

**SAULT COLLEGE OF APPLIED ARTS AND TECHNOLOGY**

**SAULT STE. MARIE, ONTARIO**



Sault College

**COURSE OUTLINE**

**COURSE TITLE:**

PLANT DIVERSITY

**CODE NO. :**

NRT218

**SEMESTER:**

3

**PROGRAMS:**

FORESTRY, FISH AND WILDLIFE AND  
PARKS AND OUTDOOR RECREATION TECHNICIAN  
ABORIGINAL RESOURCE TECHNICIAN

**AUTHOR:**

Mark Harvey

**DATE:**

FALL  
2001

**PREVIOUS OUTLINE DATED:**

FALL  
2000

**APPROVED:**

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DEAN

\_\_\_\_\_  
DATE

**TOTAL CREDITS:**

3 CREDITS

**PREREQUISITE(S):**

NRT102 AND NRT 107

**LENGTH OF**

**COURSE:**

16 WEEKS

**TOTAL CREDIT HOURS:**

48

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*For additional information, please contact*  
*Joe Fruchter, Dean School of Business, Hospitality*  
*& Natural Resources (705) 759-2554, Ext. 688*

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Code No.**I. COURSE DESCRIPTION:**

Plant Diversity is a survey of natural aquatic and terrestrial ecosystems and associated plant communities found in central Ontario. A wide variety of plants will be identified. Forest and wetland ecosystems will be classified using ecological classification systems designed for use in the local area. Students will gain an appreciation for the biology and ecology of plant communities. Wherever possible emphasis will be given to the traditional and modern uses of non-timber plants as medicines, foods and as the potential for commercial opportunities. The taxonomy, biology and ecology skills and knowledge students pick –up throughout this course will be cumulative. This should help students to enter the job market with a marketable skill set.

**II. LEARNING OUTCOMES AND ELEMENTS OF THE PERFORMANCE:**

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

1. Identify Forest Plant Species.

Potential Elements of the Performance:

The numbers of plants identified may vary slightly due to seasonal effects such as climate on the availability of plant materials

- Identify all trees shrubs and herbaceous plants from previous Dendrology courses NRT102 and NRT107
- Identify 15-20 fern species
- Identify 28-35 mosses
- Identify 3-6 club mosses
- Identify 3-5 horse tails
- Identify 10-15 lichens
- Identify 4-7 grasses
- Identify 5-8 sedges
- Identify 12-15 lichens

2. Identify Thirty 30-40 Aquatic plants

Potential Elements of the Performance:

- Identify 10-15 submergent plant species
- Identify 12-15 emergent plant species
- Identify 5 -10 floating plant species

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3. Identify up to (8) Terrestrial Ecosystems.

Potential Elements of the Performance:

- Using field guides key out 2-5 forest ecosites in Central Ontario
- Using field guide key out 1- 3 wetland ecosites

4. Demonstrate a familiarity with forest ecosystem classification systems used across Canada.

Potential Elements of the Performance:

- List the basic parameters used in ecosystem classification
- Demonstrate knowledge of the ecological land classification system in Ontario
- Demonstrate ability to use vegetation keys in classifying ecosystems to the ecosite level
- Relate characteristics of ecosites to moisture and nutrient status using ecosite ordination diagrams
- Demonstrate ability to link ecosites to management applications
- Identify landforms in the field and identify characteristics of land forms and relate these to biological and geological properties of ecosites

5. Identify and describe selected plant features such as flowers, fruiting structures, leaf and stem morphology and use scientific nomenclature when identifying plants

Potential Elements of the Performance:

- Identify, describe and compare using botanical terminology the flowering and fruiting structures of the grasses, sedges and rushes
- Identify, describe and compare the reproductive structures and processes found in ferns mosses and liverworts
- Describe the relationship between plant and fungi in the lichens
- Using taxonomic features and botanical nomenclature use keys to identify selected plant species
- Use the binomial system of plant classification and latinized names to correctly identify plant species and genera
- Describe botanical and ecological characteristics of selected species and families of plants.

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### III. TOPICS:

1. In field and in the lab identify plants.

- Identify mosses and liverworts
- Identify ferns
- Identify grasses and sedges and rushes
- Identify club mosses
- Identify horsetails
- Identify emergent aquatic plants
- Identify submergent aquatic plants
- Identify floating aquatic plants
- Identify lichens

This will constitute **60%** of the course grade. Plant identification will be cumulative. Students will be expected to be able to identify all plants covered in the course by the end of the course. Some tests may be open book at the discretion of the instructor.

