

SAULT COLLEGE OF APPLIED ARTS & TECHNOLOGY  
SAULT STE. MARIE, ONTARIO

COURSE OUTLINE


COURSE TITLE: DESCRIPTIVE DENDROLOGY II

CODE NO.: FOR 107-3 SEMESTER: 2

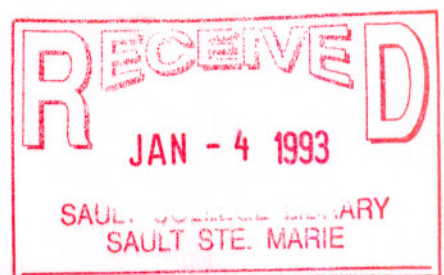
PROGRAM: FORESTRY

AUTHOR: MARK HARVEY

DATE: NOVEMBER 1992 PREVIOUS OUTLINE DATED: JULY 1992

APPROVED:  DEAN

DATE: Nov/2/92





DESCRIPTIVE DENDROLOGY II

FOR107-3

COURSE NAME

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TOTAL CREDIT HOURS: 48

PREREQUISITE(S): FOR102-3

I. PHILOSOPHY/GOALS:

Students will gain the skill of winter identification of major tree and shrub species that are representative of the forest regions and urban areas of Ontario. Students will also identify dwarf woody plants and herbs growing in association with shrub and tree species in Ontario woodlands. The silvics of tree species and the ecology of plant associations will be studied to complement the identification of plant species.

II. STUDENT PERFORMANCE OBJECTIVES:

Upon successful completion of this course, the student will:

1. Identify in the winter condition important tree and shrub species indigenous to Ontario.
2. Identify in the winter selected exotic deciduous tree species commonly planted in Ontario.
3. Identify selected herbs in the summer condition that are representative of important forest site types found in Central and Northern Ontario.
4. To recognize key identification features found on the stems, overwintering buds, foliage and flowering structures of herbs, shrubs and trees common in Ontario.
5. To list components of applied seed biology as required to successfully practice the regeneration of trees and shrubs by seed.
6. To list the important silvical characteristics of major tree and shrub species found in Ontario.
7. Using an ecological approach, to discuss the structure and development of important stand types and plant associations found in Ontario.
8. To describe the rudimentary concepts of silviculture as practiced in Ontario.



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III. TOPICS TO BE COVERED:

1. Identification of trees and shrubs in the winter condition including seed bearing structures.
2. Identification of herbs in the summer condition.
3. Silvical characteristics of selected tree species.
4. Matching commonly planted native and exotic trees to the urban environments.
5. Applied seed biology.
6. Morphological characteristics of stems and flowers used for plant identification purposes.
7. Forest stand development and structure from early to late succession.
8. The site requirements of important plant associations of the Boreal and Great Lakes St. Lawrence Forest Regions.
9. Introduction to silvicultural forest management systems as practiced in Ontario.
10. Climatic, geological and biological characteristics of some forest regions of Ontario.

IV. EVALUATION METHODS:

Eight (8) Tree, Shrub and Plant identification tests. Only a student's best 7 out of 8 tests will contribute to the final grade.	70%
Class Participation and Quizzes	10%
Lecture Test	<u>20%</u>
	100%

There will be no rewrite tests except for medical or compassionate reasons.

V. REQUIRED STUDENT RESOURCES:

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

Hall, Don 1991. Descriptive Dendrology, FOR107 Study Guide, for classroom delivery, School of Sciences & Natural Resources, Sault College, 184pp.

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

Anonymous: Seeds of Woody Plants in the United States, U.S. Dept. of Agriculture Handbook, 450-883 pp.  
SD402.U5

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.)

Baldwin, K.A. and Sims, R.A. 1989. Common Forest Plants in Northwestern Ontario. Forestry Canada - O.M.N.R., NWOFTDU Thunder Bay, Ont.  
344pp.

Fowells H.A.: Silvics of Forest Trees of the United States, U.S. Dept. of Agriculture.  
SD395.U5

Grimm W.C.: Recognizing Native Shrubs, Stackpole Penn. 1966  
QK481.G8

Harlow Harrar & White: Textbook of Dendrology, 6th ed., McGraw Hill, 510 pp.  
QK481.H32

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

Sims, R.A., Kershaw, H.M, and Wickware, G.M. 1990. The Autecology of Major Tree species in the North Central Region of Ontario. N.W. Ont. For. Tech. Dev. Unit, O.M.N.R., Thunder Bay, Ont. - For. Can. Sault Ste. Marie, Ont. COFRDA REP. 3302 NWOFTDU TECH. REP. 48 126pp.

