SAULT COLLEGE OF APPLIED ARTS AND TECHNOLOGY

SAULT STE. MARIE, ONTARIO

COURSE OUTLINE

COURSE TITLE:	**INTRODUCTION TO FISH & WILDLIFE**
CODE NO. :	**NRT 110** **SEMESTER: 1**
PROGRAM:	**FISH & WILDLIFE CONSERVATION TECHNICIAN**
AUTHOR:	**V. Walker (Updated By E. Muto)**
DATE:	**JUNE 2014 PREVIOUS OUTLINE DATED: JUNE 2013**
APPROVED:	**"C. Kirkwood" JUNE 2014**
	CHAIR DATE
TOTAL CREDITS:	**3**
PREREQUISITE(S):	**NONE**
HOURS/WEEK:	**3**

For additional information, please contact Colin Kirkwood,
Dean, Environment/Technology/Business
(705) 759-2554, Ext.2688

I. COURSE DESCRIPTION:

This practical course will introduce the student to field procedures to assess terrestrial and aquatic habitat and relative abundance of animal populations. Collection techniques, preparation, display and identification of important aquatic and terrestrial invertebrates will be practiced. In addition, field identification features of common Ontario reptiles and amphibians will be introduced. Field data will be recorded, analyzed and summarized in report format. In addition, employment opportunities will be discussed and guest speakers will address specific opportunities in the Fish and Wildlife Conservation field.

II. LEARNING OUTCOMES AND ELEMENTS OF THE PERFORMANCE:

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

1. **Conduct field surveys to assess habitat and relative abundance of wildlife populations**

Potential Elements of the Performance:

- execute field procedures as instructed
- assess local Canada goose population numbers using a droppings survey
- determine stream discharge using floatation method, current meter and computer software
- assess chemical parameters of stream water
- correctly calibrate and operate field equipment (compass, GPS, current meter, HACH kit, turbidimeter, surber sampler)
- collect aquatic invertebrates to assess water quality using a diversity index
- construct an appropriate bird feeder for the College woodlot and monitor local bird feeding activity
- participate in the annual Deer Check Station on St. Joseph's Island during the fall hunt

This learning outcome will constitute approximately 25% of the course's grade

2. **Collect and identify invertebrate specimens for interpretation and display**

   Potential Elements of the Performance:

   - correctly use nets, traps and various collection techniques for both aquatic invertebrates and terrestrial insects
   - properly kill, pin and label 25 terrestrial insect species for invertebrate collection
   - recognize common terrestrial insect and aquatic invertebrate orders given key characteristics
   - demonstrate effective use of a bifurcated (dichotomous) key for identification
   - discuss the ecology of invertebrates and their importance as reflectors of environmental health

   This learning outcome will constitute approximately 15% of the course's grade

3. **Identify selected fish, bird, amphibian and reptile species and discuss their interpretive value.**

   Potential Elements of the Performance:

   - recognize selected freshwater fish of Ontario & discuss their biology and ecological values
   - identify local woodlot bird species by field marks and vocalizations
   - identify amphibians common to Ontario using images and vocalizations
   - discuss the ecological/interpretative importance of amphibians
   - identify common turtles and snakes of Ontario using images
   - discuss ecological/interpretative importance of reptiles

   This learning outcome will constitute approximately 10% of the course

4. **Record, analyze and present field data**

Potential Elements of the Performance:

- complete field forms neatly and accurately
- present data in organized tables, graphs and figures
- use appropriate software to analyze and interpret data
- summarize objectives, methodologies, results and discussion of results in an organized technical report format
- photo document, identify and submit a wildlife scat collection of 5 species indigenous to Ontario

This learning outcome will constitute approximately 45% of the course's grade

5. **Evaluate employment opportunities in Fish & Wildlife**

Potential Elements of the Performance:

- summarize career / summer opportunities in Fish and Wildlife based on presentations given by representatives from local agencies

This learning outcome will constitute approximately 5% of the course's grade

III. TOPICS:

1. Terrestrial Insect Collection, Killing, Pinning and ID
2. Stream Discharge Determination
3. Basic Water Analysis and Aquatic Invertebrate Collection
4. Introduction to Aquatic Invertebrates, Key Use & Interpretation
5. Wildlife Population Estimate
6. Local Woodlot Bird Identification (sight & vocalizations)
7. Identification of Important Fish Species of Ontario
8. Identification of Common Herptiles
9. Employment Opportunities in F&W

IV. REQUIRED RESOURCES/ TEXTS/ MATERIALS:

Holm, E., M. Burridge, and N. Mandrak. 2009. ***The Royal Ontario Museum Field Guide to the Freshwater Fishes of Ontario***. Royal Ontario Museum, Toronto, 462 pp.

Harding, J.H. 1997. ***Amphibians and Reptiles of the Great Lakes Region.*** University of Michigan Press. 378 pp.

Peterson, R. T. 2010. ***Peterson Field Guide to Birds of Eastern and Central North America (6th Edition)***. Houghton Mifflin Harcourt.

Voshell, J. Reese. 2002***. Guide to Common Freshwater Invertebrates of North America***. McDonald and Woodward Publishing Company. Blacksburg, Virginia.

Walker, V. 2011. ***Intro to Fish & Wildlife Lab Manual*** – **ON LMS**. Sault College, Sault Ste Marie.

Birds of Sault Ste. Marie Check List

Hardhat, safety boots, reflective vest

Dissection kit

Chest waders (Cabela's or equivalent, NOT neoprene)

Insect Display Box, pins and pinning block (1 per group of 3 students)

ADDITIONAL RESOURCES (OPTIONAL**):**

Scott, W.B. and E.J. Crossman. 1998. *Freshwater Fishes of Canada*. Bulletin 184. Fisheries Research Board of Canada. Canadian Government Publishing Centre. Ottawa, Ontario. 966 pp.

V. EVALUATION PROCESS/GRADING SYSTEM:

Technical Reports (4)	**40%**
Insect Collection	**10%**
Invert &Fish Biology Tables	**10%**
Field Forms	**10%**
Quizzes	**25%**
Scat Collection	**5%**
	100%

QUIZZES: There will be several quizzes based on terrestrial insect ID, aquatic invertebrate ID, fish ID, herptile ID and speaker presentations which are valued at 25% total

BONUS: Student participation in the annual Deer Check Station on St. Joseph's Island or any other F&W volunteer project will be valued at 5% total.

NOTE: Lab assignments and report values will be reduced at a rate of **10% per day** for late submissions for a period of 5 days after the due date. After 5 days, lab assignment/report value will be zero. All labs/assignments and reports must be submitted regardless of lateness to pass the course.

Attendance during field exercises is **MANDATORY.** Student missing field work without valid, documented reason will risk repeating the course.

NOTE: Students given the opportunity to submit a lab report associated with a **missed** field trip will receive a maximum grade of 60% for that report

The following semester grades will be assigned to students:

Grade	Definition	Grade Point Equivalent
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.	
W	Student has withdrawn from the course without academic penalty.	

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.

VII. COURSE OUTLINE ADDENDUM:

Please review the course outline addendum on portal.