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Course Name

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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. 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 CICE student, with the assistance of an Educational Assistant will demonstrate a basic 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 some of the trees, shrubs and herbaceous plants from previous Dendrology courses NRT102 and NRT107
- identify 7 fern species\*
- identify 12 mosses\*
- identify 3 club mosses\*
- identify 1 horse tail\*
- identify 6 lichens\*
- identify 3 grasses\*
- identify 3 sedges\*
- identify 1 rush\*

\* Approximately

### **2. Identify approximately 22 aquatic plants.**

#### Potential Elements of the Performance:

- identify various submergent plant species
- identify various emergent plant species
- identify various floating plant species

---

Course Name

---

Code No.

**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 guides, 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 the 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, 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 generally describe characteristics of selected families of plants
- research botanical and ecological information using the internet

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Course Name

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Code No.**III. TOPICS:**

1. In field and in the lab, identify the following plants:
  - mosses and liverworts
  - ferns
  - grasses, sedges and rushes
  - club mosses
  - horsetails
  - emergent aquatic plants
  - submergent aquatic plants
  - floating aquatic plants
  - lichens
  - describe biological processes such as reproduction in selected plants and plant groups
  - use scientific nomenclature, terminology and taxonomy to describe and classify selected plants

**This will constitute 50% of the course grade.** Plant identification will be cumulative. Students will be expected to be able to identify all plants covered in this course by the end of the semester. Plant ID tests will take place both inside and outdoors including pop quizzes. Students will complete information and descriptive data sheets for 5 selected Pteridophytes using information gathered from internet web sites. **This will constitute 10% of the course grade.**

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 developing ecological descriptions of forested and wetland sites.
  - use keys to determine ecosite type
  - link ecosite type to wildlife and timber management activities
  - link surficial geology to ecosite classification and site type
  - identify, contrast and compare bogs, fens, swamps and marshes

**This will constitute 15% of the course grade.**

---

 Course Name

---

 Code No.

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.

**This will constitute 15% 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

#### V. EVALUATION PROCESS/GRADING SYSTEM:

The following semester grades will be assigned to students in post secondary 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
F (Fail)	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> ).	

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 Course Name

---

 Code No.

There will be 5 plant Id tests  
 The best 4 Id tests will count towards the final grade. Students may miss one id test with-out penalty

ID TESTS	50%
PTERIDOPHYTES ASSIGN.	10%
MOSS COLLECTION	10%
FINAL TEST	20%
ASSIGNMENTS / QUIZZES	10%
TOTAL	100%

**Please note that in order to receive an A+ grade in this course, students will be required to show the ability to write the genus and specific epithet spelled correctly when referring to plants covered in this course on ID TESTS.**

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 E1101 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.

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Course Name

---

Code No.

**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.

**PLEASE NOTE:**

- Five (5) identification plant tests will be given for a total of 50% of the course grade.
- The student’s best 4 identification tests will be averaged towards their final grade.
- 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 outdoor 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 outdoor exercise in shoes will be marked absent, and will not be allowed to attend the class. This includes not being allowed to write 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, after reviewing the situation with the instructor, may be required 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.

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Course Name

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Code No.**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.

**CICE Modifications:****Preparation and Participation**

1. An Integrative Educational Assistant will attend class with the student(s) to assist with inclusion in the class and to take notes.
2. Students will receive support in and outside of the classroom (i.e. tutoring, assistance with homework and assignments, preparation for exams, tests and quizzes.)
3. Study notes will be geared to test content and style which will match with modified learning outcomes.
4. Although the Integrative Educational Assistant may not attend all classes with the student(s), support will always be available. When the Integrative Educational Assistant does attend classes he/she will remain as inconspicuous as possible.

**CICE Modifications:****A. Tests may be modified in the following ways:**

1. Tests which require essay answers may be modified to short answers.
2. Short answer questions may be changed to multiple choice or the question may be simplified so the answer will reflect a basic understanding.
3. Tests which use fill in the blank format may be modified to include a few choices for each question, or a list of choices for all questions. This will allow the student to match or use visual clues.
4. Tests in the T/F or multiple choice format may be modified by rewording or clarifying statements into layman's or simplified terms. Multiple choice questions may have a reduced number of choices.

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Course Name

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Code No.

**B. Tests will be written in the Learning Assistance Centre with assistance from an Integrative Educational Assistant.**

***The Integrative Educational Assistant may:***

1. Read the test question to the student.
2. Paraphrase the test question without revealing any key words or definitions.
3. Transcribe the student's verbal answer.
4. Test length may be reduced and time allowed to complete test may be increased.