

SAULT COLLEGE OF APPLIED ARTS AND TECHNOLOGY

SAULT STE. MARIE, ONTARIO



Sault College

COURSE OUTLINE

COURSE TITLE: PARK PROTECTION

CODE NO. : NRT211 **SEMESTER:** 3

PROGRAM: PARKS AND OUTDOOR RECREATION

AUTHOR: John Clement

DATE: June 2004 **PREVIOUS OUTLINE DATED:** Sept 2003

APPROVED:

	_____	_____
	DEAN	DATE

TOTAL CREDITS: 3

PREREQUISITE(S): None

HOURS/WEEK: 4

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I. **COURSE DESCRIPTION:**

The student will examine tree health, abiotic and biotic forest pathogens, forest insects, forest fires, and the impacts of recreation as they relate to the protection of ecological health objectives and safety in parks, recreational areas and protected areas. Numerous readings on Park Protection issues will be examined and discussed. Individual tree health will be assessed. Life cycles of major native and introduced forest insects and diseases are examined. Integrated pest management, control and ecological impacts as they relate to park ecosystem health objectives will be studied. Fire ecology, fire suppression, fire protection, fire use (prescribed burning) and fire weather index are introduced. Other park protection issues include; assessing the impacts of recreational activities on parks, invasive plant / animal species, restoration concepts, the concept of ecological carrying capacity will be discussed.

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

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

1. **Describe identification features and life cycles of six orders of forest insects including Lepidoptera, Coleoptera, Hymenoptera, Diptera, Hemiptera, and Homoptera found in park areas.**

Potential Elements of the Performance:

Recognize and label diagrams of various insect body parts and body regions.

Describe how forest insects are classified according to taxonomy feeding location and host species. Draw diagrams of the life cycles for the six orders.

These outcomes will constitute approximately 20% of the course

2. **Describe the ecological role and management of, forest insects in park areas.**

Potential Elements of the Performance:

Recognize and identify signs and symptoms of insect damage.

Explain natural control methods including virus, bacteria, and introduced pests. Explain environmental impacts on insect populations including temperature, humidity, wind, precipitation, and fire.

Describe elements of integrated pest management

Discuss the limitations and environmental implications of each type of control method.

These outcomes will constitute approximately 10% of the course.

3. **Describe and identify biotic and abiotic stressors of forest trees in park areas.**

Potential Elements of the Performance:

Classify forest tree diseases by taxonomic, biotic, abiotic, decline, host, part of tree, parasitic / saprobic, and necrotic / atrophic / hypertrophic methods. Recognize and identify signs and symptoms of forest disease.

Identify and describe abiotic stress factors that affect tree health.

Identify and describe biotic stress factors as agents of tree disease including fungi, bacteria, viruses and parasitic plants.

Collect and identify hard body fungus types for interpretive purposes.

Describe life cycles of mycorrhizae, fungi, rusts and decline diseases.

These outcomes will constitute approximately 10% of the course

4. **Describe the ecological role and management of, biotic and abiotic stressors of forest trees in park areas.**

Potential Elements of the Performance:

Recognize and identify signs and symptoms of forest tree diseases.

Explain environmental influences on forest tree diseases (temperature, cultural damage, construction damage, humidity, wind, precipitation, and fire).

Complete a hazard tree assessment in a park development zone setting.

Describe park management strategies to protect tree health

These outcomes will constitute approximately 10% of the course

5. **Describe the ecological role and management of, forest fires in park areas.**

Potential Elements of the Performance:

Describe the Canadian Forest Fire Weather Index

Explain the role of forest fire in fire dependant ecosystems.

Operate forest fire suppression equipment (pumps, hand tools, etc.).

Describe fire use (prescribed burn) objectives and planning procedures.

Discuss the environmental implications of forest fire suppression vs. fire management in park areas.

These outcomes will constitute approximately 30% of the course

6. **Describe other park protection issues.**

Potential Elements of the Performance:

Name various park system plans, which guide park managers efforts with respect to natural disturbances (The "Grey" Book, National Parks Act, State of the Park reports, etc.)

Recognize 5 invasive plant species and describe impacts in park management.

Define the concept of ecological integrity.

Discuss the rationale for, and principles of, restoration activities

These outcomes will constitute approximately 20% of the course

III. TOPICS: Are grouped in four major areas

1. Forest Fire Management
2. Forest Entomology
3. Forest Pathology.
4. Park protection issues.

IV. REQUIRED RESOURCES/TEXTS/MATERIALS:

Readings in Park Protection. Sault College of Applied Arts and Technology

Barron, G. L., 1999. Mushrooms of Ontario and Eastern Canada. Lone Pine Publishing, Vancouver.

V. EVALUATION PROCESS/GRADING SYSTEM:

Insect ID Test	10%
Entomology Test	10%
Pathology Test	10%
Hard Body Fungus Collection	10%
Forest Fire Weather Ex.	10%
Forest Fire Test	10%
Park Protection Reading Assignment/ Presentaton	20%
Final Exam	20%

The following semester grades will be assigned to students:

Grade	<u>Definition</u>	<i>Grade Point Equivalent</i>
A+	90 – 100%	4.00
A	80 – 89%	3.00
B	70 - 79%	3.00
C	60 - 69%	2.00
D	50 – 59%	1.00
F (Fail)	49% and below	0.00
CR (Credit)	Credit for diploma requirements has been awarded.	
S	Satisfactory achievement in field /clinical placement or non-graded subject area.	

U	Unsatisfactory achievement in field/clinical placement or non-graded subject area.
X	A temporary grade limited to situations with extenuating circumstances giving a student additional time to complete the requirements for a course.
NR	Grade not reported to Registrar's office.
W	Student has withdrawn from the course without academic penalty.

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 professor and/or the Special Needs office. Visit Room E1101 or call Extension 703 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 postsecondary 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.

<include any other special notes appropriate to your course>

VII. PRIOR LEARNING ASSESSMENT:

Students who wish to apply for advanced credit in the course should consult the professor. Credit for prior learning will be given upon successful completion of a challenge exam or portfolio.

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.