SAULT COLLEGE OF APPLIED ARTS AND TECHNOLOGY

SAULT STE. MARIE, ONTARIO

COURSE OUTLINE

COURSE TITLE:	**TIMBER MANAGEMENT**		
CODE NO. :	**NRT 222**	**SEMESTER:**	4
PROGRAM:	FORESTRY TECHNICIAN		
AUTHOR:	MARK HARVEY		
DATE:	DEC 2001	PREVIOUS OUTLINE DATED:	DEC 00
APPROVED:			
	_____		_____
			DATE
	___ DEAN		
TOTAL CREDITS:	4		
PREREQUISITE(S):	PHOTOGRAMMETRY NRT 104		
LENGTH OF COURSE:	16 WKS	**TOTAL CREDIT HOURS:**	64

I. COURSE DESCRIPTION:

Timber Management will provide students with skills needed for the planning and instillation of forest access roads, bridges and culverts, Students will use maps aerial photographs and inventory data to plan harvesting operations in a variety of forest types. Students will tour forest industry processing plants and discuss the relationships between timber harvesting and processing.

Emphasis will be given to the identification, description and operational constraints of a very wide range of timber harvesting equipment.
The historical evolution of the timber industry and the impacts of past timber management practices on the forests and forest industry in Ontario will be discussed. Current Provincial legislation applicable to timber harvesting will also be covered.

II. LEARNING OUTCOMES AND ELEMENTS OF THE PERFORMANCE:

1. Identify forest harvesting equipment
2. Identify the function of and operational constraints of timber harvesting equipment
3. Estimate water shed areas and calculate culvert sizes
4. Use maps to plan forest access roads and timber harvesting operations
5. Use timber inventory data to plan harvesting operations
6. Use aerial photographs to plan and locate forest access roads
7. Use aerial photographs to plan and locate forest harvesting operations
8. Trace the historical evolution of the timber industry in Ontario
9. List the impacts of past and current timber management and harvesting practices on the forests of Ontario
10. Understand provincial legislation related timber management.
11. List the sequence of operations used in forest access road construction
12. Demonstrate an understanding of selected forest access road construction and surveying techniques
13. Understand the relationship between timber management, and the forest products industry.

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

1. Use surveying techniques to design forest access roads
   Potential Elements of the Performance:
   - Design curves using the tangent offset method
   - Estimate cut and fill calculate slopes from elevation data calculate aggregate volumes from elevation data

   This will constitute 20% of the course's grade.

2. Identify harvesting equipment and operational considerations for harvesting equipment

   Potential Elements of the Performance:
   - Identify up to 40 pieces of harvesting equipment
   - List and describe methods of felling using the chain saw
   - List and describe and compare 4 or more logging methods
   - List and describe loading equipment
   - List and describe logging transportation equipment
   - Identify advantages disadvantages and constraints of specific pieces of harvesting equipment
   - List advantages and disadvantages of logging methods and effects on long term sustainability

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

3. Use maps and aerial photographs to plan and locate forest access and harvesting operations

   Potential Elements of the Performance:
   - Delineate water sheds using maps and aerial photos
   - Calculate water shed areas and culvert sizes using manual and computer models
   - Identify potential road corridors from aerial photographs using tree species and terrain as indicators
   - Identify and locate road location and harvesting constraints including areas of concern
   - Locate potential harvesting areas using aerial photographs
   - Use topographic and FRI maps to locate road corridors and determine slopes
   - Determine the feasibility of forest stands for harvesting using FRI maps and aerial photographs

   This will constitute 35% of the course's grade.

4. Describe the road building and timber harvesting process and

understand legislation related to timber harvesting activities

Potential Elements of the Performance:
- List and describe at least 8 steps in the road building process
- Outline methods of constructing forest access roads in an environmentally responsible manner
- Draw a simple aggregate permit site plan
- Calculate aggregate volumes using contour maps
- List key components of the crown forest sustainability act that apply to timber harvesting

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

5, Trace the historical evolution of the timber industry in Ontario and and relate past practices to the current timber industry.

Potential Elements of the Performance:
- Tour a forest products mill and visit a logging contractor's equipment yard
- Write an essay outlining the chronological evolution logging harvesting systems and harvesting equipment in Canada

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

III. TOPICS:

1. The history of timber harvesting in Ontario

2. Timber harvesting equipment

3. Planning forest access roads, bridges and culverts

4. Planning operational timber harvests

5 Forest Access road construction good practices and surveying techniques

IV. REQUIRED RESOURCES/TEXTS/MATERIALS:

- Timber Management Study Guide and Lab Manual
- Tracks in the Forest
- Aerial Photos and Maps package for Timber Management
- Environmental Guidelines for Access Roads and Water Crossings

V. EVALUATION PROCESS/GRADING SYSTEM:

Labs		25%
Essay		15 %
Test	Access roads	30%
Project		15%
Equipment	ID test	15%

The following semester grades will be assigned to students in postsecondary 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. This is used in limited 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 (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.

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.

For students to successfully complete this course with a C grade or better students must attend 80% of the scheduled classroom time. All assignments must be completed and submitted by individual students. Assignments are to be completed individually unless the professor indicates the assignment is a group assignment.
Students will be assigned 11 labs. Only 8 of these labs will be used to complete the final grade
Assignments and labs are due at the beginning of the class on the day they are due. Late assignments that include labs and projects will be down graded. Assignments more than 7 calendar days over due will be assigned a grade of “0”. Exceptions may be granted by the professor for medical or compassionate reasons.

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:

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.