2. MOSS COLLECTION -

The project outlined below will be referred to as the moss collection. Students under the direction of the instructor will prepare a moss collection and submit the collection for grading. The moss collection will be organized and structured according to the instructor's specifications. The collection must be submitted at the time and place specified by the instructor. The moss collection may also contain specified liverworts and lichens.

This will constitute **10%** of the course grade.

3. Use Forest and wetland ecosystem classification field manuals to assist in defining ecological classification units of forested and wetland sites.

- Use vegetation keys to determine ecosite type
- Link ecosite type to wildlife and timber management activities
- Link surficial geology to ecosite classification and site type

This will constitute **10%** of the course grade.

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4. List the basic key elements of an ecosystem classification system.
- Interpret the information on a vegetation type fact sheet from the central Ontario FEC manual.
  - List the classification units in ascending order of scale used in the Ontario Ecological Land Classification System.
  - Compare the Ontario system of forest ecosystem classification to systems used in other provinces
  - Interpret the information on an ecosite fact sheet from the central Ontario FEC manual
  - Identify, contrast and compare bogs, fens swamps and marshes

This will constitute **10%** of the course grade.

5. Describe biological processes and taxonomic features of selected plants covered in the course.
- Flowering and non flowering reproductive structures and processes
  - Key morphological structures
  - Family characteristics of selected representative plant groups
  - Plant ID keys
  - Recognition and naming of plant species using botanical and site description characteristics for identification
  - Matching individual species and plant communities to ecosite descriptions

This will constitute 10% of the course **grade**.

#### **IV. REQUIRED RESOURCES/TEXTS/MATERIALS:**

- 1, Field Guide to Forest Ecosystems of Central Ontario
- 2, Wetland Plants of Ontario
- 3, Forest Plants of Central Ontario
- 4, Plant Diversity Study Guide

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## V. EVALUATION PROCESS/GRADING SYSTEM:

The following semester grades will be assigned to students in postsecondary courses:

<u>Grade</u>	<u>Definition</u>	<u>Grade Point Equivalent</u>
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.	
U	Unsatisfactory 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 <i>Policies &amp; Procedures Manual – Deferred Grades and Make-up</i> ).	

There will be 6 plant ID tests. The best 5 ID tests will count towards the final grade. Students may miss one ID test without penalty.

ID TESTS	60%
MOSS COLLECTION	10%
FINAL TEST (based on topics 4&5)	20%
FEC SITE CLASS. ASSIGNS.	<u>10%</u>
TOTAL	100%

**Please note that in order to receive an A grade or better in this course, students will be required to show the ability use the genus and specific epithet spelled correctly when referring to plants covered in this course ON TESTS & ASSIGNMENTS**

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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 post-secondary institutions.

Plagiarism:

Students should refer to the definition of "academic dishonesty" in Student Rights and Responsibilities. Students who engage in "academic dishonesty" will receive an automatic failure for that submission and/or such other penalty, up to and including expulsion from the course/program, as may be decided by the professor/dean. In order to protect students from inadvertent plagiarism, to protect the copyright of the material referenced, and to credit the author of the material, it is the policy of the department to employ a documentation format for referencing source material.

Course outline amendments:

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.

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**PLEASE NOTE:**

- Six (6) identification plant tests will be given for a total of 60% of the course grade. Each will potentially account for 10% of the grade.
- The student's best 5 identification tests will be averaged towards their final grade. The Final best 5 ID tests will each account for 12% of the final grade.
- The 6 ID tests will include a variety of plants previously covered in this course form any of the plant groups listed under topics section 1. Emphasis will be placed on new material covered since the last test.
- Students must attend 80% of the scheduled class time to receive C grade or better. Field trips are not optional. A student who misses 3 or more field trips may be asked to repeat the entire course.
- Students must wear appropriate clothing and safety equipment when on out door scheduled field exercises. This will normally include a hard hat, safety boots and a raincoat in wet weather. A student who comes prepared for an out exercise in shoes will be marked absent and will not attend the class and this includes writing tests given in the outdoors.
- Any student who in the judgement of the instructor behaves inappropriately in scheduled classes or copies the work of another student without the instructor's permission, will be subject to all the terms and conditions in the student's rights and responsibilities hand book and may after, reviewing the situation with the instructor, be asked to leave the course with an R grade.

**VII. PRIOR LEARNING ASSESSMENT:**

Students who wish to apply for advanced credit in the course should consult the instructor.

**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.