


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

COURSE OUTLINE

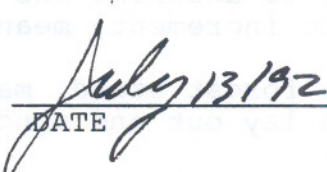


COURSE TITLE: FOREST MENSURATION II
CODE NO.: FOR239-4 **SEMESTER:** TWO
PROGRAM: FORESTRY TECHNICIAN
AUTHOR: WARREN ROBERTSON/GERRY BERMAN
DATE: JULY 1992 **PREVIOUS OUTLINE DATED:** DECEMBER 1991

APPROVED:


DEAN, SCHOOL OF SCIENCES &
NATURAL RESOURCES

DATE


July 13/1992

FOREST MENSURATION II

FOR239-4

COURSE NAME

COURSE NUMBER

TOTAL CREDIT HOURS: 64

PREREQUISITE(S): FOR119-4 Forest Mensuration I

I. PHILOSOPHY/GOALS:

This course includes log and wood identification, an introduction to tree grading. It reviews tree measurement instruments and techniques and then concentrates on forest resource sampling, which also has numerous non-timber applications. It covers timber cruising field work and compilations using strip, plot, and point sampling procedures in detail; as well as introducing hand held microcomputer and global positioning systems technologies. The course also examines the design of a resource inventory, the measurement of tree growth and age and briefly covers the calculation of log and tree volumes.

II. STUDENT PERFORMANCE OBJECTIVES:

Upon successful completion of this course the student will, to a cumulative minimum 60% accuracy:

1. Be able to identify 22 species of logs.
2. Be able to identify basic tree defects and separate standing trees into 3 grades.
3. Be able to identify standing trees in winter.
4. Be able to identify 15 species of sawn wood.
5. Be able to describe and calculate current annual increment, periodic increment, mean annual increment and construct growth curves.
6. Given a forest stand, map and the percentage of cruise required, be able to lay out and conduct a strip, plot, or point sample timber cruise.
7. Be able to compile sample area, percent sample, volume/ha and total volumes from timber cruise field data.
8. Be able to construct stand and stock tables.
9. BE able to calculate data from a wedge prism cruise utilizing Normal Yield Tables.
10. Be able to describe the theory of point sampling.
11. Be able to describe the steps involved in the design of a forestry inventory.
12. Be able to calculate log and tree volumes using geometric formulae.
13. Be able to conduct a strip cruise to determine wildlife values.

FOREST MENSURATION II

FOR239-4

COURSE NAME

COURSE NUMBER

III. TOPICS TO BE COVERED:

NO. OF WEEKS

Introduction

1

Tree Height and Diameter Review

Unit 1 - Log Identification

2

- features used for identification
- wood planes
- tree growth
- hardwood log identification
- softwood log identification
- miscellaneous species log identification

Unit 2 - The Measurement of Tree Growth and Age

2

- variables that express tree growth
- methods for measuring past growth and predicting future growth
- the time period during which growth occurred
- growth curves
- tree growth as a percentage value
- graphs

Unit 3 - Forest Resource Sampling

3.5

- types of sampling units
- plot shape
- plot size
- field layout
- volume tables
- types of volume
- timber cruise compilations
- sample intensity

Unit 4 - Hand Held Microcomputers

1

- introduction
- microcomputer accessories
- general notes
- applications
- programme inventory list

FOREST MENSURATION II

FOR239-4

COURSE NAME

COURSE NUMBER

Unit 5 - Global Positioning Systems

1

- what is GPS?
- how GPS works

Unit 6 - Tree Grading and Defects

1

- problems in quantifying tree quality
- guidelines for choosing trees for wildlife
- how the grading system works
- sample spreadsheet and instructions
- sample tally and compilation

Unit 7 - Point Sampling

3.5

- angle gauges
- source of error in point sampling
- advantages and disadvantages of point sampling
- the theory of point sampling
- stand and stock tables
- normal yield tables
- how to use the normal yield tables

Unit 8 - The Design of a Forest Inventory

1

- detailed planning
- statistical analysis
- checklist for preparing inventory plans

Unit 9 - The Measurement of Tree Volume

1

- introduction
- mathematical formulas

IV. EVALUATION METHODS:

Practical tests and Assignments

- 50%

Written Tests

- 50%

100%

FOREST MENSURATION II

FOR239-4

COURSE NAME

COURSE NUMBER

V. REQUIRED STUDENT RESOURCES:

Point sampling Lab Manual

VI. SPECIAL NOTES:

Students with special needs (e.g. physical limitations, visual impairments, hearing impairments, learning disabilities) are encouraged to discuss required accommodations confidentially with the instructor.

Your instructor reserves the right to modify the course as he/she deems necessary to meet the needs of students.

