



VANCOUVER ISLAND
UNIVERSITY

SCIENCE & TECHNOLOGY

FORESTRY

FRST 211 – Forest Biometrics Course Outline

Term: FALL

Instructor: TBA

SUMMARY DESCRIPTION

Forest Biometrics is an examination of measurement and sampling procedures for assessing volume of and value of timber resources. Topics include: measurement of logging residue and standing timber, use of call grade / net factor procedures, and advanced timber sampling techniques.

SCOPE AND CREDIT

FRST 211 is a four hour per week course is designed for students in the second year of the Vancouver Island University Forest Resources Technology program. FRST 112 is a course prerequisite. (2 lecture, 0 seminar, 2 lab)

COURSE FORMAT

The course curriculum typically consists of lectures on mensuration theory followed by practical application through indoor and outdoor labs and assignments, and field exams.

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, and use appropriate personal protective equipment requirements and describe emergency procedures.
2. Define and use the technical terms applicable to residue and waste, call grading and net factoring (CGNF), and inventory cruising in conversation with peers and in technical reports.
3. Describe provincial government residue & waste assessment policy.

4. Prepare a Residue & Waste Block Survey Plan.
5. Classify, measure and record data according to Forest Service standards for post-harvest residue and waste material.
6. Compare the relative advantages of CGNF vs. the traditional path and quality calls for determining the quality and net volume of standing timber.
7. Use CGNF procedures to determine quality and net volume of standing timber by grading and factoring trees in a second growth stand.
8. Design a timber appraisal cruise plan and describe the general conditions and sampling error requirements, as per section 2 of the Cruise Manual.
9. Compare the differences between appraisal and inventory cruising (e.g. sampling objective, procedures and appropriate use of the data).
10. Create an accurate inventory map with polygon labels and stand attributes for an assigned area of the woodlot.

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. Use mathematics appropriate to the field of forestry.
2. Read, comprehend and summarize material appropriate to the field of forestry.
3. Use technology (hardware & software) appropriate to the field of forestry.

TEXTS & SUPPLIES

Required Text(s):

Cruising Manual is available on the Internet at:

<http://www.for.gov.bc.ca/hva/manuals/cruising.htm>.

Call Grade Net Factor Standards and Procedures are available in Appendix 10:

<http://www.for.gov.bc.ca/hva/manuals/CGNF.htm>

Provincial Logging Residue and Waste Measurement Procedures Manual is available on the Internet at: <http://www.for.gov.bc.ca/hva/manuals/rwprocedures.htm>

Woodlot Licence Inventory Manual is available on the Internet at:

<http://www.for.gov.bc.ca/dsi/Woodlots/InvMan.pdf>

Optional Textbooks:

A Sampler of Inventory Topics, Iles, Kim, 2003, Kim Iles and Associates Ltd.

Ministry of Forests Lands, and Natural Resource Operations Scaling Manual is available on the Internet at: <http://www.for.gov.bc.ca/hva/manuals/scaling.htm>

Forestry Handbook for British Columbia, Susan Watts and Lynne Tolland, 2005; University of British Columbia, Forestry Undergraduate Society

Supplies and Equipment:

Caulk boots, hard hat and cruiser's vest are required for labs in the woods. A pocket scale, field notebook and paper, MoFR survey cards, calculator and compass will also be required. Other field gear will be supplied as needed.

EVALUATION (sample)

Grade Breakout:

Labs and Assignments	40%
Midterms (2)	20%
Quizzes	5%
Final Exam	30%
Professionalism	5%

Instructor Assessment is based on student attendance, promptness, effort, behavior, class participation and ability to work independently.

In this course field data is gathered by teams of students. Once the data is collected any further questions, data processing or completion of assignments must be completed individually. Each student must hand in their own completed labs.

Grade Conversion:

<u>Grade</u>	<u>% Range</u>
A+	90+
A	85-89
A-	80-84
B+	76-79
B	72-75
B-	68-71
C+	64-67
C	60-63
C-	55-59
D	50-54
F	0-49

Academic Policies:

Refer to <https://www2.viu.ca/forestry/Current-Students/VIU-Policies/index.asp> for Forestry Department Policies.

SAMPLE SCHEDULE
FIELD LABS WILL TAKE PLACE RAIN OR SHINE.

Week	Topics
1	Labour Day – no class
2	Safety Review, Residue and Waste policy and Planning Procedures
3	Residue and Waste Sampling Plans, Quick Stats Review, Waste Pieces –on paper
4	Residue and Waste Field Lab
5	Interior Field Trip
6	Timber Cruising Review. Introduction to Call Grade Net Factor (CGNF)
7	Thanksgiving Holiday
9	Midterm Exam, Net Factoring – classroom and short lab next to log cabin
10	Net Factoring - in the woodlot (10 trees each)
11	Call Grade rules and procedures. classroom and short lab next to log cabin
12	Remembrance Day
13	Call Grade Net Factor - in the woodlot (10 trees each).
14	Forest Inventory (possible conflict with other department duties, may assign a project)
15	Forest Inventory Field Project