

SAULT COLLEGE OF APPLIED ARTS & TECHNOLOGY
SAULT STE. MARIE, ONTARIO

COURSE OUTLINE

Course Title: FOREST MENSURATION III

Code No.: FOR 203-4


Program: FORESTRY TECHNICIAN

Semester: THREE

Date: SEPTEMBER, 1989

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New: _____ Revision: X

APPROVED: 
Chairperson

July 25 1989
Date

CALENDAR DESCRIPTION

FOREST MENSURATION III

FOR 203-4

COURSE NAME

COURSE NUMBER

PHILOSOPHY/GOALS: To provide the student with a firm foundation in forest sampling.

Prerequisite - FOR 109

METHOD OF ASSESSMENT: Student assessment is based on:

	<u>Weight</u>
1. Theory Tests	40%
2. Projects and Assignments	
1. Point-Sample Project	} 60%
2. Forest inventory project	
2. Lab assignments	

	100%

Projects and assignments are assessed on the basis of accuracy and neatness. They are to be handed in on or before an established "due date". Otherwise, marks will be deducted up to a maximum of 10% per day.

A+ = 90-100%	Consistently Outstanding
A = 80-89%	Outstanding Achievement
B = 75-79%	Consistently Above Average Achievement
C = 60-74%	Satisfactory or Acceptable Achievement
R = < 60%	Repeat - Objectives of the course not achieved and course must be repeated

COURSE OUTLINE AND OBJECTIVES

FOREST MENSURATION

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EQUIPMENT AND SUPPLIES:

Point-Sampling Manual (Manual of Forest Measurements and
Instruments)
Scale rules
Protractor
Calculator
Computation paper
Graph paper
Hard hat
Rain gear
Boots, etc.
Silva Ranger Compass
Stereoscope
Marking pencils
Drawing pens
Lettering templates

COURSE OUTLINE AND OBJECTIVES

FOREST MENSURATION

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REF. NO.	TOPIC NO.	OBJECTIVES
2967.04	1	<p><u>SAMPLING IN FORESTRY</u></p> <p>(i) <u>Point-Sampling</u></p> <p>State two major differences between fixed-area and variable-area sampling units.</p> <p>State the advantages and disadvantages of point-sampling.</p> <p>Describe the procedure to be taken when a borderline tree is encountered.</p> <p>Calculate the Limiting Distance for a tree of given diameter.</p> <p>State three factors which determine if a tree is to be included in the sample.</p> <p>Define Basal Area Factor (BAF) and develop the general equation.</p> <p>Calculate BAF values.</p> <p>Given, the ratio between the tree diameter and its distance from the point, determine the Plot Radius Factor (PRF).</p> <p>Given, the BAF of a wedge prism, determine its PRF.</p> <p>Define the term Tree Factor (TF) and compute TF values for fixed-area and variable-area sample units.</p> <p>Name the sources of error in point-sampling.</p> <p>Explain how to correct for sloping ground when using the wedge prism. Explain how this correction works.</p>

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		Given, a map and a set of instructions, locate sample points in the field and determine, by the use of a wedge prism, an accurate tree count by species.
		Measure sample trees and obtain an average stand age and height.
		Compile field data (diameter and species) into stand and stock tables using the Tree Factor Concept.
		Using the field data (tree count, stand age, and height) and Norman Yield Tables (Plonski), determine: site class actual basal area per hectare stocking factor actual volume & CAI per hectare
		Name four methods for measuring site.
		State the limitations of site index.
2967.04		ii) <u>Types of Forest Inventories</u> Name and describe two basic types of forest inventories used in Canada.
2967.04		iii) <u>Forest Inventory Design</u> List and describe the general and specific factors to consider in the design of a forest inventory. Show examples for township subdivision by section or lots and concessions. Show the relationship between true, magnetic and grid north on NTS maps.

COURSE OUTLINE AND OBJECTIVES

FOREST MENSURATION

REF NO.

TOPIC NO.

OBJECTIVES

Given the description of a forest property to:

- a) prepare a detailed plan for an inventory of the forest resources on the property
- b) apply sampling techniques in the field
- c) compile the field data, prepare a forest stand map and write a report on the method and results of the inventory

2967.06

2.

THE MEASUREMENT OF TREE VOLUME

List four methods for determining tree volume.

Identify the geometric solids which make up a tree stem.

Determine the volume of a tree from formulae and graphical estimation.

Name the variables associated with local and standard volume tables.

List the steps involved in constructing a local volume table from:

- felled trees
- a standard volume table

Determine an average form class for a local species from regression equations.

Derive coded volumes for a Cumulative Volume Tally Sheet