

**SAULT COLLEGE OF APPLIED ARTS AND TECHNOLOGY**

**SAULT STE. MARIE, ONTARIO**



**SAULT  
COLLEGE**

**COURSE OUTLINE**

**COURSE TITLE:** Second Year NET Fall Field Camp  
**CODE NO. :** NET 201 **SEMESTER:** F14  
**PROGRAM:** Natural Environment Technician / Technology  
**AUTHOR:** R. Namespetra & R. Routledge  
**DATE:** MAY 2014 **PREVIOUS OUTLINE DATED:** 2010  
**APPROVED:** "C.Kirkwood"

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**DEAN**

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**DATE**

**TOTAL CREDITS:** 2  
**PREREQUISITE(S):** None  
**HOURS/WEEK:** N/A

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**I. 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. Knowledge will be gained in the identification of stick nests and tree cavities. 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.

**II. LEARNING OUTCOMES AND ELEMENTS OF THE PERFORMANCE:**

Upon successful completion of this course, the student will demonstrate the ability to:

**1. Conduct a lake survey using standard equipment and methodology**Potential Elements of the Performance:

- 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, handle fish
- process fish by determining and recording species identification; total length; fork length; weight; sex; stomach contents; state of health; presence of parasites, tags or marks and by removing scales, fin rays cleithrum and/or otoliths 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: oxygen meter, conductivity meter, pH meter, YSI metre, secchi disc, Juday plankton net, Eckman dredge
- accurately map riparian vegetation, substrate types and other shoreline features for physical features map
- correctly operate a Bathymetric Automated Survey System (B.A.S.S.) unit to map lake basin profile
- safely operate an outboard motor under field conditions

**2. Assess physical processes and channel structure of a stream**Potential Elements of the Performance:

- 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

### 3. **Capture aquatic invertebrates for collection requirements**

#### Potential Elements of the Performance:

- 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

### 4. **Complete field assessment of water-crossings.**

#### Potential Elements of the Performance:

- review minimum standards for culvert installations on Crown Land
- review best practices for erosion and sediment control at water crossings (bridges/culverts)
- review culvert sizing process
- visit at least one good and one poor culvert installation
- conduct a complete OMNR Culvert Inspection at one or more water crossings

### 5. **Conduct in-field terrestrial ecosystem surveys.**

#### Potential Elements of the Performance:

- discuss features of stick nests that make them unique (e.g., location, construction, and size) to a specific wildlife species (e.g., gray squirrel, black bear, specific raptors)
- 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 at a specific site
- discuss different types of traps (e.g., live traps, kill traps, pitfall traps) and their specific uses
- tally tree cavities in fixed plots, identify cavity type (i.e., nest/den cavities, escape/roost cavities, and feeding cavities), cavity tree status

(live vs. dead), decay class of dead cavity trees, and tree DBH and species

- discuss the value of tree cavities as critical habitat for wildlife
- discuss retention of live cavity trees with respect to a single tree selection for tolerant hardwoods (Selection Silvicultural System) as outlined in the *Ontario Tree Marking Guide*
- assess degree of accuracy of locating 'blind' VHF radio-collars placed in known locations using triangulation

6. **Classify a range of local ecosystems using current Ontario Ecological Land Classification tools at the Ecosite level.**

Potential Elements of the Performance:

- competently use a dutch auger
- describe a mineral soil profile 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*
- describe the composition and structure of ecosystem conditions through the use of ecosite fact sheets
- determine the potential value of a site to specific wildlife species using ecosite-habitat matrices

7. **Organize field data into neat, accurate and complete standardized field forms and field maps**

Potential Elements of the Performance:

- 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 soils analysis
- perform calculations and make conclusions as to the harvest compliance level.

III. **TOPICS:**

1. Ecosites

2. Lake/Stream Survey
3. Aquatic Invertebrate Collection
4. Water Crossing Inspection
5. Wildlife Surveys

#### **IV. REQUIRED RESOURCES/TEXTS/MATERIALS:**

1. Manual of Instructions - Aquatic Habitat Inventory Surveys. Fisheries Branch, OMNR (ONLINE)
2. Kurta, Allen. 1995. Mammals of the Great Lakes Region. Fitzhenry and Whiteside. Toronto. 376 p.
3. Second Year NET Field Camp Manual. 2012 Sault College, Sault Ste. Marie.
4. Hubbs, C. L and K. L. Lager. 2002. Fishes of the Great Lakes Region. University of Michigan. Ann Arbor, Michigan. 267 p.
5. For a full list of personal gear, refer to "Student Equipment Checklist" in the Second Year NET Field Camp Manual.

**V. EVALUATION PROCESS/GRADING SYSTEM:**

The following semester grades will be assigned to students in post-secondary courses:

<u>Grade</u>	<u>Definition</u>
S	Satisfactory
U	Unsatisfactory
W	Student has withdrawn from the course without academic penalty.

The grade received will be based on attendance and participation.

**MANDATORY** attendance and participation is required for all field activities for a satisfactory (S) grade.

**NO ALCOHOL, ILLEGAL DRUGS or FIREARMS ALLOWED IN CAMP**

Those students not complying with the Student Code of Conduct will be withdrawn from camp and receive an F grade.

**NOTE:** This course provides an opportunity for field data collection fundamental to mapping exercises, analysis and creation of a Lake Survey Technical Report in Aquatic Ecosystem Surveys (NET 200-3). Failure to receive a satisfactory (S) grade in F&W Field Camp may seriously hamper success in Aquatic Ecosystem Surveys.

**VI. SPECIAL NOTES:**Attendance:

Sault College is committed to student success. There is a direct correlation between academic performance and class attendance; therefore, for the benefit of all its constituents, all students are encouraged to attend all of their scheduled learning and evaluation sessions. This implies arriving on time and remaining for the duration of the scheduled session.

**VI. COURSE OUTLINE ADDENDUM:**

The provisions contained in the addendum located on the portal form part of this course outline.