SAULTCOLLEGE

SAULT STE. MARIE, ONTARIO

COURSE OUTLINE

COURSE TITLE: Forest Practices and the Environment

CODE NO. : NET 252 **SEMESTER:** 3

PROGRAM: Natural Environment Technologist - Conservation and Management

AUTHOR: Laurie Thompson

DATE: June 2016 **PREVIOUS OUTLINE:** Aug. 2015

APPROVED:

Colin Kirkwood — June 2016
Chair — **DATE**

TOTAL CREDITS: 3

PREREQUISITE(S): NONE

HOURS/WEEK: 3

I. COURSE DESCRIPTION:

Students are provided with an overview of the characteristics of the forests of Ontario and forest management processes including planning, access, harvest, maintenance and renewal. The focus of the course will be on environmental considerations of forest practices to mitigate damage to ecosystem function.

II. LEARNING OUTCOMES AND ELEMENTS OF THE PERFORMANCE:

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

1. **Have an overall understanding of the management planning process on Crown Land.**

   Potential Elements of the Performance:

   - Overall characteristics of Ontario forests and the changes in forest structure and composition since forestry practices began
   - Develop a basic understanding of the laws that govern forestry on crown land in Ontario and the associated guidelines
   - Understand the stages of developing a crown forest management plan
   - Describe the forest values and their associated crown land user groups
   - Recognize the importance of the L.C.C. (local citizens committee) members and public consultation in the planning process
   - Be aware of annual operating plans and their components
   - Understand compliance monitoring
   - Describe forest certification types and guiding principles

   This learning outcome will constitute approximately 20% of the course's grade

2. **Explain the potential effects of forest practices on wildlife and make suggestions of how management activities can be modified to provide adequate wildlife habitat.**

Potential Elements of the Performance

- Understand the concepts of coarse and fine filter and their associated management considerations
- Compare and describe the differences between the effects that logging and natural disturbances have on wildlife habitat
- Describe habitat requirements of major Ontario generalist and specialist wildlife species
- Become familiar with the habitat needs of selected species and the forest management guidelines associated
- Investigate local issues with the endangered wood turtle and threatened woodland caribou and their associated management
- Describe an old growth forest and explain the values provided by maintaining these ecosystems
- Understand the importance of the emulation of forest fire

This learning outcome will constitute approximately 20% of the course's grade

3. **Develop the knowledge required for planning forest access roads and water crossings using best management practices**

Potential Elements of the Performance:

- Become familiar with the provincial and federal laws that surround access roads and water crossings and their mandatory standards
- Describe the guidelines and best management practices in road planning-layout along with the appropriate stages of road building
- Describe the guidelines and best management practices for water crossings, their appropriate location and construction.
- Recognize the principles of sediment and erosion control
- Learn the mitigation techniques available to prevent sediment and erosion control on forest roads and at water crossings.
- Comprehend a water crossing application required for crown land and a Forest Operations Inspection Program (FOIPS)
- Measures used to protect fish and fish habitat when removing beaver dams, culvert maintenance, ice bridges and snow fills, maintenance of riparian vegetation and temporary stream

crossing and their associated timing windows

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

4. **Explain the potential implications of forest harvesting on the physical environment**

Potential Elements of the Performance:

- Types of forest harvesting and logging methods
- Define site damage, site productivity, ecosystem resilience, sensitive sites and best management practices
- List and explain the five potential site damages of forestry practices on the physical environment
- Describe key site characteristics that determine harvesting site impact potential
- Plan and conduct a forest harvest audit inventory using standard equipment and methodology
- Develop a professional report that summarizes the impacts a logging operation has had on the forest
- Develop an understanding of harvesting considerations including both management implications and careful logging practices

This learning outcome will constitute approximately 30% of the course's grade

5. **Develop a general knowledge of the foundations of silviculture, and the importance of tree marking**

Potential Elements of the Performance:

- Understand the general silvics of tree species found in Ontario
- Acquire the foundations of silvicultural systems and their appropriate applications for harvesting
- Be able to understand all of the components required in the development of a silvicutural prescription
- Recognize the importance of tree marking guidelines and how they promote a healthy forest.
- Forest raptors habitat management guidelines-identification and action plan

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

6. **Describe the various methods of forest renewal and forest maintenance**

Potential Elements of the Performance:

- Differentiate between the Forest Renewal Trust Fund and Forestry Futures Trust Fund
- Be able to comprehend maintenance operations conducted on crown land including crop tree release, brushing, pre-commercial thinning and aerial spraying and their associated best management practices
- Develop an understanding of the different methods of site preparation and their associated best management practices
- Understand the concepts seed zone, container and bareroot stock.
- Become familiar with proper care and handling of planting stock
- List and identify operational tree plant strategies including microsite selection, spacing, densities, planting technique and planting faults
- Develop an operational tree planting prescription typical to northern Ontario
- Understand why we use prescribed burns and natural regeneration and their application

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

7. **Describe the resources available to private forest management in Ontario and the deficiencies that prevent good forestry practices**

Potential Elements of the Performance:

- Understand the components of the Managed Forest Tax Incentive Program (MFTIP) plan available to private landowners in Ontario
- Formulate a general understanding of tree bylaws and their role in private land forestry in Ontario
- Conservation Authorities and their importance
- Legislation for private land including: endangered species act, forestry act, etc.

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

III. TOPICS:

Note: These topics sometimes overlap several areas of skill development and are not necessarily intended to be explored in isolated units or in the order below

1. Forest management planning on Crown land
2. Silvicultural systems
3. Harvest methods
4. Forestry careers
5. Tree marking and wildlife
6. Access roads and watercrossings
7. Damage to the physical environment
8. Forest renewal and maintenance
9. Private land management in Ontario

IV. REQUIRED RESOURCES/TEXTS/MATERIALS:

Available Online:
OMNR, 2010. Forest Management Guide for Conserving Biodiversity at the Stand and Site Scales. Toronto: Queen's Printer for Ontario. 211pp.

V. EVALUATION PROCESS/GRADING SYSTEM:

MAJOR ASSIGNMENTS AND TESTING

Tests	30%
Assignments	70%

NOTE:
Attendance during field trips is **MANDATORY** to obtain any marks associated with the trip.

SUMMARY OF STUDENT EVALUATION

Assignments	70%
Final Exam	30%
Total	100%

Late Assignments:

Ten percent (%) will be deducted from the total value of the assignment for every day late. Assignments are due at the beginning of the class and even if handed in later in the day it counts as one day late.

Late Equipment:

Ten percent (%) may be deducted from the total value of the assignment for chronic lateness in returning signed out equipment from the Tech Office

The following semester grades will be assigned to students:

Grade	**Definition**	*Grade Point Equivalent*
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. SPECIAL NOTES:

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.