COURSE OUTLINE: NRT110 - INTRO FISH/WILDLIFE

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

Course Code: Title	NRT110: INTRODUCTION TO FISH AND WILDLIFE
Program Number: Name	5214: FISH/WILD CONSERVATN
Department:	NATURAL RESOURCES PRG
Semesters/Terms:	21F
Course Description:	This practical course will introduce the student to collection techniques for terrestrial and aquatic invertebrate specimens, including preparation, mounting and display. Field data will be recorded, analyzed and summarized in report format. Field identification features of common Ontario birds, mammals, fish, reptiles and amphibians will be introduced. Procedures in assessing fish and wildlife populations, relative abundance and diversity of animal populations will be explored. In addition, fish and wildlife employment opportunities will be discussed.
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.
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 7 Recognize the contributions and applications of various science disciplines in the understanding of natural environments. 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.
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 3 Execute mathematical operations accurately.

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	EES 5 Use a variety of thinking skills to anticipate and solve problems. EES 7 Analyze, evaluate, and apply relevant information from a variety of sources. 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.
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. Missed tests/quizzes may only be accommodated with medical proof of absence approved by instructor. Late assignments will only be accepted up to 2 days after the due date and will incur a 20% late penalty. No later assignments will be accepted.
Books and Required Resources:	Amphibians and Reptiles of the Great Lakes Region by Harding, J.H. Publisher: University of Michigan Press. ISBN: 978-0-472-06628-5 Peterson Field Guide to Birds of Eastern and Central North America by Peterson, R. T. Publisher: Houghton Mifflin Harcourt. Edition: 6th ISBN: 978-0-547-15246-2 The Royal Ontario Museum Field Guide to the Freshwater Fishes of Ontario by Holm, E., M. Burridge, and N. Mandrak. Publisher: Royal Ontario Museum, Toronto ISBN: 978-0-88854-459-9 Insect collection and display supplies

Course Outcomes and Learning Objectives:

Course Outcome 1	Learning Objectives for Course Outcome 1
Conduct field surveys to assess habitat, diversity, and relative abundance of fish and wildlife populations.	1.1 Execute field procedures as instructed. 1.2 Assess local Canada goose population numbers using a droppings survey. 1.3 Determine stream discharge using floatation method, current meter and computer software. 1.4 Assess chemical parameters of stream water. 1.5 Correctly calibrate and operate field equipment (compass, GPS, current meter, HACH kit, turbidimeter, surber sampler). 1.6 Collect aquatic invertebrates to assess water quality using a diversity index. 1.7 Construct an appropriate bird feeder for the College woodlot and monitor local bird feeding activity. 1.8 Participate in the annual Deer Check Station on St. Joseph Island during the fall hunt.
Course Outcome 2	**Learning Objectives for Course Outcome 2**

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Collect and identify invertebrate specimens for interpretation and display.	2.1 Correctly use nets, traps and various collection techniques for both aquatic invertebrates and terrestrial insects. 2.2 Properly kill, pin and label 25 terrestrial insect species for invertebrate collection. 2.3 Recognize common terrestrial insect and aquatic invertebrate orders given key characteristics. 2.4 Demonstrate effective use of a bifurcated (dichotomous) key for identification. 2.5 Discuss the ecology of invertebrates and their importance as indicators of environmental health.
Course Outcome 3	**Learning Objectives for Course Outcome 3**
Identify selected fish, bird, mammal, amphibian and reptile species and discuss their interpretive value.	3.1 Recognize selected freshwater fish of Ontario & discuss their biology and ecological values. 3.2 Identify local woodlot bird species by field marks and vocalizations. 3.3 Identify amphibians common to Ontario using images and vocalizations. 3.4 Discuss the ecological/interpretative importance of amphibians. 3.5 Identify common turtles and snakes of Ontario using images. 3.6 Discuss ecological/interpretative importance of reptiles.
Course Outcome 4	**Learning Objectives for Course Outcome 4**
Record, analyze and present field data.	4.1 Complete field forms neatly and accurately. 4.2 Present data in organized tables, graphs and figures. 4.3 Use appropriate software to analyze and interpret data. 4.4 Summarize objectives, methodologies, results and discussion of results in an organized technical report format. 4.5 Photo document, identify and submit a wildlife scat collection of 5 species indigenous to Ontario.
Course Outcome 5	**Learning Objectives for Course Outcome 5**
Evaluate employment opportunities in Fish & Wildlife.	5.1 Discuss career / summer opportunities in Fish and Wildlife based on presentations given by representatives from local agencies.

Evaluation Process and Grading System:

Evaluation Type	Evaluation Weight
Analysis Reports	25%
Collections	15%
Field Forms/Worksheets/Quizzes	60%

Date: August 23, 2021

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

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