



VANCOUVER ISLAND  
UNIVERSITY

**Forest Resources Technology Program**  
**FRST 261**  
**Forest Harvesting Systems**  
**Course Outline**

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Term: Fall  
Lecture/Lab: TBA

Instructor: TBA

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**CALENDAR DESCRIPTION**

This course is an introduction to various forest harvesting systems including the study of economic, safety, and environmental implications of harvest system choices. Compatibility of harvesting systems and silviculture systems will be discussed. (1:0:3)

**SCOPE AND CREDIT**

Forestry 261 is designed for second-year students in the Forest Resources Technology program. Successful completion of first-year forestry or the instructor's permission is required for enrolment.

**COURSE FORMAT**

The typical week will be one hour of lecture time and three hours lab time. **Labs are often outdoors so please come prepared for fieldwork every day.**

**TEXTS & SUPPLIES**

Course Textbooks:

1. Cable Yarding Systems Handbook, WCB, 1993  
([http://www.worksafebc.com/publications/health\\_and\\_safety/by\\_topic/assets/pdf/cable\\_yarding.pdf](http://www.worksafebc.com/publications/health_and_safety/by_topic/assets/pdf/cable_yarding.pdf))
2. Harvesting Systems and Equipment in British Columbia, A.J. MacDonald, 1999  
(<http://www.for.gov.bc.ca/hfd/pubs/docs/sil/sil468.htm>)
3. Terminology of Ground-Based Mechanized Logging in the Pacific Northwest, Kellogg, Bettinger, Studier, 1993  
(<http://ir.library.oregonstate.edu/jspui/bitstream/1957/7615/1/RC1.pdf>)

### Optional References:

- Manual for Roads and Transportation, Vol. 1, D.C. Holmes, 1989, BCIT
- Logging Practices, S. Conway, 1986
- Sustainable Ecosystem Management in Clayoquot Sound: Planning and Practices ( <http://www.llbc.leg.bc.ca/public/pubdocs/bcdocs/211539/clay545.pdf> )
- Logging Systems Guide, United States Department of Agriculture- Forest Service Alaska Region, July 1979

### **Equipment and Supplies:**

- Six-ring notebook with Duksbak or Rite in the Rain Metric Field paper
- 2H Pencil
- Graph paper
- Compass with adjustable declination
- Douglas protractor
- Post Scale
- Biodegradable flagging tape
- personal first aid kit

### **Field Safety, Personal Protective Equipment and Clothing:**

- Caulk boots
- High visibility hard hat
- High visibility Cruiser's vest
- Safety whistle
- Rain gear and gloves

Students without proper field safety equipment may be dismissed from field lab sessions.

If you finish a field assignment early and want to leave the area you must notify the instructor. This policy will ensure that no injured person is left in the woods and that searches are not carried out for students that have gone home.

### **LEARNING OUTCOMES:**

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

1. Assess the potential hazards of working in the forest, demonstrate safe work procedures for carrying out tasks, use appropriate personal protective equipment and describe emergency procedures.
2. Describe primary workers' rights and responsibilities.

3. Describe the key requirements and procedures including:
  - a. *requirements for First Aid supplies, equipment and services*
  - b. *Emergency Response Procedures*
  - c. *process for testing communications systems*
  - d. *safety procedures for radio controlled roads*
  - e. *Protocol for working alone*
4. Define and use technical terms applicable to forest harvesting in conversation with peers and in technical reports.
5. Describe the historical development and economic importance of forest harvesting.
6. Evaluate physical constraints, environmental issues, costs and safety issues to prescribe appropriate falling and bucking techniques.
7. Evaluate physical constraints, environmental issues, costs and safety issues to prescribe appropriate forest harvesting systems.
8. Evaluate a specific site on the University Woodlot for cable logging by identifying suitable landings, running and plotting deflection lines, and selecting a suitable falling boundary location.
9. Describe three cable yarding systems. Evaluate the merits of each system given a harvesting scenario.
10. Plan a cable harvesting operation from a contour map, ensuring optimum yarding distances and deflection.

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

1. Work collaboratively with others and analyse information and think critically: In conjunction with FRST 271, prepare a detailed harvesting plan and accompanying report for a site on the University Woodlot. Students will evaluate site conditions, select the most appropriate harvesting system, identify the operational limits of the equipment and consolidate the information in a forest harvesting plan that considers physical, environmental, legal and economic constraints.

2. Read, comprehend and summarize material appropriate to the field of forestry – specifically write one short article describing a harvesting system and its physical, environmental, and cost constraints.

## EVALUATION

### Grade Scale:

(%)	Letter	Grade Point
90-100	A+	4.33
85-89	A	4.00
80-84	A-	3.67
76-79	B+	3.33
72-75	B	3.00
68-71	B-	2.67
64-67	C+	2.33
60-63	C	2.00
55-59	C-	1.67
50-54	D	1.00
0-49	F	0.00

### Sample Grade Breakout:

Lab Assignments	40%
Midterm Exams	20%
Quizzes	10%
Final Group Project	20%
Professionalism	10%

- All assignments and lab reports, unless otherwise stated, are due at the **start** of the following lab period.
- A penalty of 10% per day applies to late assignments.
- No marks will be awarded for assignments if marked work has already been returned to the rest of the class.
- Work that is substantially below standard for grammar or spelling will be returned unmarked for rewriting. Late penalties will still apply.
- Unless I specifically state **in writing** that group submissions are acceptable, they are not. Although data is often gathered in groups, each student must hand in their own individual assignment containing your thoughts and work.

## ACADEMIC POLICIES

For information on exam policies, missing tests, assignment format standards, late assignments, instructor assessment and academic misconduct (e.g., plagiarism), please refer to the VIU Forestry Department website:

<https://www2.viu.ca/forestry/Current-Students/VIU-Policies/index.asp>

## SAMPLE SCHEDULE

<b>Week :</b>	<b>Lecture</b>	<b>Lab</b>
1	FRST 234	FRST 234
2	Introduction to Course	Safety, OHS Regulation
3	History of Logging in B.C.	Introduction to Logging, Felling and Bucking.
4	Interior Field Trip	Interior Field Trip
5	Skidding and Hoe Forwarding	Skidding and Hoe Forwarding
6	Cable Systems – GY, HL, Sky	Cable Systems – GY, HL, Sky
7	Midterm (1.5 hr.)	Spare
8	Field Trip Cable Yarding	Field Trip Cable Yarding
9	Deflection Lines, Falling Boundary	Field Deflection Lines
10	Log Loading, Landings	Log Loading, Landings
11	Midterm (1.5 hr.)	Spare
12	Field Project	Field Project
13	Field Project	Field Project