COURSE OUTLINE: NET210 - WETLAND CONSERVATION

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Course Code: Title	NET210: WETLAND CONSERVATION
Program Number: Name	5214: FISH/WILD CONSERVATN 5220: NAT ENVIRONMENT TN 5221: NAT ENVIRONMENT TY
Department:	NATURAL RESOURCES PRG
Semesters/Terms:	21F
Course Description:	This course provides the biological background for conservation and management of wetland habitats, emphasizing aquatic community component identification, biology and structure. Students will learn how to identify and differentiate wetland types using the Ontario Wetland Evaluation System with an emphasis on vegetation forms and vegetation communities. A range of wildlife that rely on or interact with wetlands at any particular life stage will be identified and survey protocols associated with wetland wildlife will be reviewed through scenarios (e.g., Marsh Monitoring Protocol).
Total Credits:	3
Hours/Week:	3
Total Hours:	45
Prerequisites:	There are no pre-requisites for this course.
Corequisites:	There are no co-requisites for this course.
Substitutes:	NRT259
Vocational Learning Outcomes (VLO's) addressed in this course: **Please refer to program web page for a complete listing of program outcomes where applicable.**	**5214 - FISH/WILD CONSERVATN** VLO 1 Demonstrate clear, concise and industry appropriate written, spoken and visual communication skills VLO 2 Identify, discuss, organize and assess common flora and fauna species found throughout Ontario, including biological characteristics VLO 3 Demonstrate the ability to follow standardized protocols to collect field data on fish and wildlife populations in a variety of weather and site conditions. VLO 4 Demonstrate the correct use of standard laboratory equipment and skills required to carry out experiments and study various organisms. VLO 6 Understand the importance of managing fish and wildlife resources in Ontario and related federal, provincial and municipal legislation. VLO 9 Safely operate and maintain equipment used in Fish and Wildlife Conservation. VLO 10 Evaluate and apply current technologies and mathematical concepts used to collect, manage and analyze data. VLO 11 Analyze, evaluate and apply subjective and objective safety considerations.

In response to public health requirements pertaining to the COVID19 pandemic, course delivery and assessment traditionally delivered in-class, may occur remotely either in whole or in part in the 2021-2022 academic year.

5220 - NAT ENVIRONMENT TN

VLO 1	Collect data from representative biological and environmental samples using routine test procedures.
VLO 2	Utilize natural resources equipment and technology to accurately identify 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	Conduct natural environment assessments according to standard field survey methods, including the use of appropriate equipment and materials.
VLO 5	Recommend eco-site conservation and management strategies through the classification of ecosystem components.
VLO 6	Practice principles and ethics associated with natural resource conservation and management issues.
VLO 7	Work safely in adherence to occupational health and safety standards.
VLO 8	Complete all work in compliance with applicable municipal, provincial and federal standards and guidelines.
VLO 9	Contribute to the implementation of natural resource conservation and management.
VLO 11	Communicate technical information accurately and effectively in oral, written and visual forms.
VLO 13	Apply awareness of global environmental issues to conservation and management of natural resources.

5221 - NAT ENVIRONMENT TY

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 6	Practice principles and ethics associated with natural resource conservation and management issues.
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 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.

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	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:	Civic Life 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 a F Grade for this Course Absences during field labs, tests, quizzes, and other assessments will not be excused without documented personal or health reasons. Late assignments will only be accepted within 24 hours past the due date and will be penalized 20% except under extenuating circumstances with appropriate documentation. Changes to the Course Evaluation scheme may be considered during the semester if approved by the majority of the class (majority = approval by 75% of students present at time of vote). The instructor cannot guarantee responses to questions in the 24-hour period prior to assignment deadlines and tests via phone message or email.

Course Outcomes and Learning Objectives:

Course Outcome 1	**Learning Objectives for Course Outcome 1**
Compare the classes of wetlands in Canada, and the ecological characteristics of each class.	1.1 Differentiate wetland types and summarize characteristics of each, including hydrological and vegetation criteria. 1.2 Describe the values of wetlands and identify the major reasons for wetland loss. 1.3 Identify wildlife habitat enhancement features including nesting structures for marsh birds.
Course Outcome 2	**Learning Objectives for Course Outcome 2**
Identify biological components of wetlands.	2.1 Examine different methods for surveying wetland species (e.g., Marsh Monitoring Protocol). 2.2 Identify reptiles, amphibians (visual and auditory), birds (visual and auditory) and mammals that rely on or interact with wetlands at any particular life stage.
Course Outcome 3	**Learning Objectives for Course Outcome 3**

Perform steps involved in completing an assessment of a local wetland and submit a written wetland evaluation using the Ministry of Natural Resources Ontario Wetland Evaluation System.	3.1 Review the procedures described in the Ontario Wetland Evaluation System (Northern Manual) with an emphasis on vegetation forms, vegetation communities and wetland types. 3.2 Complete the Biological, Social, Hydrological and Special Feature Components of OWES using data collected from a local wetland.
Course Outcome 4	**Learning Objectives for Course Outcome 4**
Discuss vegetation management and water-level control for the conservation and enhancement of wetland productivity.	4.1 Describe the ecological effects of implementing the use of water-level control structure, with emphasis on vegetation communities. 4.2 Explain how water control structures are used for biological vegetation control. 4.3 Evaluate the advantages/disadvantages of the methods of physical, chemical, and biological vegetation management.

Evaluation Process and Grading System:

Evaluation Type	Evaluation Weight
Assignments	43%
Tests and Quizzes	57%

Date: September 3, 2021

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