

**SAULT COLLEGE OF APPLIED ARTS AND TECHNOLOGY**

**SAULT STE. MARIE, ONTARIO**



Sault College

**COURSE OUTLINE**

**COURSE TITLE:** FOREST RENEWAL  
**CODE NO. :** NRT2410 **SEMESTER:** 4  
**PROGRAM:** FORESTRY TECHNICIAN  
**AUTHOR:** MARK HARVEY  
**DATE:** JAN 2003 **PREVIOUS OUTLINE DATED:** JAN 02  
**APPROVED:**  
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**DEAN** **DATE**  
**TOTAL CREDITS:** 3  
**PREREQUISITE(S):** NRT200  
**HOURS/WEEK:** 3 HOURS / WEEK

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

**I. COURSE DESCRIPTION:**

**This course is a companion course to silviculture NRT 200. Units covered in this course are forest tending, forest nursery production, forest tree planting and tree improvement. Through –out the course the provincially mandated policy of sound forest stewardship and sustainability are stressed**

**II.****LEARNING OUTCOMES AND ELEMENTS OF THE PERFORMANCE:**

- 1, Be able to participate effectively in carrying out silvicultural operations in Ontario
- 2, Assist in the planning of silvicultural operations
- 3, Be able to identify some legislated, and operational constraints imposed on the practice of silviculture in Ontario
- 4, Be respectful of the environment when conducting silvicultural operations.
- 5, Implement components of intensive and elite forest management in compliance with the Ontario Living Legacy and The Crown Forest Sustainability Act.

Upon successful completion of this course, the student will demonstrate the ability to:

1. Plan and conduct tending operations.

Potential Elements of the Performance:

- Plan juvenile spacing operations
- Plan pre commercial and commercial thinning and spacing operations
- Write crop plans for jack pine and white spruce
- Calculate optimal live crown ratios for pruning operations
- List factors to consider when determining the feasibility of conducting pruning ,thinning operations

This learning outcome will constitute 20% of the course grade.

2. Apply pesticides and conduct pest management activities in a safe, efficient, responsible manner and in compliance with all laws.

Potential Elements of the Performance:

- Apply forest pest management techniques and pesticides in a safe , effective and environmentally acceptable manner and in accordance with all relevant legislation List and identify economically important forest weed species
- List economically important forest insects
- List economically important fungal pests and animal pests in the forest
- Write prescriptions for pest management activities in the forest
- Clearly understand the MOE Pesticides Act and Reg. 914
- List properties and characteristics of pesticides registered for forest use in Canada
- Relate components of the Pest Control Products Act to pest management activities in forestry
- Demonstrate knowledge in the application of forest pesticides using ground application equipment
- Calibrate selected pieces of ground application equipment used in forestry
- Successfully complete pesticide application mixing problems
- Select pesticide application methods and pesticides for specified applications in forestry
- Demonstrate a complete understanding of pesticide hazards, storage and handling provisions, emergency measures and first aid
- Relate forest pesticides to chemical properties including relative toxicity, mode of action , residual activity, chemical groupings ,
- Classify selected forest pesticides by Registered use and limitations, species susceptibility, method of application, product formulations
- Fully comprehend pesticide container labels

This learning objective will constitute 15% of the course grade

3. Demonstrate ability to grow tree seedlings and conduct business with the private sector for tree seedling production.

Potential Elements of the Performance:

- List production techniques used in bareroot production
- List production techniques used in container production
- Assess seedling quality and use statistically sound sampling procedures

- Grow 4-8 species of containerized tree seedlings in a greenhouse approximately 750 seedlings
- List key elements of a seedling grower contract
- Visit a local tree seedling production center and complete a survey
- Assist in the Operation of the college tree production greenhouse

This learning outcome will constitute 30% of the course grade.

4. Demonstrate the ability to successfully conduct and administrate an operational tree plant

Potential Elements of the Performance:

- Select planting stock to meet specified forest regeneration objectives
- Develop contracts for the production of planting stock and tree planting
- Integrate tree planting with other forest management activities
- Demonstrate the proper care and handling of planting stock
- Demonstrate the proper care and use of planting equipment
- List planting operational strategies including microsite selection, planting technique, selection of tools and planting faults.
- Describe a minimum of 2 tree planting assessment procedures

This learning outcome will constitute 20% of the course grade.

5. List and define selected principles and practices used in tree improvement

Potential Elements of the Performance:

- Identify tree seed zones and the effects of provenance
- Identify plus tree characteristics
- Collect scions
- Graft conifer trees using the side veneer graft
- Define the reasons for setting up a seed orchard
- Briefly describe the theoretical basis for tree improvement
- List the characteristics of a minimum of 2 significantly different types of seed orchards
- Define the design of and the purpose of a family test

This learning outcome will constitute 15% of the course grade

**IV. REQUIRED RESOURCES/TEXTS/MATERIALS:**

NRT 2410 course study guide and lab manual

**V. EVALUATION PROCESS/GRADING SYSTEM:**

Technical reports 5%@ x5	25%
Tree crop	15%
Greenhouse work term	5%
Seed and cone test	10%
Term test #1	10%
Term test #2	10%
Labs reports 5%@ x 5	25%

Total 100%

The following semester grades will be assigned to students in postsecondary courses:

<u>Grade</u>	<u>Definition</u>	<u>Grade Point Equivalent</u>
A+	90 - 100%	4.00
A	80 - 89%	3.75
B	70 - 79%	3.00
C	60 - 69%	2.00
R (Repeat)	59% or below	0.00
CR (Credit)	Credit for diploma requirements has been awarded.	
S	Satisfactory achievement in field placement or non-graded subject areas.	
U	Unsatisfactory achievement in field placement or non-graded subject areas.	
X	A temporary grade. This is used in limited situations with extenuating circumstances giving a student additional time to complete the requirements for a course (see <i>Policies &amp; Procedures Manual – Deferred Grades and Make-up</i> ).	
NR	Grade not reported to Registrar's office. This is used to facilitate transcript preparation when, for extenuating circumstances, it has not been possible for the faculty member to report grades.	

**VI. SPECIAL NOTES:**Special Needs:

If you are a student with special needs (e.g. physical limitations, visual impairments, hearing impairments, or learning disabilities), you are encouraged to discuss required accommodations with your instructor and/or the Special Needs office. Visit Room E1204 or call Extension 493, 717, or 491 so that support services can be arranged for you.

Retention of course outlines:

It is the responsibility of the student to retain all course outlines for possible future use in acquiring advanced standing at other postsecondary institutions.

Plagiarism:

Students should refer to the definition of “academic dishonesty” in *Student Rights and Responsibilities*. . In order to protect students from inadvertent plagiarism, to protect the copyright of the material referenced, and to credit the author of the material, it is the policy of the department to employ a documentation format for referencing source material.

Course outline amendments:

The Professor reserves the right to change the information contained in this course outline depending on the needs of the learner and the availability of resources.

Substitute course information is available in the Registrar's office.

80% attendance during scheduled class time is required to achieve a C grade or better. Field trips are mandatory and scheduled class time. Students must behave in a professional manner and demonstrate respect to others while participating in this course to achieve a C grade or better.

**VII. PRIOR LEARNING ASSESSMENT:**

Students who wish to apply for advanced credit in the course should consult the professor. Credit for prior learning will be given upon successful completion of a challenge exam or portfolio.

**VIII. DIRECT CREDIT TRANSFERS:**

Students who wish to apply for direct credit transfer (advanced standing) should obtain a direct credit transfer form from the Dean's secretary. Students will be required to provide a transcript and course outline related to the course in question.