COURSE OUTLINE: NET201 - 2ND YR FALL CAMP

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

Course Code: Title	NET201: SECOND YEAR FALL FIELD CAMP
Program Number: Name	5214: FISH/WILD CONSERVATN 5220: NAT ENVIRONMENT TN 5221: NAT ENVIRONMENT TY
Department:	NATURAL RESOURCES PRG
Semesters/Terms:	20F
Course Description:	This field camp provides a hands-on, practical experience specific to environmental studies. Emphasis will be placed on field techniques and surveys to evaluate fish 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. Students will classify a range of local ecosystems using current Ontario Ecological Land Classification tools at the Ecosite level. Small mammal live-trapping surveys will be conducted and basic radio-tracking skills will be developed using blind tests with VHF radio-collars. Students will also review minimum standards for culvert installations on Crown Land, discuss best practices for erosion and sediment control, and conduct a culvert inspection.
Total Credits:	2
Hours/Week:	2
Total Hours:	30
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 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 11 Analyze, evaluate and apply subjective and objective safety considerations. **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

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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 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 12	Travel accurately in a timely manner in the outdoors using appropriate navigation aids and motorized transport equipment.

5221 - NAT ENVIRONMENT TY

VLO 1	Collect, analyze, interpret and report on data from representative biological and environmental samples.
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 5	Apply eco-site conservation and management principles
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 8	Contribute to the development, implementation and maintenance of environmental management systems.
VLO 10	Communicate technical information accurately and effectively in oral, written, visual and electronic forms.

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.
	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 8	Show respect for the diverse opinions, values, belief systems, and contributions of

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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.

Course Evaluation:	Satisfactory/Unsatisfactory & 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 an `F` grade for the course.
Books and Required Resources:	2nd Year NET Fall Field Camp Manual by Ryan Namespetra

Course Outcomes and Learning Objectives:

Course Outcome 1	Learning Objectives for Course Outcome 1
1. Conduct a lake survey using standard equipment and methodology.	1.1 Effectively use passive and active fish capture techniques such as gill nets, trap nets, minnow traps and seine nets. 1.2 Practice efficient and humane procedures to capture and handle fish. 1.3 Process fish by determining and recording species identification, total length, fork length, weight, and by removing scales, for age determination 1.4 Select and use appropriate field equipment to collect, document and preserve small littoral fish and aquatic invertebrates. 1.5 Correctly operate and where necessary, calibrate the following instruments and equipment: oxygen meter, conductivity meter, pH meter, YSI meter, Secchi disc, Juday plankton net, Eckman dredge. 1.6 Accurately map riparian vegetation, substrate types and other shoreline features for physical features map. 1.7 Correctly operate a Bathymetric Automated Survey System (B.A.S.S.) unit to map lake basin profile. 1.8 Safely operate an outboard motor under field conditions.
Course Outcome 2	**Learning Objectives for Course Outcome 2**
2. Assess physical processes and channel structure of a stream.	2.1 Properly demonstrate the Ontario Stream Assessment Protocol field procedures for assessing physical processes and channel structure. 2.2 Accurately define site boundaries of the stream site. 2.3 Set up transects and observation points. 2.4 Correctly measure hydraulic head (velocity), active channel width, instream cover, maximum particle size, bank stability, bank vegetation and cover type, stream bearing. 2.5 Classify stream substrate types.
Course Outcome 3	**Learning Objectives for Course Outcome 3**
3. Capture aquatic	3.1 Correctly use dip nets in the collection of aquatic

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invertebrates for collection requirements.	invertebrates. 3.2 Proper preserve and document invertebrates collected. 3.3 Accurately record habitat variables of collection location.
Course Outcome 4	**Learning Objectives for Course Outcome 4**
4. Complete in-field wildlife surveys applying standard protocols and techniques.	4.1 Assess degree of accuracy of locating ````````` blind`````````` `` VHF radio-collars placed in known locations using triangulation. 4.2 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. 4.3 Utilize remote cameras, covered tracking plates, and scent stations to detect the presence of wildlife. 4.4 Check established cover board arrays to detect salamanders and measure pertinent habitat variables. 4.5 Identify and photograph wildlife tracks and signs. 4.6 Discuss the limitations of wildlife population surveys (i.e., direct counts vs. indices vs. detection).
Course Outcome 5	**Learning Objectives for Course Outcome 5**
5. Classify two contrasting ecosystems to Ecosite level and determine suitability for selected wildlife using non-spatial habitat suitability models.	5.1 Describe a mineral soil profile from a soil pit and/or from extracted auger samples by competently delineating soil horizons and reliably collecting soil parameters (e.g., depth, textural class, coarse fragment classification) to enable classification to an ecosite using decision keys in Ecosites of Ontario, OMNRF. 5.2 Determine the potential value of a site for selected wildlife using non-spatial habitat suitability models incorporating Ecosite and forest development stages (revised habitat suitability models for the Great Lakes - St. Lawrence and Boreal East forests, OMNRF).
Course Outcome 6	**Learning Objectives for Course Outcome 6**
5. Organize field data into neat, accurate and complete standardized field forms and field maps.	6.1 Construct an accurate lake physical features map. 6.2 Neatly and accurately complete a Lake Summary form, Gill Net Catch Record Forms, Field Collection Records, Scale Sample Envelopes associated with a lake survey. 6.3 Neatly and accurately complete field forms associated with the Ontario Stream Assessment Protocol. 6.4 Perform basic calculations to summarized survey data. 6.5 Neatly and accurately complete field forms for soils analysis. 6.5 Perform calculations and make conclusions as to the harvest compliance level.

Evaluation Process and Grading System:

Evaluation Type	Evaluation Weight
Participation	100%

Date: June 17, 2020

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

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