

SAULT COLLEGE OF APPLIED ARTS & TECHNOLOGY

SAULT STE. MARIE, ONTARIO

COURSE OUTLINE

COURSE TITLE: DESCRIPTIVE DENDROLOGY II

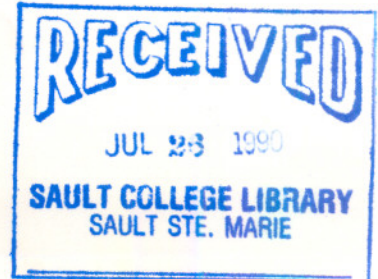
CODE NO.: FOR 107-3 SEMESTER: 2

PROGRAM: FORESTRY

AUTHOR: DERROLL MURPHY

DATE: JULY 1990 PREVIOUS OUTLINE DATED: JUNE 1989

APPROVED: *[Signature]* DEAN *[Signature]* DATE July 26 1990



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TOTAL CREDIT HOURS: 48

PREREQUISITE(S): FOR102-3

I. 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.

II. STUDENT PERFORMANCE OBJECTIVES:

Upon successful completion of this course, the student will:

1. Identify all major tree species of Ontario in the winter conditions.
2. Recognize major associated plant and shrub species.
3. Discuss forest sites under headings such as shade tolerance, stocking and crown class.
4. Discuss tree improvement strategies.
5. Describe methods used for assessing site quality.

III. TOPICS TO BE COVERED:

1. Identification of trees by bark twig and silhouette.
2. Identification of shrubs by winter twig.
3. Identification of forest plants by flower and leaf.
4. Silvics of eastern Canadian tree species.
5. Basic silviculture.



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IV. LEARNING ACTIVITIES:

1. Give shade tolerance for common Ontario tree species.
2. 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.
3. Explain the strategies involved in Ontario's tree improvement program.
4. Draw and label a typical tree seed.
5. Explain seed physiology under the following headings:
 - Function of seed coat
 - Seed opening
 - Moisture content and requirements
 - Effects of temperature, oxygen and light
6. Draw and label seedlings, showing characteristics of epigeous and hypogeous germination.
7. Explain proper seed handling procedures such as: depulping, dewinging and stratification.
8. Describe main silvicultural systems, and discuss their derivations, applications and associated problems.
9. Describe the three major categories of forests, based on their origins.
10. Define the following terms:
 - stand
 - cover type
 - sub canopy
 - regeneration
 - physiographic type
 - type
 - canopy
 - main stand
 - advanced growth
11. Discuss impediments to silvicultural progress in Canada.
12. Discuss biological and economical aspects of pure, mixed, even, and uneven aged stands.
13. Construct a curve, which graphically represents a given stand structure.

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IV. LEARNING ACTIVITIES: (cont'd)

14. Identify and explain four major methods of assessing site quality.
15. Define soil terminology such as:
 - capillary
 - gley
 - loess
 - podzol
16. Discuss in detail, factors which affect a forest site under the following headings:
 - Climatic
 - Edaphic
 - Physiographic
 - Biotic
17. Describe stocking and density as they relate to forest stands.
18. Recognize and define the five crown classes.
19. Describe silvical characteristics of major Eastern Canadian tree species such as: size, longevity, major uses, site requirements, common associates, distribution and ecological values.
20. Identify the following twenty, commercially important 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
21. Identify sixty associated plant species in major forest communities. (Riker mounts and laminated specimens)
22. Identify commercially important tree species of this area by features such as:
 - silhouettes
 - seedlings
 - bark(Slides, field trips (need snowshoes), Greenhouse)
23. Assess seed and stock viability by cutting and germination tests.
24. Identify up to fifty-three deciduous species by twig and fruit.

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V. EVALUATION METHODS:

Tree & Shrub Identification:
40% of mark

Lecture tests: (one at
midterm, one at end of
semester)
30% of mark

- A+ 95%
- A 90%
- B 80%
- C 70%

- A+ 85%
- A 75%
- B 65%
- C 55%

Plant Identification: 20% of mark

- A+ 95%
- A 90%
- B 80%
- C 70%

Lab drawings, Descriptive sheets, and Seed report: 10% of mark

Lab and field tests will be accumulative. If a test is missed for a good reason, be sure and notify the instructor so you will not be given a zero grade for that particular test. If more than two tests are missed without a satisfactory reason, students will be subject to a fast R. A rewrite will be necessary if a minimum of a C grade is not obtained in Identification and Lecture tests. To be eligible for a rewrite, marks must be within 10% of a C grade. The highest obtainable grade if a rewrite is required is a C.

Handins of descriptive sheets, lab drawings and key quizzes are required at most classes therefore students should attend all classes.

VI. REQUIRED STUDENT RESOURCES:

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.

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VII. ADDITIONAL RESOURCE MATERIALS AVAILABLE IN THE COLLEGE LIBRARY BOOK SECTION:

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

QL756.M27 (One copy is available for library use only, ask at the main desk.

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

SD402.U5

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

QK481.H32

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

SD395.U5

VIII. SPECIAL NOTES:

Hard hats must be worn on all field trips.