DOC. NO. 358

SAULT COLLEGE OF APPLIED ARTS & TECHNOLOGY

SAULT STE. MARIE, ONTARIO

COURSE OUTLINE

Course Title: FOREST UTILIZATION

Code No.: FOR 204-3

Program: FORESTRY TECHNICIAN

Semester: THREE

Date: SEPTEMBER, 1987

Author: MARK HARVEY

New: _____ Revision: X

APPROVED: _____ Nov 27/87
Chairperson Date

CALENDAR DESCRIPTION

FOREST UTILIZATION (SOILS) — COURSE NAME

FOR 204-3 — COURSE NUMBER

PHILOSOPHY/GOALS:

This is an introductory course in soils that will provide students with an understanding of the physical, chemical, biological and developmental aspects of soils and soil profiles, and some applications of soil science used in forest management practices.

METHOD OF ASSESSMENT (GRADING):

Essay (1)	20%
Project	20%
Lab Practical Test	20%
Lecture/Lab Test	40%
	100%

GRADES:

A+	=	90-100%
A	=	80-89%
B	=	70-79%
C	=	60-69%
R	=	< 60%

TEXT(S):

Ontario Institute of Pedology and University of Guelph, 1985. Field Manual for Describing Soils, 3rd Edition. O/P Publ. No. 85-3.

SUGGESTED REFERENCES:

Expert Committee of Soil Survey: The Canada Soil Information Systen (CanSis), Manual for Describing Soils in the Field, 1982, revised, 1983. J. H. Day, Editor. Land Resource Research Institute, Res. Branch, Agri. Can., Ottawa. 97 p. and Append.

Armson, K.A., 1977. Forest Soils: Properties and Processes. University of Toronto Press. 390 p.

Harpstead, M.I. and Hole, F.D., 1980. Soil Science Simplified. Iowa State University Press. Ames, Iowa, U.S.A. 121 p.

TOPIC NO.	PERIODS	TOPIC DESCRIPTION
1	1	Rocks, Minerals and Weathering - identification of three major classes of rock - bed rock formations - weathering of rocks and minerals and soil forming processes
2	2	Glaciation and Glacial Deposits - recognition of landforms - glacial history - soil characteristics of glacial deposits - relationships between forest growth potential and landforms
3	2	Physical Properties of Soils - texture, bulk density, porosity, structure, colour
4	2	Soil Profile Development and Soil Classification - differentiation of soils into orders and great groups - parent material, the environment and soil profile development - soil classification for Canada - soil survey systems
5	2	Soil Water and Drainage Classification - osmotic, matric, gravitational forces - movement of water through soil - soil texture, soil moisture and plant growth relationships - soil moisture, plant, atmospheric relationships - methods for determining soil moisture - drainage classification

TOPIC NO.	PERIODS	TOPIC DESCRIPTION
6	2	Chemical Properties of Soil - soil colloids and sources of negative charges - cation exchange capacity - soil acidity and alkalinity
7	1	Soil Organic Matter & Soil Biology - decomposition and distribution of organic matter in soils - soil microbes, mycorrhizae and nitrogen fixation - nutrient cycling - organic soils, peat lands and forest productivity
8	2	Soil Nutrients & Tree Growth - essential plant nutrients - relationship between soil physical-chemical properties and soil nutrient status - measuring soil fertility - milliequivalents, ppm, percentages and soil test results - commercial fertilizers
9	1	Forestry Practices and Soil - fire - harvesting - site preparation - fertilization - drainage
10		**FINAL LECTURE/LABORATORY TEST**