VII. SPECIAL NOTES:

Safety boots, hard hats and proper winter clothing are required for all outdoor lab work.

Students with special needs (e.g. physical limitations, visual impairments, hearing impairments, learning disabilities) are encouraged to discuss required accommodations confidentially with the instructor.

Your instructor reserves the right to modify the course as he/she deems necessary to meet the needs of students.



LIST OF SMALL SHRUBS AND HERBS - FOR107

**WHITE PINE**

Large-leaved Aster	<u>Aster macrophyllus</u>
Starflower	<u>Trientalis borealis</u>
Twinflower	<u>Linnaea borealis</u>
Spring-beauty	<u>Claytonia caroliniana</u>
Dwarf Raspberry	<u>Rubus pubescens</u>
Gaywings	<u>Polygala paucifolia</u>
Moccasin Flower	<u>Cypripedium acaule</u>

**WHITE PINE HEMLOCK YELLOW BIRCH**

Currants & Gooseberries	<u>Ribes spp.</u>
Goldthread	<u>Coptis groenlandica</u>
Wood Sorrel	<u>Oxalis montana</u>
Sweet-fern	<u>Comptonia peregrina</u>
One-flowered Wintergreen	<u>Moneses uniflora</u>
Dogtooth Violet	<u>Erythronium americanum</u>

**MISCELLANEOUS**

Ox-eye Daisy	<u>Chrysanthemum leucanthemum</u>
Bog Laurel	<u>Kalmia polifolia</u>
Common Yarrow	<u>Achillea millefolium</u>
Mountain Holly	<u>Nemopanthus mucronata</u>
Pearly Everlasting	<u>Anaphalis margaritacea</u>
Three-toothed Cinquefoil	<u>Potentilla tridentata</u>
Spreading Dogbane	<u>Apocynum androsaemifolium</u>
Wild Red Raspberry	<u>Rubus idaeus</u>
Fireweed	<u>Epilobium angustifolium</u>
Columbine	<u>Aquilegia canadensis</u>
Orange Hawkweed	<u>Hieracium aurantiacum</u>
Wild Rose	<u>Rose acicularis</u>
Small Cranberry	<u>Vaccinium osycoccus</u>
Poison Ivy	<u>Rhus radicans</u>

**HARDWOODS**

False Solomon's seal	<u>Smilacina racemosa</u>
Rose Twisted-stalk	<u>Streptopus roseus</u>
Solomon's seal	<u>Polygonatum pubescens</u>
Indian Cucumber-root	<u>Medeola virginiana</u>
Wild sarsaparilla	<u>Aralia nudicaulis</u>
Fragrant Bedstraw	<u>Galium triflorum</u>
Partridgeberry	<u>Mitchella repens</u>
White Trillium	<u>Trillium grandiflorum</u>
Nodding Trillium	<u>Trillium cernuum</u>
Dutchman's breeches	<u>Dicentra cucullaria</u>
Blue, Purple, White & Yellow Violets	<u>Viola spp.</u>

LIST OF SMALL SHRUBS AND HERBS - FOR107

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**SPRUCE-WHITE BIRCH**

Bunchberry	<u>Cornus canadensis</u>
Wild Lily-of-the-valley	<u>Maianthemum canadense</u>
Canada Anemone	<u>Anemone canadensis</u>
Wood Anemone	<u>Anemone quinquefolia</u>
Shinleaf Pyrola	<u>Pyrola elliptica</u>
One-sided Pyrola	<u>Pyrola secunda</u>
Sweet Coltsfoot	<u>Petasites palmatus</u>
Baneberry	<u>Actaea spp.</u>

**JACK PINES**

Low Sweet Blueberry	<u>Vaccinium angustifolium</u>
Velvet Leaf Blueberry	<u>Vaccinium myrtilloides</u>
Creeping Snowberry	<u>Gaultheria hispidula</u>
Wintergreen	<u>Gaultheria procumbens</u>
Prince's Pine	<u>Chimaphila umbellata</u>
Trailing Arbutus	<u>Epigaea repens</u>
Bearberry	<u>Arctostaphylos uva-ursi</u>
Yellow Clintonia	<u>Clintonia borealis</u>
Cow-Wheat	<u>Melampyrum lineare</u>
Strawberry	<u>Fragaria virginiana</u>

