COURSE OUTLINE: NRT255 - WILD. SURVEY TECH.

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Approved: Bob Chapman - Dean

Course Code: Title	NRT255: WILDLIFE SURVEY TECHNIQUES
Program Number: Name	5214: FISH/WILD CONSERVATN
Department:	NATURAL RESOURCES PRG
Academic Year:	2025-2026
Course Description:	This course builds on the student`s understanding of the fundamental principles of sampling and survey design in the context of wildlife surveys. Students will gain experience using a variety of methods to survey wildlife populations with an emphasis not only on data collection but also on the analysis, interpretation, and communication of results.
Total Credits:	4
Hours/Week:	4
Total Hours:	56
Prerequisites:	There are no pre-requisites for this course.
Corequisites:	There are no co-requisites for this course.
Substitutes:	NET205, NRT247
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 5 Start and manage their careers in the Fish and Wildlife Conservation field. VLO 7 Recognize the contributions and applications of various science disciplines in the understanding of natural environments. VLO 8 Demonstrate an understanding of sustainable development and apply these principles to the natural environment. 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	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:	EES 2 Respond to written, spoken, or visual messages in a manner that ensures effective communication. EES 3 Execute mathematical operations accurately. 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 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 Absences during field labs, tests, and other assessments will not be excused without documented personal or health reasons and approved by the instructor. In-class quizzes can not be made up due to absence. 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.
Books and Required Resources:	Mammal Tracks & Sign by Elbroch Publisher: National Book Network Edition: 2nd ISBN: ISBN: 9780811737746 ISBN: 9780811767781

Course Outcomes and Learning Objectives:

Course Outcome 1	Learning Objectives for Course Outcome 1
1. Investigate wildlife population assessment methods and techniques used to measure habitat and food use surveys, applying standard protocols and techniques.	1.1 Describe direct wildlife counting methods (complete counts, incomplete counts, and mark-recapture), indirect wildlife counting methods (indices), and wildlife detection methods (presence/absence). 1.2 Understand the common role indices play in addressing inventory and monitoring questions and the advantages and disadvantages for their use. 1.3 Describe common wildlife capture, immobilization, handling, and marking techniques.

	1.4 Competently conduct field surveys: a) determine use, availability and relative quality of winter deer, elk or moose browse, b) survey presence and relative abundance of wildlife (e.g., camera traps, winter track transects, breeding mole salamander searches, nocturnal owl survey or other wildlife surveys), c) identify wildlife tracks and signs (e.g, mammal tracks, gait patterns, scat, and other unique sign, stick nests and the birds or other wildlife that built them) 1.5 Demonstrate ability to analyze, interpret, and communicate field survey results in a technical report. 1.6 Develop a pilot field study project related to the population assessment of a wildlife species by a) stating your research question and research hypothesis, b) defining all pertinent variables, c) providing an overview that justifies your research question and hypothesis, and d) description of your proposed field methods (proposed study area, size of your study area or field site, number of field sites required, tools for sampling, type of sampling, approximate number of samples required). 1.7 Complete in-field wildlife surveys applying standard protocols and techniques (completed during 2nd year field camp early autumn with R. Routledge): 1.7.1 Assess degree of accuracy of locating blind VHF radio-collars placed in known locations using triangulation. 1.7.2 Demonstrate ability to conduct a small mammal survey (trapping, handling, and processing) to determine the relative abundance (captures per 100 trap-nights) and population size (mark and recapture) of small mammals. 1.7.3 Demonstrate ability to properly configure and set camera traps and song meters. 1.7.4 Demonstrate ability to competently record field data 1.7.5 Check established cover board arrays to detect salamanders and measure pertinent habitat variables
Course Outcome 2	**Learning Objectives for Course Outcome 2**
2. Demonstrate knowledge and skills to sex and age wildlife.	2.1 Identify and compare the common techniques used to sex and age wildlife. 2.2 Demonstrate ability to identify raptors to species and sex and age using appropriate morphological features/measurements. 2.3 Demonstrate ability to upland game birds to species and sex and age using appropriate biological features (i.e., wings and tails) for a particular species.
Course Outcome 3	**Learning Objectives for Course Outcome 3**
3. Conduct a literature search and review one or more primary research articles from scholarly journals.	3.1 Differentiate among published forms of science-based literature (e.g., primary, secondary, tertiary and gray literature). 3.2 Demonstrate proficiency in a) developing a clear, organized key word list, b) accessing scientific literature, c) reviewing abstracts for relevance, d) gleaning appropriate information 3.3 Demonstrate the ability to interpret a primary research article by: a) defining the problem that the research proposes to answer and b) describing the process of data collection and

	explain how the methods employed are used to answer the research objectives.

Evaluation Process and Grading System:

Evaluation Type	Evaluation Weight
Camera Trap Assignment (field work and image processing)	17%
Deer browse survey and report	15%
Exit quizzes - may occur following lectures or labs (3% each)	9%
Guest Speaker assignments	5%
Literature Search	4%
Pilot field study	12%
Quizzes	10%
Science Communication Assignment	6%
Sex and aging lab	5%
Song Meter/ Bat Acoustic Recorder program-setup Assignment	2%
Tracks and Signs Assignment	15%

Date: December 2, 2025

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