



COURSE OUTLINE: NRT211 - PROTECT PARK VALUES

Prepared: John Clement

Approved: Sherri Smith, Chair, Natural Environment, Business, Design and Culinary

Course Code: Title	NRT211: PROTECTING PARK VALUES
Program Number: Name	5212: ADVENTURE RECREATION
Department:	NATURAL RESOURCES PRG
Academic Year:	2022-2023
Course Description:	This course examines the effects of natural and human created disturbances (forest fires, forest insects, tree diseases and recreational stressors) on the ecological health of and their management in, parks and protected areas. Fire ecology, fire suppression and fire use (prescribed burning) concepts, tools and techniques are introduced. Park protection issues will be covered including: assessing and ameliorating the impacts of recreational activities on parks, invasive plant species, restoration concepts, the concept of ecological integrity, and commemorative heritage protection.
Total Credits:	3
Hours/Week:	3
Total Hours:	42
Prerequisites:	There are no pre-requisites for this course.
Corequisites:	There are no co-requisites for this course.
Substitutes:	NRT139, NRT243
Vocational Learning Outcomes (VLO's) addressed in this course:	5212 - ADVENTURE RECREATION
Please refer to program web page for a complete listing of program outcomes where applicable.	VLO 1 Demonstrate clear, concise and industry appropriate written, spoken and visual communication skills.
	VLO 2 Identify, discuss, organize and assess common Flora & Fauna species found throughout ON, including biological and physiological characteristics.
	VLO 5 Start and manage a career in the Adventure Recreation and Parks field.
	VLO 7 Describe the scientific method and how it shapes our understanding of the ecology of the natural world.
	VLO 8 Demonstrate an understanding of sustainable development and apply the foundations in the natural environment.
	VLO 9 Safely operate and maintain equipment used in Adventure Recreation and Park operations.
VLO 11 Analyze, evaluate and apply subjective and objective safety considerations for Adventure Recreation and Parks activities.	
Essential Employability Skills (EES) addressed in this course:	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.
	EES 2 Respond to written, spoken, or visual messages in a manner that ensures effective communication.



