

SAULT COLLEGE OF APPLIED ARTS AND TECHNOLOGY

SAULT STE. MARIE, ON



COURSE OUTLINE

COURSE TITLE:

PARK PROTECTION

CODE NO.:

NRT2110

SEMESTER: 3

PROGRAM:

PARKS AND OUTDOOR RECREATION

AUTHOR:

MARK CROFTS

DATE:

MAY 2002

PREVIOUS OUTLINE DATED: MAY 2001

APPROVED: _____

DEAN

DATE

TOTAL CREDITS 3

PREREQUISITE(S): None

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COURSE DESCRIPTION:

- I.** This course examines natural disturbances (forest fires, forest insects, tree diseases and abiotic stressors); their role in the ecological health of and their management in, parks and protected areas. Numerous case studies will be examined (Pukaskwa National Park, Quetico Provincial Park, etc.). Fire ecology, fire suppression and fire use (prescribed burning) concepts, tools and techniques are introduced. Students will visit several prescribed burn sites. The life cycles of major native and introduced forest insects and diseases are examined. Students will examine abiotic stressors of forest and landscape trees. Hazard tree assessments will be completed. We will discuss control issues (integrated pest management) and ecological impacts as they relate to park ecosystem health objectives. Other park protection issues include; assessing the impacts of recreational activities on parks, invasive plant species, restoration concepts, the concept of ecological integrity, etc. Students will lead a Bur Oak restoration project in the Sault Ste. Marie area.

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 15% 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 15% 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 15% 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 15% 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 25% 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 15% of the course

III. TOPICS:

Topics in this course are grouped into four major fields of study for evaluation purposes: (See Evaluation section for actual breakdown)

- 1) Forest Fire Management.
- 2) Forest Entomology.
- 3) Forest Pathology.
- 4) Other 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.

_____. Forest Health in Canada: An Overview, 1998. Natural Resources Canada, Canadian Forest Service. Government of Canada. **(supplied by instructor)**

Other Reference Materials (Optional):

Fischer, 1996. Entomology / Pathology Study Guide. Sault College of Applied Arts and Technology

Fischer, 1996. Forest Protection Study Guide. Sault College of Applied Arts and Technology

Edmonds, R.L., 1999. Forest Health and Protection. McGraw Hill

_____. Ecological Restoration (Journal). University of Wisconsin Press

V. EVALUATION PROCESS/GRADING SYSTEM

Entomology Assignments	15%
Entomology Test	10%
Pathology Assignments	15%
Pathology Test	10%
Forest Fire Assignments	15%
Forest Fire Test	10%
Park Protection Assignment	20%
Bur Oak Restoration	5%

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
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 – limited to situations with extenuating circumstances giving a student additional time to complete the requirements for a course (see Policies & Procedures Manual - Deferred Grades and Make-up).	
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 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, as may be decided by the professor. 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.

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.

Health and Safety:

The operation, transport (carrying) and use of fire equipment in rough terrain and in inclement weather is inherently physically demanding. The use of fire management planning aids (software) poses a significant thinking challenge. It is the responsibility of the student to discuss any potential difficulties with the Learning Assistance Centre. Students must wear appropriate safety gear during field operations (eye, hearing, head, foot protection) and dress appropriate to the weather.

Attendance:

Attendance at labs, lectures and field trips is important. There is a great deal of effort in planning, scheduling, budgeting, etc. involved in all aspects of the course. Students missing more than one lecture, one lab and one field trip will receive an “R” grade, unless there are exceptional circumstances.

A field trip schedule will be provided to students before the end of September. Graded **quizzes will be given at the end of each trip.**

Note taking:

While the course texts are a significant source of information for the course, they are not the only source. Students must take notes summarizing additional material that is presented in class. All material is valid test material.

Rewrites/Supplementary Exams:

There will be no rewrites/supplementary exams in this course.

Assignments:

All assignments must be submitted on time to pass the course, or be penalized 10% of the total mark per day including weekends. Check each assignment for the due date and time. Anything handed in past this time is late.

Assignments must be word-processed and follow other formatting specifications outlined by the instructor. Students are responsible for ensuring that their assignments are received by the instructor.

Class Conduct:

Classes will be conducted in the same manner, as would a meeting in the work place environment. Eating is not permitted, except for light snacks during group work or study periods.

VII. PRIOR LEARNING ASSESSMENT:

Students who wish to apply for advanced credit in the course should consult the instructor. Credit for prior learning will be given upon successful completion of the following:

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.