

SAULT COLLEGE OF APPLIED ARTS AND TECHNOLOGY

SAULT STE. MARIE, ONTARIO



COURSE OUTLINE

COURSE TITLE: Forest Renewal
CODE NO. : NRT 241 **SEMESTER:** 4
PROGRAM: Forest Conservation Technician
AUTHOR: Mark Harvey
DATE: Dec.2012 **PREVIOUS OUTLINE DATED:** Dec.2011

APPROVED:

“B.Punch”

CHAIR

DATE

TOTAL CREDITS: 3

PREREQUISITE(S): none

HOURS/WEEK: 3

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For additional information, please contact Brian Punch, Chair,
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I. COURSE DESCRIPTION:

This is a companion course to NRT 200 Silviculture. Units covered in this course are. Forest Tending, Forest Nursery Operations, Forest Tree Planting and Tree Improvement,

II. LEARNING OUTCOMES AND ELEMENTS OF THE PERFORMANCE:

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

- 1, Be able to participate in carrying out silvicultural operations
- 2, Assist in planning silvicultural operations
- 3, Identify key legislation applicable to practicing silviculture in Ontario
- 4, Implement extensive , intensive and elite silvicultural practices in compliance with the Crown Forest Sustainability Act

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
- List and describe how spacing can affect forest tree growth

This learning outcome will constitute 15% of the course grade

2. Apply pesticides and conduct pest management activities in full compliance of all federal and provincial laws and in an environmentally responsible manner

Potential Elements of the Performance:

- Identify and list vegetation competitor species
- Demonstrate knowledge of silvics of competitor species
- Write prescriptions for controlling competitors in forested areas
- Show a clear understanding of federal and provincial legislation as it applies to pest management activities in forestry
- List properties and characteristics of pesticides registered for forest use in Canada
- Successfully complete pesticide mixing problems
- Describe pesticide application techniques and equipment
- Demonstrate a complete understanding of pesticide environmental

and human health hazards

- Link specific forest pesticides to their chemical properties , relative toxicities, and method of application.
- List and compare non chemical to chemical methods of pest management used in forestry
- Develop an integrated forest pest management plan

This learning outcome will constitute 20% of the

3. Demonstrate ability to grow crops of forest tree seedlings in a nursery and show ability to conduct business with private sector tree seedling production facilities

Potential Elements of the Performance:

- List production techniques used in bareroot nurseries
- List production techniques used in container nurseries
- Assess seedling quality using statistically sound sampling procedures
- Grow 4-8 species of containerized tree seedlings from seed
- List key elements of a seedling grower contract
- Visit a local tree seedling production facility
- Assist in the operation of the college containerized tree seedling greenhouse.
- Identify 25 or more forest tree seed species and associated fruiting structures
- Develop tree seedling growing contracts

This learning outcome will constitute 30% of the course grade

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

Potential Elements of the Performance:

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

This learning outcome will constitute 20% of the course grade

5. List and define selected principals 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 tree grafting stock using the side veneer graft
 - List and describe the reasons for setting up a seed orchard
 - Briefly describe the theoretical basis for tree improvement
 - List the characteristics of clonal and seedling seed orchards
 - Define the purpose for and the design of a family test plot
- This learning outcome will constitute 15% of the course grade

III. TOPICS:

1. Seed and cone identification
2. Forest tending operations
3. Forest nursery stock production
4. Tree planting
5. Tree improvement

IV. REQUIRED RESOURCES/TEXTS/MATERIALS:

NRT241 Study guide and lab manual

V. EVALUATION PROCESS/GRADING SYSTEM:

Tree crop & grafting	20%
Greenhouse work term	5
Seed and cone test	10
Test	15
Lab reports and field trips	30
Guest speaker summaries	10
Attendance	<u>10</u>
Total	100%

The following semester grades will be assigned to students:

<u>Grade</u>	<u>Definition</u>	<u>Grade Point Equivalent</u>
A+	90 – 100%	4.00
A	80 – 89%	
B	70 - 79%	3.00
C	60 - 69%	2.00
D	50 – 59%	1.00
F (Fail)	49% and below	0.00

CR (Credit) Credit for diploma requirements has been

	awarded.
S	Satisfactory achievement in field /clinical placement or non-graded subject area.
U	Unsatisfactory achievement in field/clinical placement or non-graded subject area.
X	A temporary grade limited to situations with extenuating circumstances giving a student additional time to complete the requirements for a course.
NR	Grade not reported to Registrar's office.
W	Student has withdrawn from the course without academic penalty.

VI. ATTENDANCE

Sault College is committed to student success. There is a direct correlation between academic performance and class attendance; therefore, for the benefit of all its constituents, all students are encouraged to attend all of their scheduled learning and evaluation sessions. This implies arriving on time and remaining for the duration of the scheduled session

VII. COURSE OUTLINE ADDENDUM

The provisions contained in the addendum located on the portal form part of this course outline.