



## COURSE OUTLINE: NRT0140 - FOREST PLANT BIOLOGY

Prepared: Bob Knudsen

Approved: Martha Irwin, Chair, Community Services and Interdisciplinary Studies

<b>Course Code: Title</b>	NRT0140: FOREST PLANT BIOLOGY FOR CICE
<b>Program Number: Name</b>	1120: COMMUNITY INTEGRATN
<b>Department:</b>	C.I.C.E.
<b>Semesters/Terms:</b>	19F
<b>Course Description:</b>	This course provides the student with a practical understanding of the classification, structure and functioning of plants in general with special consideration for woody plants. The concepts presented in this course will have direct application in a number of courses in the Forestry Technician Program.
<b>Total Credits:</b>	3
<b>Hours/Week:</b>	3
<b>Total Hours:</b>	45
<b>Prerequisites:</b>	There are no pre-requisites for this course.
<b>Corequisites:</b>	There are no co-requisites for this course.
<b>Essential Employability Skills (EES) addressed in this course:</b>	<p>EES 1 Communicate clearly, concisely and correctly in the written, spoken, and visual form that fulfills the purpose and meets the needs of the audience.</p> <p>EES 2 Respond to written, spoken, or visual messages in a manner that ensures effective communication.</p> <p>EES 3 Execute mathematical operations accurately.</p> <p>EES 4 Apply a systematic approach to solve problems.</p> <p>EES 5 Use a variety of thinking skills to anticipate and solve problems.</p> <p>EES 6 Locate, select, organize, and document information using appropriate technology and information systems.</p> <p>EES 7 Analyze, evaluate, and apply relevant information from a variety of sources.</p> <p>EES 8 Show respect for the diverse opinions, values, belief systems, and contributions of others.</p> <p>EES 9 Interact with others in groups or teams that contribute to effective working relationships and the achievement of goals.</p> <p>EES 10 Manage the use of time and other resources to complete projects.</p> <p>EES 11 Take responsibility for ones own actions, decisions, and consequences.</p>
<b>General Education Themes:</b>	Science and Technology
<b>Course Evaluation:</b>	Passing Grade: 50%, D
<b>Other Course Evaluation &amp; Assessment Requirements:</b>	Academic success is directly linked to attendance. Missing more than 1/3 of the course hours in a semester shall result in a F Grade for this Course.
<b>Books and Required Resources:</b>	Introductory Plant Biology by K.A. Stern Publisher: Wm. C. Brown Publishers



SAULT COLLEGE | 443 NORTHERN AVENUE | SAULT STE. MARIE, ON P6B 4J3, CANADA | 705-759-2554

**Course Outcomes and Learning Objectives:**

Upon successful completion of this course, the CICE student, with the assistance of a Learning Specialist will acquire varying levels of skill development relevant to the following learning outcomes:

<b>Course Outcome 1</b>	<b>Learning Objectives for Course Outcome 1</b>
1. Describe what a species is and how all species relate in their evolutionary history.	1.1 Apply the classification. List various characteristics used to practically distinguish different species. 1.2 Describe and use the binomial system of classification. 1.3 Explain phylogeny and system.
<b>Course Outcome 2</b>	<b>Learning Objectives for Course Outcome 2</b>
2. Describe the structure and functioning of a plant cell.	2.1 List and describe the function and interactions of the following cell components: cell wall, cell membrane, nucleus, nucleolus, chloroplast, mitochondria, ribosomes, golgi apparatus, vacuoles and endoplasmic reticulum. 2.2 Describe the structural roles of carbohydrates, lipids, amino acids and nucleic acids in cells.
<b>Course Outcome 3</b>	<b>Learning Objectives for Course Outcome 3</b>
3. Describe the anatomy, function and inter-relationships of specified structures of a plant.	3.1 Describe cells and tissues of leaves, stems, and roots. 3.2 Distinguish by anatomical features between flowering plants and gymnosperms and between monocots and dicots. 3.3 Recognize cells and tissues of leaves, stems and roots from microscopic slides.
<b>Course Outcome 4</b>	<b>Learning Objectives for Course Outcome 4</b>
4. Metabolic processes.	4.1 Describe the processes involved in photosynthesis. 4.2 Describe the processes involved in respiration 4.3 Describe the processes involved in transpiration. 4.4 Describe the processes involved in water, soils and nutrient uptake.
<b>Course Outcome 5</b>	<b>Learning Objectives for Course Outcome 5</b>
5. Describe plant growth process.	5.1 Describe the various meristematic regions in plant including vascular cambium, cork cambium and apical meristems. 5.2 Describe the roles of auxins and giberellins in plant growth. 5.3 Distinguish between primary and secondary growth. 5.4 Describe the process of annual growth in woody plants.
<b>Course Outcome 6</b>	<b>Learning Objectives for Course Outcome 6</b>
6. Describe reproductive processes in plants.	6.1 Differentiate between sexual and asexual reproduction. 6.2 List and give examples of 6 different vegetative methods of reproduction. 6.3 Distinguish between haploid and diploid conditions, gametophyte and sporophyte generations, spores and seeds.
<b>Course Outcome 7</b>	<b>Learning Objectives for Course Outcome 7</b>
7. Describe life cycles of various plant groups.	7.1 Distinguish between different stages in the life cycles of ferns, mosses, club mosses, conifers and flowering plants. 7.2 Draw from microscope slides specified life stages.

**Evaluation Process and Grading System:**

<b>Evaluation Type</b>	<b>Evaluation Weight</b>
Lab Assignments	60%



SAULT COLLEGE | 443 NORTHERN AVENUE | SAULT STE. MARIE, ON P6B 4J3, CANADA | 705-759-2554

Tests/Exams	40%
-------------	-----

## CICE Modifications:

### Preparation and Participation

1. A Learning Specialist 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 Learning Specialist may not attend all classes with the student(s), support will always be available. When the Learning Specialist does attend classes he/she will remain as inconspicuous as possible.

**A.** Further modifications may be required as needed as the semester progresses based on individual student(s) abilities and must be discussed with and agreed upon by the instructor.

#### **B. 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.

#### **C. Tests will be written in CICE office with assistance from a Learning Specialist.**

##### ***The Learning Specialist 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.

#### **D. Assignments may be modified in the following ways:**

1. Assignments may be modified by reducing the amount of information required while maintaining general concepts.
2. Some assignments may be eliminated depending on the number of assignments required in the particular course.

##### ***The Learning Specialist may:***

1. Use a question/answer format instead of essay/research format
2. Propose a reduction in the number of references required for an assignment
3. Assist with groups to ensure that student comprehends his/her role within the group
4. Require an extension on due dates due to the fact that some students may require additional time to process information
5. Formally summarize articles and assigned readings to isolate main points for the student
6. Use questioning techniques and paraphrasing to assist in student comprehension of an



assignment

**E. Evaluation:**

Is reflective of modified learning outcomes.

**NOTE:** Due to the possibility of documented medical issues, CICE students may require alternate methods of evaluation to be able to acquire and demonstrate the modified learning outcomes

**Date:**

October 4, 2019

**Addendum:**

Please refer to the course outline addendum on the Learning Management System for further information.

