

**SAULT COLLEGE OF APPLIED ARTS & TECHNOLOGY  
SAULT STE MARIE, ON**



**COURSE OUTLINE**

**Course Title: FOREST RENEWAL**

**Code No.: FOR241      Semester: 4**

**Program: FORESTRY TECHNICIAN**

**Author: MARK HARVEY**

**Date: JAN 98      Previous Outline Date: DEC 96**

**Approved:**

  
**Dean, Natural Resources  
Programs**

**Date**

*January 19, 1998*

**Total Credits: 4**

**Length of Course: 3 HRS/WEEK X 16 WEEKS**

**Total Credit Hours: 64**

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*For additional information, please contact Brian Punch, Dean, Natural Resources Programs, (705) 759-2554, Ext. 688.*

FOREST RENEWAL

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COURSE NAME-----  
CODE NO.**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

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COURSE NAME-----  
CODE NO.**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

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COURSE NAME-----  
CODE NO.**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 15%  
 "The Natural and Artificial Regeneration of an Assigned Commercial Tree Species, Tech. Report"

TESTS 35%  
 Term Test #1 15%  
 Test Term #2 20%

LABS and LAB TESTS 50%  
 Lab 1-1 Seed Weights 5%  
 Lab 1-2 Insect Pests 5%  
 Lab 1-3 Pj Cones and Seeds 5%  
 Lab 1-4,1-5 Seed ID Test 5%  
 Lab 1-6 Direct Seeding 5%  
 Lab 2-1 Crop Planning 5%  
 Lab 3-1 Stock Types 5%  
 Lab 4-1 Tree Planting 5%  
 Tree Crop 10%

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

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COURSE NAME-----  
CODE NO.**V. EVALUATION METHODS: (cont'd)**

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

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

Students with an accumulated average grade of 75% in their term work and greater than 80% LAB attendance MAY be exempted from Test #2 at the discretion of the instructor.

**VI. PRIOR LEARNING ASSESSMENT:**

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

**VII. REQUIRED STUDENT RESOURCES:**

Forest Renewal Study Guide and Lab Manual

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 (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.