SAULT COLLEGE OF APPLIED ARTS & TECHNOLOGY

SAULT STE. MARIE, ONTARIO

COURSE OUTLINE

Course Title: DESCRIPTIVE DENDROLOGY II

Code No.:   FOR 107-3

Program: FORESTRY

Semester: 2

Date: JULY, 1989

Author: DON HALL

New: _____   Revision: __X_____

APPROVED: _____   _____Aug 9/89_____
          Chairperson   Date

CALENDAR DESCRIPTION

DESCRIPTIVE DENDROLOGY	FOR107-3
Course name	Course Number

PHILOSOPHY/GOALS:

A systematic study of tree and shrub winter identification features. After successfully completing this course, students should be able to identify all Ontario commercial species in the field in the winter, as well as many of the less important trees and shrubs. Students will have a good basic knowledge of ground flora and most aspects of forest sites.

METHOD OF ASSESSMENT (GRADING METHOD)

There will be approximately 6 tree and shrub identification tests. The lowest mark on these tests will not be included in final mark calculation

Tree and Shrub identification:	50% of mark
Lecture Tests:	20% of mark
Plant identification:	20% of mark
Drawings, Descriptive Sheets, Other Assignments	10%

Grading:
$$A+ = 95-100\%$$
$$A = 90-94\%$$
$$B = 80-89\%$$
$$C = 70-79\%$$

A single rewrite covering the whole course may be allowed if final mark falls between 60% and 69%, and student has a good attendance record. Rewrites will not result in grade higher than "C".

In addition to the regular testing and evaluation, there will be a single test, covering 20 commercially important tree species, administered near the end of the course. Failure to identify 90% of the species correctly will result in a course grade of "R".

TEXTBOOK(S)

Hosie R. C., 1979. Native Trees of Canada, 8th. ed., Can. Forest.
Ser. 380 pp.

Peterson & Mckenny, 1968. A Field Guide to Wildflowers, Houghton
Mifflin, 420 pp.

SPECIFIC OBJECTIVES	TECHNICIAN COMPETENCY BENCHMARK
Give shade tolerance for common Ontario tree species	2968.06
State and explain common tree improvement techniques such as: gene conservation, seed zones, provenance research, breeding programs, plus tree selection, mutation breeding, use of exotics and hybridization.	2968.06
Explain the strategies involved in Ontario's tree improvement program.	2968.06
Draw and label a typical tree seed.	2968.03
Explain seed physiology under the following headings: - Function of seed coat - Seed opening - Moisture content and requirements - Effects of temperature, oxygen and light	2968.03
Draw and label seedlings, showing characteristics of epigeous and hypogeous germination.	2968.03
Explain proper seed handling procedures such as: depulping, dewinging and stratification.	2968.03
Describe main silvicultural systems, and discuss their derivations, applications and associated problems.	2968.02
Describe the three major categories of forests, based on their origins.	2968.02

Define the following terms: 2965.01
    - stand
    - cover type
    - sub canopy
    - regeneration
    - physiographic type
    - type
    - canopy
    - main stand
    - advanced growth

Discuss impediments to silvicultural progress in Canada.   2968.05

Discuss biological and economical aspects of pure, mixed,   2968.05
even, and uneven aged stands.

Construct a curve, which graphically represents a given   2968.02
stand structure.

Identify and explain four major methods of assessing   2968.04
site quality.

Define soil terminology such as: 2968.02
    - capillary   2965.01
    - gley
    - loess
    - podzol

Discuss in detail, factors which affect a forest site   2968.02
under the following headings: 2970.01
    - Climatic
    - Edaphic
    - Physiographic
    - Biotic

Describe stocking and density as they relate to forest   2968.13
stands.

Recognize and define the five crown classes.   2968.13

Describe silvical characteristics of major Eastern   2968.02
Canadian tree species such as: size, longevity; major
uses, site requirements, common associates, distribution
and ecological values.

Identify the following twenty, commercially important   2970.01
tree species in the winter conditions, to a 90% accuracy.

    Ce   Ew   Po   Bd   Bf   Mh   Ms   Ta   Aw   Ab
    Or   Ow   He   Pj   Pr   Pw   Sb   Sw   Bw   By

Identify sixty associated plant species in major **forest**   2967.04
communities.

Identify commercially important tree species of this area   2967.04
by features such as: - silhouettes
                       - seedlings
                       - bark

Assess seed and stock viability by cutting and germination   2968.03
tests.

Identify up to fifty-three deciduous species by twig and   2970.01
fruit.   2967.04

REFERENCE TEXTS:

Arnold L.N., Martin A.C., Herbert S.Z.: American Wildlife & Plants,
General Publishing, 500 pp.

Anonymous: Seeds of Woody Plants in the United States, U.S. Dept. of
Argiculture Handbook, 450-883 pp.

Harlow Harrar & White: Textbook of Dendrology, 6th ed., McGraw Hill,
510 pp.

Fowells H.A.: Silvics of Forest Trees of the United States, U.S.
Dept. of Argiculture.

Cunningham G. C.: Forest Flora of Canada, Bulletin 121, Dept. of
Northern Affairs, 144 pp.

DESCRIPTIVE DENDROLOGY

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LECTURES

Topic No.	Periods	Topic Description	Reference
1	1	SEEDS -structure -types of germination -viability	
2	1	SILVICS -History -progrss -future outlook	
3	3	STANDS -pure and mixed -even and uneven	
4	2	SITE -plant indicators -volume or yield -soil -height growth	
5	4	FACTORS AFFECTING SITE -climatic -edaphic -physiographic -biotic -fire	
6	1	STOCKING & DENSITY -differences -extent of crowding -yields -crown classification	
7	4	SILVICS -silvics of major eastern species	
8	1	SEEDLINGS -establishment -survival	

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LABS

TOPIC NO.	PERIODS	TOPIC DESCRIPTION	REFERENCE
1	14	TWIGS - identification of approximately 47 species - descriptive sheets to cover twigs, bark, flowers, fruit	
2	2	VIABILITY & GERMINATION - seeds tested and germinated - report on results	
3	10	FOREST PLANTS - identification - communities	
4	4	FIELD TRIPS	
5	2	SEEDLINGS - identification of major tree species	