



COURSE OUTLINE: NET302 - INVAS SPECIES MNGMNT

Prepared: Lisa Derickx

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

Course Code: Title	NET302: INVASIVE SPECIES MANAGEMENT
Program Number: Name	5221: NAT ENVIRONMENT TY
Department:	NATURAL RESOURCES PRG
Academic Year:	2022-2023
Course Description:	This course is designed to give students an understanding of the management of invasive species in Canada. In this course, students will learn to identify common invasive species in Ontario and Canada, along with each species` native range, preferred habitat, introduced range, vector for introduction and impacts on its new home. This course also introduces students to the positive and negative effects of species introductions, along with the reasons for those introductions. Students will learn of measures used to mitigate the spread of invasive species to new areas, along with techniques, such as Integrated Pest Management, developed to control invasive species after their arrival. As part of this course students will be required to plan and participate in field activities or surveys related to invasive species.
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.
Vocational Learning Outcomes (VLO's) addressed in this course:	5221 - NAT ENVIRONMENT TY
Please refer to program web page for a complete listing of program outcomes where applicable.	VLO 1 Collect, analyze, interpret and report on data from representative biological and environmental samples.
	VLO 2 Utilize natural resources information technology equipment to assemble, analyze and present identified ecosystem components for purposes of conserving and managing natural resources.
	VLO 3 Apply the basic concepts of science to natural resource conservation and management.
	VLO 4 Plan, design, implement and participate in the maintenance of natural environment assessments.
	VLO 7 Ensure all work is safely completed in adherence to occupational health and safety standards.
	VLO 10 Communicate technical information accurately and effectively in oral, written, visual and electronic forms.
VLO 11 Develop and present strategies for ongoing personal and professional development to enhance performance as an environmental technologist.	
Essential Employability Skills (EES) addressed in	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.



this course:	<p>EES 2 Respond to written, spoken, or visual messages in a manner that ensures effective communication.</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 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>												
General Education Themes:	<p>Civic Life</p> <p>Science and Technology</p>												
Course Evaluation:	<p>Passing Grade: 50%, D</p> <p>A minimum program GPA of 2.0 or higher where program specific standards exist is required for graduation.</p>												
Other Course Evaluation & Assessment Requirements:	<p>Academic success is directly linked to attendance. Missing more than 1/3 of course hours in a semester shall result in an F Grade for the course.</p>												
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>Explain and distinguish between alien and native invasive species. Also discuss modes of introduction for invasive species.</td> <td> <p>1.1 Discuss common terminology related to Invasive Species Management.</p> <p>1.2 Understand differences between invasive species and exotic species.</p> <p>1.3 Understand life history and behavioural characteristics which allow species to successfully establish in new locations.</p> <p>1.4 Outline potential vectors used by species to invade new areas.</p> </td> </tr> <tr> <th>Course Outcome 2</th> <th>Learning Objectives for Course Outcome 2</th> </tr> <tr> <td>Demonstrate knowledge of impacts imposed by invasive species on native species, communities, and biodiversity.</td> <td> <p>2.1 Discuss general impacts of invasive species.</p> <p>2.2 Understand changes in complex communities and ecosystems caused by invasive species.</p> <p>2.3 Understand changes in general ecology and habitat of invaded areas.</p> <p>2.4 Discuss how biodiversity is negatively impacted by invasive species.</p> </td> </tr> <tr> <th>Course Outcome 3</th> <th>Learning Objectives for Course Outcome 3</th> </tr> <tr> <td>Demonstrate knowledge of preventative measures to mitigate transfer of invasive species. Along with selected programs, legislation and</td> <td> <p>3.1 Discuss methods used to mitigate the spread of invasive species</p> <p>3.2 Discuss governmental and non-governmental programs used to educate the public about the control of invasive species.</p> </td> </tr> </tbody> </table>	Course Outcome 1	Learning Objectives for Course Outcome 1	Explain and distinguish between alien and native invasive species. Also discuss modes of introduction for invasive species.	<p>1.1 Discuss common terminology related to Invasive Species Management.</p> <p>1.2 Understand differences between invasive species and exotic species.</p> <p>1.3 Understand life history and behavioural characteristics which allow species to successfully establish in new locations.</p> <p>1.4 Outline potential vectors used by species to invade new areas.</p>	Course Outcome 2	Learning Objectives for Course Outcome 2	Demonstrate knowledge of impacts imposed by invasive species on native species, communities, and biodiversity.	<p>2.1 Discuss general impacts of invasive species.</p> <p>2.2 Understand changes in complex communities and ecosystems caused by invasive species.</p> <p>2.3 Understand changes in general ecology and habitat of invaded areas.</p> <p>2.4 Discuss how biodiversity is negatively impacted by invasive species.</p>	Course Outcome 3	Learning Objectives for Course Outcome 3	Demonstrate knowledge of preventative measures to mitigate transfer of invasive species. Along with selected programs, legislation and	<p>3.1 Discuss methods used to mitigate the spread of invasive species</p> <p>3.2 Discuss governmental and non-governmental programs used to educate the public about the control of invasive species.</p>
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	<p>policies for the prevention and control of alien species introductions.</p> <p>Course Outcome 4</p> <p>Research and explain control and eradication methodologies for designated invasive species.</p> <p>Course Outcome 5</p> <p>Research and discuss habitat rehabilitation methodologies following eradication of invasive species.</p> <p>Course Outcome 6</p> <p>Participate in a field survey related to invasive species.</p>	<p>3.3 Review general policies created by federal and provincial agencies to mitigate the initial introduction and spread of invasive species in Ontario and Canada.</p> <p>Learning Objectives for Course Outcome 4</p> <p>4.1 Discuss specific invasive species in Canada that currently have management protocols/strategies in place. 4.2 Research agencies involved and general methodologies used to control/eradicate the above species. 4.3 Discuss reasons why it is difficult to totally eradicate an undesirable species from a given location. 4.4 Discuss the use of Integrated Pest Management as a useful tool in managing invasive species.</p> <p>Learning Objectives for Course Outcome 5</p> <p>5.1 Understand how habitats can be rehabilitated after the control of an invasive species. 5.2 Discuss negative impacts of some control methodologies on habitat health. 5.3 Discuss governmental, private and public agencies committed to habitat rehabilitation.</p> <p>Learning Objectives for Course Outcome 6</p> <p>6.1 Each student will be required to participate in field studies. 6.2 Students will organize and gather all required equipment for the chosen field survey. 6.3 Sault College Technologists will assist students in the preparation and gathering of required resources. 6.4 A final report outlining the field survey will be completed.</p>						
Evaluation Process and Grading System:	<table border="1"> <thead> <tr> <th>Evaluation Type</th> <th>Evaluation Weight</th> </tr> </thead> <tbody> <tr> <td>Participation</td> <td>30%</td> </tr> <tr> <td>Tests and Assignments</td> <td>70%</td> </tr> </tbody> </table>		Evaluation Type	Evaluation Weight	Participation	30%	Tests and Assignments	70%
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Date:	June 30, 2022							
Addendum:	Please refer to the course outline addendum on the Learning Management System for further information.							