

DOC. #373

SAULT COLLEGE OF APPLIED ARTS AND TECHNOLOGY

SAULT STE. MARIE, ON

COURSE OUTLINE

COURSE TITLE: FOREST RENEWAL

CODE NO.: FOR241-4

SEMESTER: IV

PROGRAM: FORESTRY/RENEWABLE RESOURCES TECHNICIAN

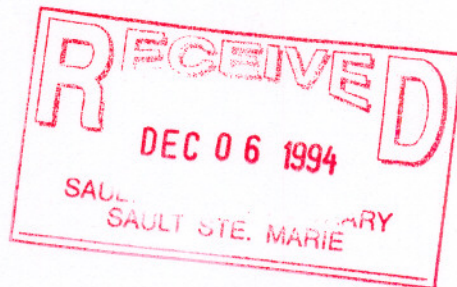
AUTHOR: MARK HARVEY

DATE: NOVEMBER 1994

PREVIOUS OUTLINE DATED: NEW

APPROVED: *M. Harvey*
DEAN

Nov. 29/94
DATE



FOREST RENEWAL

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TOTAL CREDITS 64

PREREQUISITE(S): NIL

I. PHILOSOPHY/GOALS:

This course is largely a companion course to Silviculture FOR200. It deals primarily with the regeneration and management of Ontario's forests. Emphasis is placed on planning and carrying out forest renewal operations in a safe and ecologically responsible manner. Students are also given the background required to understand the biological relationships found in landscapes where trees make up a dominant component of the ecosystem. Sustainability of the forest resource both biologically, socially and economically is stressed throughout.

II. STUDENT PERFORMANCE OBJECTIVES (OUTCOMES):

Upon successful completion of this course the student will:

- 1) Be able to participate effectively in carrying out silvicultural operations.
- 2) Be able to plan silvicultural operations.
- 3) Be competent to train unskilled silvicultural work crews.
- 4) Be able to identify the ecological and economic significance of applying a variety of silvicultural options.

III. TOPICS TO BE COVERED:

- 1) Seeds and Seeding
- 2) Forest Tending
- 3) Forest Tree Nurseries
- 4) Tree Planting
- 5) Tree Improvement

IV. LEARNING ACTIVITIES/REQUIRED RESOURCES:

1) **Topic/Unit** – Seeds and Seeding

- Tree seed collection
- Tree seed forecasting
- Insect pests of cones and seeds
- Identification of seeds of important commercial tree species
- Seed germination biology
- Seed bed characteristics
- Direct seeding methods including aerial and ground seeding

2) **Topic/Unit** – Forest Tending

- Juvenile spacing
- Precommercial and commercial thinning
- The OMNR VMAP program
- Silvics of major competitors to crop trees
- Characteristics and use of herbicides registered for use in forestry in Canada
- Aerial and ground herbicide application equipment

3) **Topic/Unit** – Forest Tree Nurseries

- Types of nursery stock production systems including bareroot, greenhouse accelerated transplants and greenhouse container stock
- Characteristics and evaluation of nursery stock
- Overwinter storage
- Transportation and handling of nursery stock

4) **Topic/Unit** – Tree Planting

- Selecting planting stock for specific sites
- Advantages and disadvantages of planting versus other regeneration options
- Caring for planting stock at the planting site
- Microsite selection
- Spacing
- Planting tools
- Planting faults
- Tree planting assessment techniques
- Tree plant contracting

IV. LEARNING ACTIVITIES/REQUIRED RESOURCES: (continued)

5) Topic/Unit - Tree Improvement

- Genetics of tree improvement
- Genealogy of important forest tree species in Ontario
- Seed zones
- Seed collection areas
- Tree selection
plus Scion selection
- Grafting
- Seed orchard design establishment and management
- Family test evaluation
- The genetic heritage of Ontario's forests
- Biotechnology and tree improvement

V. EVALUATION METHODS:

Assignment 20%	The Natural and Artificial Regeneration of An Assigned Species	(10% written, 10% oral)
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Tests	50%		
	Test #1	15%	
	Test #2	15%	
	Test #3	20%	
Labs	30%		
	Seeding Report	5%	
	Crop Plan	5%	
	Herbicide Problems	5%	
	Planting Problems	5%	
	Planting Assessment	5%	
	Stock Handling Report	5%	

90 - 100%	A+
80 - 89%	A
70 - 79%	B
60 - 69%	C
Less than 60%	R

Late assignments may not be accepted.
Late assignments accepted will be marked down.

80% Attendance is mandatory to achieve a C grade or higher.

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VI. PRIOR LEARNING ASSESSMENT:

Students who wish to apply for advanced credit in the course should consult the instructor.

VII. REQUIRED STUDENT RESOURCES:

Silviculture Study Guide

Turgeon, J.J. and DeGroot P. 1994. Management of Insect Pests of Cones in Seed Orchards in Eastern Canada. OMNR/Forestry Canada, Sault Ste. Marie, Ontario. Queen's Printer 98 p.

VIII. ADDITIONAL RESOURCE MATERIAL AVAILABLE IN THE COLLEGE LIBRARY:

Periodical Section

Silviculture Magazine

Forestry Chronicle

Audiovisual Section

Distance Educational Silviculture Videotape 2

IX. SPECIAL NOTES:

Students with special needs (eg. 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.