SAULT COLLEGE OF APPLIED ARTS AND TECHNOLOGY
SAULT STE. MARIE, ON

COURSE OUTLINE

COURSE TITLE: SILVICULTURE

CODE NO.: FOR200 **SEMESTER:** 3

PROGRAMS: ABORIGINAL RESOURCE TECHNICIAN
FORESTRY TECHNICIAN

AUTHOR: BOB CURRELL

DATE: JANUARY 1999 **PREVIOUS OUTLINE DATED:** JUNE 98

APPROVED: _____ Dec. 17, 1998
DEAN DATE

TOTAL CREDITS: 4 **PREREQUISITE(S):**

LENGTH OF COURSE: 16 WEEKS

TOTAL CREDIT HOURS: 64

SILVICULTURE 2 FOR200

COURSE NAME COURSE CODE

I. COURSE DESCRIPTION:

This course will introduce the student to the practice of reforestation in Ontario. It will describe forest site classification, silvicultural harvesting systems, site preparation alternatives, natural regeneration techniques and methods of evaluating regeneration success.

II. LEARNING OUTCOMES AND ELEMENTS OF THE PERFORMANCE:

(Generic Skills Learning Outcomes placement on the course outline will be determined and communicated at a later date.)

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

1. Explain the status of reforestation in Ontario

   Potential Elements of the Performance:

   - list programs encouraging the expansion of Ontario forest management
   - explain the responsibilities of Forest Licence holders for forest renewal
   - describe how funding for silvicultural work is made available
   - discuss the reasons for past mismanagement of native forest lands in Ontario and describe current initiatives to reverse this situation

   This learning outcome will constitute 10% of the course's grade.

2. Apply ecologically-based forest site classification systems to the practice of forest management

   Potential Elements of the Performance:

   - identify the value of ecologically based site classification systems
   - list the different site classification systems in use in Ontario and describe in what parts of the province they are used.
   - classify any forest site in North-Eastern Ontario using the FEC system for that area
   - identify species of forest trees, shrubs and herbs which are used as indicators of site types

   This learning outcome will constitute 15% of the course's grade.

II. LEARNING OUTCOMES AND ELEMENTS OF THE PERFORMANCE

3. Describe the forest harvesting and logging systems in use in Ontario and Select the method most appropriate silviculturally for any forested site in this province

   Potential Elements of the Performance:

   - distinguish between a silvicultural harvesting system and a logging method
   - illustrate the silvicultural advantages and disadvantages of each Ontario harvesting system
   - choose the appropriate silvicultural harvesting system and logging method to use, given a particular forest site type in Ontario

   This learning outcome will constitute 15% of the course's grade.

4. Indicate how to properly prepare a harvested site for future regeneration.

   Potential Elements of the Performance:

   - list the reasons for carrying out site preparation
   - summarize how site preparation can change growing conditions for young trees
   - list and describe 4 systems of site preparation used in Ontario forestry
   - recommend a site preparation treatment for any forest site in Ontario that will effectively promote regeneration
   - recognize at least 20 commonly used scarifiers and explain their method of operation
   - predict the results expected after a forest site has been treated with any commonly used Ontario scarifier

   This learning outcome will constitute 25% of the course's grade

5. Indicate how prescribed burning is used as a site preparation treatment and explain how prescribed burns are planned

   Potential Elements of the Performance:

   - explain the importance of and applications for prescribed burning in Ontario
   - identify the parts of a prescribed burning plan and specify how each plan part is completed
   - illustrate the patterns and types of ignition used on prescribed burns

   This learning outcome will constitute 10% of the course's grade

6. Apply Provincially approved survey methods to evaluate regeneration success

Potential Elements of the Performance:
- apply a systematic stocking assessment in either a conifer or hardwood working group
- operate a handheld microcomputer to carry out a regeneration survey

This learning outcome will constitute 15% of the course's grade

7. Explain how to integrate harvesting and renewal operations in order to obtain satisfactory natural restocking of cutover lands

Potential Elements of the Performance:

- discuss the current interest in natural regeneration systems
- identify forest ecosites where forest renewal using natural regeneration systems, would be effective
- describe the options for naturally regenerating both upland sites and poorly drained organic sites

This learning outcome will constitute 10% of the course's grade

III. TOPICS:

1) Introduction to Silviculture
   - the importance of forestry and reforestation
   - Ontario reforestation programs

2) Ecological Site Classification
   - the importance of classifying forest sites
   - Site Classification systems used in Ontario
   - procedures for classifying Notheastern Ontario sites using the FEC system

3) Silvicultural Harvesting Systems
   - silvicultural harvesting systems used in Ontario
   - logging methods used in Ontario

4) Site Preparation
   - reasons for site preparing cutover areas
   - descriptions of how site preparation can change soil and site conditions
   - introduction to site preparation methods

5) Mechanical Site Preparation (Scarification)
- descriptions, method of operation, results expected from the use of common scarifiers
- sites where different machine types are suited
- prime movers used in site preparation operations

6) Prescribed Burning
- reasons for carrying out prescribed burns
- prescribed burning plans
- the status of prescribed burning in Ontario

7) Regeneration Surveys
- reasons for surveying regeneration
- types of regeneration surveys carried out in Ontario
- procedures for carrying out a systematic stocking assessment of regeneration success
- procedures for assessing competition to regenerating trees using electronic data recorders

8) Natural Regeneration Techniques
- group seed trees, patch cutting
- alternate strip cutting of Black spruce
- cut to length harvesting
- careful logging on organic sites(CLAAG,HARO)
- careful logging of upland sites

IV. REQUIRED RESOURCES/TEXTS/MATERIALS:

- Silviculture Study Guide, 1996 edition
- Navigational protractor

V. EVALUATION PROCESS/GRADING SYSTEM

60% - Tests

- test 1; following topic 2
- test 2; following topic 5
- test 3; following topic 8

40% - Assignments

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

Grade	Definition	Grade Point Equivalent
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.	
X	A temporary grade – limited to situations with extenuating circumstances giving a student additional time to complete the requirements for a course (see Policies & Procedures Manual – Deferred Grades and Make-up).	
NR	Grade not reported to Registrar's office. This is used to facilitate transcript preparation when, for extenuating circumstances, it has been impossible for the faculty member to report grades.	

VI. SPECIAL NOTES:

Special Needs:

If you are a student with special needs (eg. physical limitations, visual impairments, hearing impairments, learning disabilities), you are encouraged to discuss required accommodations with the instructor and/or contact the Special Needs Office, Room E1204, Ext. 493, 717, 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 post-secondary institutions.

Course Modification:

The instructor reserves the right to modify the course as deemed necessary to meet the needs of students.

- Disclaimer for Meeting the Needs of the Learners
- Substitute Course Information is available at the Registrar's Office.
- Any Other Special Notes appropriate to your course.

VII. PRIOR LEARNING ASSESSMENT

Students who wish to apply for advanced credit in the course should consult the instructor. Credit for prior learning will be given upon successful completion of the following: