control of forest operations using budgets, interest rate calculations, machine rates, equipment replacement, and inventory control; logging contracts and timber development planning; and design strategies for retention, ecosystem-based management and environmental issues.

Scope and Credit

This course is designed for students in their second year of the Forest Resources Technology Program.

Prerequisite: You must have successfully completed Forestry 261 to enroll in Forestry 262. **Credits: 2**



Course Format

This course has self-directed learning as well as lectures and outdoor labs. The class is in one 4-hour time block per week, which usually consists of a lecture followed by a lab exercise. During the second half of the course, considerable time will be spent in the field; therefore, students should be physically fit and have the proper attire for late winter and early spring weather conditions. [2:0:2]

Supplies

Supplies: You are required to have the following items:

- [Calculator \(SHARP EL-531W\) or equivalent](#)
- [Six-ring field binder and waterproof notepaper](#)
- [Compass with adjustable declination](#)
- [Biodegradable flagging tape](#)
- [Personal first aid kit.](#)

Field Labs: Personal protective equipment (caulk boots, hard hat, hi-viz vest, safety eyewear or wire mesh face shield, safety whistle), first aid kit and appropriate clothing (raingear and gloves, as needed) are required for field labs.

Learning Outcomes

Upon successful completion of the course, students will be able to:

1. Assess the potential hazards of working in the forest; demonstrate safe work procedures for carrying out tasks, and use appropriate personal protective equipment requirements and describe emergency procedures.
2. Define and use technical terms applicable to forest harvesting in conversation with peers and in technical reports.
3. Describe the operational characteristics, limitations, and environmental advantages of skyline-logging systems and evaluate a hillside for harvesting using a simple graphical method.
4. Using the Gantt chart method, prepare a project plan including work schedules, and equipment needs for developing and harvesting a cutblock.
5. Derive the hourly operating costs of harvesting equipment and demonstrate an understanding of Ownership and Operating costs.
6. By applying the accounting principles of compounding and discounting, describe how fluctuating interest rates affect forestry business decisions.
7. Explain the physical processes and management strategies associated with site degradation, soil disturbance and gully stability.
8. Explain the site, stand and treatment hazards associated with windthrow and how they contribute to windthrow risk. Conduct a windthrow field assessment.
9. Demonstrate planning and layout techniques for harvesting to meet the objectives of the retention silvicultural system and ecosystem-based management.

In addition to the **subject-specific** learning outcomes listed above, specific **program** objectives will be covered. Upon successful completion of this course students will have furthered their ability to:

1. Use math skills appropriate to the field of forestry, including: algebraic equations, calculations, geometry, precision, proportions and statistics.
2. Manage and use digital information effectively, including spreadsheets.
3. Use technology appropriate to the field of forestry.
4. Think creatively and flexibly to solve problems.
5. Resolve issues and conflicts when managing for multiple forest resource values.



Field Safety

You are responsible for practicing safe work practices in the field. This includes proper check-in/check-out procedures as described by your instructors. You will not be permitted to participate in outdoor lab exercises without proper Personal Protective Equipment, field clothing and a personal first aid kit. For field trips to public locations (e.g., parks), you will be advised of the required field gear.

Outdoor labs will be cancelled only when extreme weather compromises safety or the learning objectives (e.g. excessive wind or snowfall).



Course Communications

All information regarding the course will be distributed through the course "D2L" website through VIU Learn at: <http://learn.viu.ca>

You will be automatically enrolled in the FRST262 website with your course registration. You are responsible for checking the website at least weekly for notices and assignments. If your email has changed since registration, make sure that you provide an up-to-date version.

Evaluation (sample)

Here is the breakdown of how your grade in the course will be determined (subject to minor adjustments):

| | |
|-----------------|-----|
| Lab Assignments | 50% |
| Exam 1 | 20% |
| Exam 2 | 20% |
| Professionalism | 10% |

Grades will be calculated using the VIU standard grade scale (see D2L [Forestry Portal](#)).

Assignments

The format and other specifications for lab assignments will be provided in a written description. Occasionally, an update or correction is required. You are responsible for noting and following any changes described in class.

The date and time when lab reports are due will be given in the written description. Unless you have a valid excuse (e.g., illness), all work must be handed in when due in order to receive full marks. No marks will be awarded for late assignments if marked work has already been returned to the rest of the class.

Academic Policies

For further information on exam policies, missing tests, assignment format standards, late assignments, instructor assessment and academic misconduct (e.g., plagiarism), please refer to the D2L [Forestry Portal](#).

Useful References

Here some useful references covering some of the course topics:

- Pearson, Prentice Hall, 2007. [Construction Methods and Management](#). 7th Ed., S. W. Nunnally.
- Windthrow Course. [Internet]. 2002. Victoria: BC Ministry of Forests, Forest Practices Branch; [cited 2013 Jan]. Available from: <http://www.for.gov.bc.ca/hfp/training/00015/>
- BC Ministry of Forests. 1999. Hazard assessment keys for evaluating site sensitivity to soil degrading processes guidebook. 2nd Ed., Version 2.1. Forest Practices Branch, Victoria, BC, 18p. Available from: <https://www.for.gov.bc.ca/tasb/legsregs/fpc/fpcguide/HAZARD/HazardAssessKeys-web.pdf>

These and other forest mensuration texts are available in the VIU Library.



Course Schedule (sample)

| Week | Lecture | Lab |
|------|-------------------------------------|------------------------------|
| 1 | Course introduction | Skyline payload analysis |
| 2 | Basic Financial Principles | Compounding / Discounting |
| 3 | Basic Financial Principles | Investment Decisions |
| 4 | Equipment Costs | Equipment Costs |
| 5 | Harvesting Cost Estimates | Harvesting Cost Estimates |
| 6 | Exam 1 | Project Management - Gantt |
| 7 | Woodlot Project - field time | Woodlot Project - field time |
| 8 | NO CLASS - Study Days | NO CLASS - Study Days |
| 9 | Retention systems | Retention system layout |
| 10 | Ecosystem Based Management | EBM harvest planning |
| 11 | Slope stability - gullies | Gully assessment |
| 12 | Site degradation & soil disturbance | Soil hazard assessment |
| 13 | Windthrow | Windthrow assessment |
| 14 | IRM Plan Presentations | (FRST242) |
| | Finals exam study day | Exam 2 (Date TBA) |