	EES 4 Apply a systematic approach to solve problems. EES 5 Use a variety of thinking skills to anticipate and solve problems. EES 6 Locate, select, organize, and document information using appropriate technology and information systems. EES 7 Analyze, evaluate, and apply relevant information from a variety of sources. EES 8 Show respect for the diverse opinions, values, belief systems, and contributions of others. EES 9 Interact with others in groups or teams that contribute to effective working relationships and the achievement of goals. EES 10 Manage the use of time and other resources to complete projects. EES 11 Take responsibility for ones own actions, decisions, and consequences.								
General Education Themes:	Science and Technology								
Course Evaluation:	Passing Grade: 50%, D A minimum program GPA of 2.0 or higher where program specific standards exist is required for graduation.								
Other Course Evaluation & Assessment Requirements:	Academic success is directly linked to attendance. Missing more than 1/3 of the course hours in a semester shall result in an F grade for the course.								
Books and Required Resources:	Simon and Schuster Guide to Mushrooms by Lincoff Publisher: Touchstone								
Course Outcomes and Learning Objectives:	<table border="1"> <thead> <tr> <th>Course Outcome 1</th> <th>Learning Objectives for Course Outcome 1</th> </tr> </thead> <tbody> <tr> <td>Assess the health of forest trees in park areas.</td> <td>1.1 Complete a health assessment of a tree in a park area including live crown to height ratio, percent crownal necrosis, crown density, bark vigour, and visible pathogens. 1.2 Recognize and identify signs and symptoms of forest tree diseases. 1.3 Describe and identify biotic and abiotic stressors of forest trees in park areas. 1.4 Explain environmental influences on forest tree health including temperature, cultural damage, construction damage, humidity, wind, precipitation, and fire. 1.5 Describe park management strategies to protect tree health. 1.6 Research forest pathogens by species.</td> </tr> <tr> <th>Course Outcome 2</th> <th>Learning Objectives for Course Outcome 2</th> </tr> <tr> <td>Describe the ecological role, and management, of biotic and abiotic stressors of forest trees in park areas.</td> <td>2.1 Classify forest tree diseases by taxonomic, biotic, abiotic, decline, host, part of tree, parasitic / saprobic, and necrotic / atrophic / hypertrophic methods. 2.2 Recognize and identify signs and symptoms of forest disease. 2.3 Identify and describe abiotic stress factors that affect tree health. 2.4 Identify and describe biotic stress factors as agents of tree</td> </tr> </tbody> </table>	Course Outcome 1	Learning Objectives for Course Outcome 1	Assess the health of forest trees in park areas.	1.1 Complete a health assessment of a tree in a park area including live crown to height ratio, percent crownal necrosis, crown density, bark vigour, and visible pathogens. 1.2 Recognize and identify signs and symptoms of forest tree diseases. 1.3 Describe and identify biotic and abiotic stressors of forest trees in park areas. 1.4 Explain environmental influences on forest tree health including temperature, cultural damage, construction damage, humidity, wind, precipitation, and fire. 1.5 Describe park management strategies to protect tree health. 1.6 Research forest pathogens by species.	Course Outcome 2	Learning Objectives for Course Outcome 2	Describe the ecological role, and management, of biotic and abiotic stressors of forest trees in park areas.	2.1 Classify forest tree diseases by taxonomic, biotic, abiotic, decline, host, part of tree, parasitic / saprobic, and necrotic / atrophic / hypertrophic methods. 2.2 Recognize and identify signs and symptoms of forest disease. 2.3 Identify and describe abiotic stress factors that affect tree health. 2.4 Identify and describe biotic stress factors as agents of tree
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	disease including fungi, bacteria, viruses and parasitic plants. 2.5 Collect and identify hard body fungus types for interpretive purposes. 2.6 Describe life cycles of mycorrhizae, fungi, rusts and decline diseases.
Course Outcome 3	Learning Objectives for Course Outcome 3
Describe identification features and life cycles of six orders of forest insects including Lepidoptera, Coleoptera, Hymenoptera, Diptera, Hemiptera, and Homoptera found in park areas.	3.1 Potential elements of the performance: 3.2 Recognize and label diagrams of various insect body parts and body regions. 3.3 Describe how forest insects are classified according to taxonomy, feeding location and host species. 3.4 Draw diagrams of the life cycles for the six orders.
Course Outcome 4	Learning Objectives for Course Outcome 4
Describe the ecological role, and management, of forest insects in park areas.	4.1 Recognize and identify signs and symptoms of insect damage. 4.2 Explain natural control methods including virus, bacteria, and introduced pests. 4.3 Explain environmental impacts on insect populations including temperature, humidity, wind, precipitation, and fire. 4.4 Describe elements of integrated pest management. 4.5 Discuss the limitations and environmental implications of each type of control method.
Course Outcome 5	Learning Objectives for Course Outcome 5
Describe the ecological role, and management, of forest fires in park areas.	5.1 Describe the Canadian Forest Fire Weather Index. 5.2 Explain the role of forest fire in fire dependant ecosystems. 5.3 Operate forest fire suppression equipment (pumps, hand tools, etc.) 5.4 Describe fire use (prescribed burn) objectives and planning procedures. 5.5 Discuss the environmental implications of forest fire suppression vs. fire management in park areas.
Course Outcome 6	Learning Objectives for Course Outcome 6
Describe commemorative protection measures and other park protection issues.	6.1 Research a park area and explain the ways the park is protecting commemorative values. 6.2 Explain the role of interpretation in commemorative value protection.

Evaluation Process and Grading System:

Evaluation Type	Evaluation Weight
Commemorative Protection Assignment	10%
Final Exam	20%
Fire Weather Index Assignment	10%
Hard Body Fungus ID Quiz	10%
Hard Body Fungus Photos	10%

	Insect ID Quiz	10%
	Tree Health Assessment	10%
	Tree Pests by Species Research Assignment	20%

Date: June 30, 2022

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