

SAULT COLLEGE OF APPLIED ARTS AND TECHNOLOGY

SAULT STE. MARIE, ONTARIO



**SAULT
COLLEGE**

COURSE OUTLINE

COURSE TITLE: Ecosystem Classification

CODE NO. : NRT 256 **SEMESTER:** 3

PROGRAM: Adventure Recreation and Parks Technician

AUTHOR: Rob Routledge (modified after M. Harvey, 2011)

DATE: May 2014 **PREVIOUS OUTLINE DATED:** Aug. 2013

APPROVED:
“C. Kirkwood”

DEAN **DATE**

TOTAL CREDITS: 3

PREREQUISITE(S): NONE

HOURS: 45

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***For additional information, please contact Colin Kirkwood,
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I. COURSE DESCRIPTION:

This course is a survey of natural wetland and forest ecosystems and associated plant communities found in central Ontario. A range of vascular and non-vascular wetland and terrestrial plants and lichens will be identified with a focus on indicator species. Identification of these organisms combined with hands-on experience in describing soils in the field will be used to classify a range of local ecosystems using current Ontario Ecological Land Classification tools at the Ecosite and Vegetation-Type level.

II. LEARNING OUTCOMES AND ELEMENTS OF THE PERFORMANCE:

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

1. Identify vascular and non-vascular plants and lichens.

Potential Elements of the Performance:

- review key identification features of selected woody and herbaceous plant species taught in courses NRT101 and NRT133
- identify selected flowering, vascular wetland plants (floating-leaved, submergent, emergent and other associated plants)
- identify selected ferns, horsetails, club-mosses, liverworts, mosses, and lichens and describe morphology and associated terminology specific to each taxonomic group
- identify, describe and compare the fruiting structures and vegetative features of selected grasses, sedges and rushes using appropriate terminology and demonstrate effective use of dichotomous keys
- identify, describe and compare the reproductive structures and processes characteristic of ferns, club-mosses, mosses and lichens

This learning outcome will constitute approx. 50% of the course grade

2. Identify and digitally photograph taxonomically important features of selected vascular and non-vascular plants and lichens.

Potential Elements of the Performance:

- identify a minimum number of selected vascular and non-vascular plants and lichens in the field using available resources
- acquire digital images of a minimum number of taxonomically important identification features for each specimen identified
- present images in a digital herbarium format using PowerPoint or comparable software

This learning outcome will constitute approx. 15% of the course grade

3. Classify a range of local ecosystems using current Ontario Ecological Land Classification tools at the Ecosite and Vegetation-Type level.

Potential Elements of the Performance:

- competently apply basic field skills and techniques specific to the Ecological Land Classification system
- ❖ Ecosite
 - competently dig a soil pit and use a soil auger
 - describe a mineral soil profile from a soil pit and extracted soil 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 an organic soil profile (e.g., von Post scale of decomposition) from extracted soil auger samples and identify wetland indicator plants 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
- ❖ Vegetation-Type
 - reliably collect vegetation data to allow classification of Vegetation-Type (V-type) using the central Ontario site classification system (Chambers et al. 1997)
 - using the V-type, find the ecosite 'best match' to determine the approximate value of the site(s) to featured Ontario wildlife species

This learning outcome will constitute approx. 35% of the course grade

III. REQUIRED RESOURCES/ TEXTS/ MATERIALS:

- *Wetland Plants of Ontario* (Newmaster)
- *Forest Plants of Central Ontario* (Chambers et al.)
- *Fern Finder* (Hallowell and Hallowell) provided by college on loan
- *Ecosites of Ontario* (Ontario Ministry of Natural Resources) – draft copy provided by college on loan
- Hardhat, reflective vest, rubber boots, safety boots, rain gear, clipboard, pencils

IV. EVALUATION PROCESS/GRADING SYSTEM:

Identification tests and assignments	50
Field labs and associated assignments	35
Photo collection assignment	15
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Overall	100 points

The following semester grades will be assigned to students:

<u>Grade</u>	<u>Definition</u>	<u>Grade Point Equivalent</u>
A+	90 - 100%	4.00
A	80 - 89%	4.00
B	70 - 79%	3.00
C	60 - 69%	2.00
D	50 - 59%	1.00
F (Fail)	49% and below	0.00
CR (Credit)	Credit for diploma requirements has been awarded.	
S	Satisfactory achievement in field /clinical placement or non-graded subject area.	
U	Unsatisfactory achievement in field/clinical placement or non-graded subject area.	
X	A temporary grade limited to situations with extenuating circumstances giving a student additional time to complete the requirements for a course.	
NR	Grade not reported to Registrar's office.	

V. SPECIAL NOTES:

Conduct:

- Any student who in the judgement of the instructor behaves inappropriately in scheduled classes or copies the work of another student without the instructor's permission, will be subject to all the terms and conditions in the student's rights and responsibilities hand book and may after, reviewing the situation with the instructor, be asked to leave the course with an F grade.
- Smoking will only be allowed in assigned locations during field labs. Smoking is not allowed while conducting field work.

Evaluation:

- Field labs are held rain or shine – please be prepared! Students will not be allowed to participate in a field lab if the proper safety gear and/or clothing are not worn.
- Identification (ID) tests will require students to identify specimens but may also include questions testing knowledge of pertinent terminology. ID tests may be held in the field or may be held in a lab setting utilizing live samples, herbarium specimens and images highlighting key identification features. Some ID tests may require the use of dichotomous keys which will be provided. ID skills and knowledge of pertinent terminology MAY ALSO be tested through LMS online quizzes.
- Students will be asked to identify specimens on ID tests by their common name and scientific name unless stated otherwise. Students will get a 1/2 mark for the common name and a 1/2 mark for the scientific name. A list of scientific names will be provided during these tests.
- To be eligible to make up for a missed ID test, the instructor must be contacted via phone or email ASAP to discuss make-up options. **Students not contacting the instructor prior to a missed class or within a day afterwards will get a zero except under extenuating circumstances; e.g., doctor's note.**
- Late assignments will NOT BE accepted except under extenuating circumstances; e.g., doctor's note
- The instructor cannot guarantee responses to questions in the 24-hour period prior to assignment deadlines and tests via phone message or email.