LIST OF TREES AND SHRUBS - FOR107 30 7813

**ACERACEAE - THE MAPLE FAMILY**

Sugar Maple	<u>Acer saccharum</u>
Red Maple	<u>Acer rubrum</u>
Silver Maple	<u>Acer saccharinum</u>
Mountain Maple	<u>Acer spcatum</u>
Striped Maple	<u>Acer pensylvanicum</u>
Manitoba Maple	<u>Acer negundo</u>
Norway Maple	<u>Acer platanoides</u>

**BETULACEAE - THE BIRCH FAMILY**

Yellow Birch	<u>Betula alleghaniensis</u>
White Birch	<u>Betula papyrifera</u>
Speckled Alder	<u>Alnus rugosa</u>
Green Alder	<u>Alnus viridis</u>
Hop-Hornbeam	<u>Ostrya virginiana</u>
Beaked Hazelnut	<u>Corylus cornuta</u>

**FAGACEAE - THE BEECH FAMILY**

Beech	<u>Fagus grandifolia</u>
Bur Oak	<u>Quercus macrocarpa</u>
Red Oak	<u>Quercus rubra</u>

**OLEACEAE - THE OLIVE FAMILY**

White Ash	<u>Fraxinus americana</u>
Red Ash	<u>Fraxinus pennsylvanica</u>
Black Ash	<u>Fraxinus nigra</u>

**TILIACEAE - THE LINDEN FAMILY**

Basswood	<u>Tilia americana</u>
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**ROSACEAE - THE ROSE FAMILY**

Black Cherry	<u>Prunus serotina</u>
Choke Cherry	<u>Prunus virginiana</u>
Pin Cherry	<u>Prunus pennsylvanica</u>
Canada Plum	<u>Prunus nigra</u>
Apple	<u>Malus spp.</u>
Mountain - Ash	<u>Sorbus americana</u> & <u>Sorbus decora</u>
Hawthorn	<u>Crataegus spp.</u>
Serviceberry	<u>Amelanchier spp.</u>



## SALICACEAE - THE WILLOW OR POPLAR FAMILY

Willow	<u>Salix</u> spp.
Trembling Aspen	<u>Populus</u> <u>tremuloides</u>
Large-tooth Aspen	<u>Populus</u> <u>grandidentata</u>
Balsam Poplar	<u>Populus</u> <u>balsamifera</u>
Eastern Cottonwood	<u>Populus</u> <u>deltoides</u>
Silver Poplar	<u>Populus</u> <u>alba</u>
Lombardy Poplar	<u>Populus</u> <u>nigra</u>
Carolina Poplar	<u>Populus</u> <u>X canadensis</u>

## ULMACEAE - THE ELM FAMILY

White Elm	<u>Ulmus</u> <u>americana</u>
Rock Elm	<u>Ulmus</u> <u>thomasii</u>
Slippery Elm	<u>Ulmus</u> <u>rubra</u>

## THE VIBURNUMS

Highbush Cranberry	<u>Viburnum</u> <u>trilobum</u>
Wild Raisin	<u>Viburnum</u> <u>casinoides</u>
Nannyberry	<u>Viburnum</u> <u>lentago</u>

## THE DOGWOODS

Red Osier	<u>Cornus</u> <u>stolonifera</u>
Alternate-Leaved Dogwood	<u>Cornus</u> <u>alternifolia</u>

## OTHER NORTHERN ONTARIO SHRUBS

Labrador Tea	<u>Ledum</u> <u>groenlandicum</u>
Leatherleaf	<u>Chamaedaphne</u> <u>calyculata</u>
Red-berried Elder	<u>Sambucus</u> <u>pubens</u>
Staghorn Sumac	<u>Rhus</u> <u>typhina</u>
Bush Honeysuckle	<u>Diervilla</u> <u>lonicera</u>
Smooth Sumac	<u>Rhus</u> <u>glabra</u>

TREES OF THE DECIDUOUS FOREST

Black walnut

Butternut

Shagbark Hickory

Bitternut Hickory

Blue Beech

White Oak

Hackberry

Tulip-Tree

Witch-Hazel

Sycamore

Kentucky Coffee-Tree

Poison Sumac

Flowering Dogwood

Juglans miqra

Juglans cinera

Carya ovata

Carya cordiformis

Carpinus caroliniana

Quercus alba

Celtis occidentalis

Liriodendron tulipifera

Hamamelis virginiana

Platanus occidentalis

Gymnocladus dioicus

Rhus vernix

Cornus florida