

SAULT COLLEGE OF APPLIED ARTS & TECHNOLOGY

SAULT STE. MARIE, ONTARIO



COURSE OUTLINE

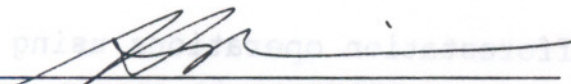
**COURSE TITLE:** INTRODUCTION TO FOREST MANAGEMENT

**COURSE NO.:** FOR230-4 **SEMESTER:** III

**PROGRAM:** FORESTRY TECHNICIAN, INTEGRATED RESOURCE MANAGEMENT  
TECHNOLOGY, FISH AND WILDLIFE TECHNOLOGY

**INSTRUCTOR:** MARK HARVEY

**DATE:** MAY, 1993 **PREVIOUS OUTLINE DATED:** NEW

**APPROVED:**   
DEAN, SCHOOL OF SCIENCES &  
NATURAL RESOURCES

May 18/93  
DATE

INTRODUCTION TO  
FOREST MANAGEMENT

FOR 230-4

COURSE NAME

COURSE NUMBER

TOTAL CREDIT HOURS:

PREREQUISITE(S):

I. PHILOSOPHY/GOALS:

This course will provide students with a broad spectrum, holistic view of forest management as it should be practiced in Ontario. Emphasis will be placed on investigating integrated forest management techniques that will accommodate a wide variety of forest values and forest users. Students will develop an appreciation for forest management techniques that accommodate the forest industry while enhancing sustainability, biodiversity and environmentally responsible land stewardship.

As much as possible local activities in the forest will be used to illustrate superior and inferior management practices. A practical hands on approach to learning will be provided.

II. STUDENT PERFORMANCE OBJECTIVES:

Upon successful completion of this course the student will be able to:

1. Describe the management system alternatives for managing tolerant hardwoods.
2. Describe the management system alternatives for managing the red and white pine working groups.
3. Be able to plan and carry out afforestation operations using planted stock.
4. Identify, protect and promote non-timber values when conducting forest management operations.
5. Design and evaluate tree marking and thinning operations in northern tolerant hardwoods.
6. Describe the concepts of integrated forest pest management as practiced in northern tolerant hardwoods and the red and white pine working groups.
7. Demonstrate, using PC software, how modelling can be used as a tool when making decisions in forest management.

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**II. STUDENT PERFORMANCE OBJECTIVES (continued):**

8. Design a small scale timber management/wildlife management plan for a mature red and white pine working group.
9. Design a system of Permanent Sample Plots and describe the types of data gathered using the PSP's.
10. Demonstrate PSP data processing on microcomputers using a Forestry Canada PSP cataloguing system. Students will appreciate the value of the PC as a tool in forest management data management.

**III. TOPICS TO BE COVERED:**

- Unit I
- Introduction to Forest Management in Canada
  - Timber values versus other values in forest management
  - Planning, potential conflicts
  - Even aged management
  - Uneven aged management
- Unit II
- Red and white pine management systems
  - Inventory techniques for management planning in red and white pine
  - Wildlife values in mature red and white pine
  - Preparing a small scale management plan for a mature red and white pine stand of 20 ha
- Unit III
- Afforestation of native hardwoods for timber production and environmental protection
  - Managing planted hardwood plantations for fun and profit
- Unit IV
- Managing tolerant hardwood systems for regeneration and timber management
  - Wildlife values in northern hardwood forests
  - The selection system of hardwood management
  - Improvement cutting, basal area reduction, improving diameter distribution
  - Inventory of hardwoods
  - Evaluation of selection thinning operations
- Unit V
- Concepts of forest modelling
  - Role of the model in forest management planning activities
  - Limitations of modelling as a management tool
  - Using the personal computer for running forest modelling software
- Unit VI
- Introduction to Integrated Forest Pest Management (IFPM) and forest management practices
  - Designing an IFPM program for the red and white pine working group
- Unit VII
- Using the PC as a data management tool in forest management. PSP data and software cataloguing system will be used as an example.

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**IV. LEARNING ACTIVITIES:**

- Collect mensurational and ecological data in the field from the red and white pine working group.
- Compile data and submit a small scale timber/wildlife management plan for a 20 ha block from the red and white pine working group.
- Tour Lajambe forest products to examine processing of white pine logs into forest products. Wood supply, product demand and marketing will be discussed.
- Establish a block of planted hardwoods in the College outdoor lab. Provide rodent protection to high value hardwood saplings.
- Write a summary of *Establishing Hardwood Plantations on Old Farmlands* using a Forestry Canada publication as a reference and practical experience from the field planting exercise.
- Conduct tree grading and marking for thinning and improvement cuts at a local demonstration forest using the tolerant hardwood working group. Suitable reference material will be provided.
- Evaluation of tree marking and selection cutting/thinning using fixed area plots in tolerant hardwoods. Basal area methods and tree vigor and form will be used in the evaluation process.
- Stand modelling exercise. Students will be asked to determine the consequences of a series of management activities using a stand growth and yield simulation model. The model will be run on personal computers.
- Design a PSP plot and list types of data that can be collected. PC's will be used by students in a PSP data management exercise.

**V. EVALUATION METHODS:**

Red/White Pine Assignment	20
Tolerant Hardwood Assignment	10
Afforestation assignment	15
Report on Lajambe Forest Products	10
Modelling Assignment	10
Test	25
Participation	<u>10</u>
	100

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**VI. REQUIRED STUDENT RESOURCES:**

Suitable outdoor clothing for winter  
Compass  
Hardhat with liner  
Safety Boots  
No formal text required

**VII. ADDITIONAL RESOURCE MATERIALS AVAILABLE IN THE COLLEGE LIBRARY  
AT THE RESERVATION DESK:**

Chapeskie, D.J., Galley, D.F., Mihell, J.R., Quinn, N.W. and Struik, H.H. 1989. *A Silvicultural Guide for the White Pine and Red Pine Working Groups in Ontario.* OMNR, Forest Resources Group Science and Technology Series. Vol. 6. 102 p.

OMNR Forest Resources Group 1990. *A Silvicultural Guide for the Tolerant Hardwoods Working Group in Ontario.* OMNR Forest Resources Group Science and Technology Series. Vol. 7. 178 p.

OMNR Forest Resources Group 1986. *Jack Pine Working Group.* OMNR Forest Resources Group Silvicultural Guide Series. 40 p.

Von Althen, F.W. 1990. *Hardwood Planting on Abandoned Farmland in Southern Ontario: Revised Guide.* Forestry Canada, Ontario Region Sault Ste. Marie, Ontario. 77 p.

Robertson, R.G., Young, R.W. and Lees, J.C. 1991. *Hardwood Thinning Manual.* Canada/Nova Scotia Cooperation Agreement for Forestry Development.

*MPC Microcomputer PSP Catalogue System User's Manual, Release 3* - 1989. Canada, Alberta FERDA publication, Northern Forestry Centre, Forestry Canada, Edmonton Alberta. 36 p + software.

**VIII. 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.

