Prepared: Ryan Namespetra Approved: Sherri Smith

Course Code: Title	NRT251: FALL CAMP - FISH AND WILDLIFE - 2ND YEAR
Program Number: Name	5214: FISH/WILD CONSERVATN
Department:	NATURAL RESOURCES PRG
Semester/Term:	17F
Course Description:	This field camp provides hands-on, practical experiences related to fish and wildlife, aquatic studies, and ecosystem classification. Emphasis is placed on field techniques and surveys to evaluate ecosystems, fish and wildlife populations and assess their habitats (e.g. Ontario Aquatic Habitat (Lake) Inventory Survey, Ontario Stream Assessment Protocol). Students will demonstrate the proper use of field instruments, traps and nets.
Total Credits:	2
Hours/Week:	2
Total Hours:	30
Corequisites:	NRT246, NRT251
Vocational Learning Outcomes (VLO's): **Please refer to program web page for a complete listing of program outcomes where applicable.**	#1. Demonstrate clear, concise and industry appropriate written, spoken and visual communication skills #2. Identify, discuss, organize and assess common flora and fauna species found throughout Ontario, including biological characteristics #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. #6. Understand the importance of managing fish and wildlife resources in Ontario and related federal, provincial and municipal legislation. #7. Recognize the contributions and applications of various science disciplines in the understanding of natural environments. #9. Safely operate and maintain equipment used in Fish and Wildlife Conservation. #10. Evaluate and apply current technologies and mathematical concepts used to collect, manage and analyze data. #11. Analyze, evaluate and apply subjective and objective safety considerations.
Essential Employability Skills (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. #2. Respond to written, spoken, or visual messages in a manner that ensures effective communication.

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	#3. Execute mathematical operations accurately. #4. Apply a systematic approach to solve problems. #5. Use a variety of thinking skills to anticipate and solve problems. #6. Locate, select, organize, and document information using appropriate technology and information systems. #8. Show respect for the diverse opinions, values, belief systems, and contributions of others. #9. Interact with others in groups or teams that contribute to effective working relationships and the achievement of goals. #10. Manage the use of time and other resources to complete projects. #11. Take responsibility for ones own actions, decisions, and consequences.
Course Evaluation:	Satisfactory/Unsatisfactory
Evaluation Process and Grading System:	<table><tr><th>Evaluation Type</th><th>Evaluation Weight</th></tr><tr><td>Participation</td><td>100%</td></tr></table>
Course Outcomes and Learning Objectives:	**Course Outcome 1.** Conduct a lake survey using standard equipment and methodology. **Learning Objectives 1.** Effectively use passive and active fish capture techniques such as gill nets, trap nets, minnow traps and seine nets. Practice efficient and humane procedures to capture and handle fish. Process fish by determining and recording species identification, total length, fork length, weight, and by removing scales for age determination. Select and use appropriate field equipment to collect, document and preserve small littoral fish and aquatic invertebrates. Correctly operate and where necessary, calibrate the following instruments and equipment for assessing water body parameters: YSI meter, and Secchi disc. Accurately map riparian vegetation, substrate types and other shoreline features for physical features map. Safely operate an outboard motor under field conditions. **Course Outcome 2.**

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Assess physical processes and channel structure of a stream.

Learning Objectives 2.

Properly demonstrate the Ontario Stream Assessment Protocol field procedures for assessing physical processes and channel structure.
Accurately define site boundaries of the stream site.
Set up transects and observation points.
Correctly measure hydraulic head (velocity), active channel width, instream cover, maximum particle size, bank stability, bank vegetation and cover type, stream bearing.
Classify stream substrate types.

Course Outcome 3.

Capture Aquatic Invertebrates for collection requirements.

Learning Objectives 3.

Correctly use dip nets and surber samplers in the collection of aquatic invertebrates.
Properly preserve and document invertebrates collected.
Accurately record habitat variables of collection location.

Course Outcome 4.

Complete in-field wildlife surveys applying standard protocols and techniques.

Learning Objectives 4.

Assess degree of accuracy of locating ‘blind’ VHF radio-collars placed in known locations using triangulation.
Demonstrate ability to conduct a small mammal survey (trapping, handling, and processing) to determine the relative abundance (captures per 100 trap-nights) of small mammals.
Measure a range of habitat features pertinent to a small mammal community in a boreal forest stand
Utilize remote cameras, covered tracking plates, and scent stations to detect the presence of wildlife.

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	Check established cover board arrays to detect salamanders. Identify and photograph wildlife tracks and signs. Demonstrate ability to record complete, legible and accurate field notes. Discuss the limitations of wildlife population surveys (i.e., direct counts vs. indices vs. detection). **Course Outcome 5.** Organize field data into neat, accurate and complete standardized field forms and field maps. **Learning Objectives 5.** Construct an accurate lake physical features map. Neatly and accurately complete a Lake Summary form, Gill Net Catch Record Forms, Field Collection Records, Scale Sample Envelops associated with a lake survey. Neatly and accurately complete field forms associated with the Ontario Stream Assessment Protocol. Perform basic calculations to summarized survey data. Neatly and accurately complete field forms for wildlife survey data.
Date:	Wednesday, September 6, 2017
	Please refer to the course outline addendum on the Learning Management System for further information.