

I. COURSE DESCRIPTION:

This course provides the biological background for conservation and management of wetland habitats, emphasizing aquatic community component identification, biology and structure. Students will learn how to identify many types of wetlands and categorize them based on their structure. Means by which wetlands are afforded protection will be explored, including conservation limitations, and enhancement to optimize recreational, social, aesthetic and economic values. Steps in the Ontario wetland evaluation process will be completed through both in-field and in-class activities.

II. LEARNING OUTCOMES AND ELEMENTS OF THE PERFORMANCE:

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

1. Compare the classes of wetlands in Canada, and the ecological characteristics of each class.Potential Elements of the Performance:

- Research the classes of wetlands from reference material
- Identify wetland types and summarize characteristics of each
- Describe the values wetlands and major reasons for wetland loss

This outcome will constitute approximately 10% of final grade

2. Identify and discuss the role of biological components of wetlands including indicator species.Potential Elements of the Performance:

- Review written reports on the role of indicator species in wetlands and complete response sheets
- Using actual specimens, or visual materials, identify indicator species commonly found in wetlands.
- Describe the biology, habitat and roles of wetland dwelling species of amphibians, reptiles, aquatic plants, marsh birds and mammal species.
- Review waterfowl ecology and discuss the role wetlands play in their conservation.

This outcome will constitute approximately 30% of final grade

3. Perform a wetland assessment and submit a written wetland evaluation using the Environment Canada/ Ministry of Natural Resources "Ontario Wetland Habitat Evaluation" survey technique.

Potential Elements of the Performance:

- Review the procedures described in the Ontario Wetland Habitat Evaluation Manual (Northern Region)
- Perform a field survey of a wetland using the above procedure while at field camp
- Complete the maps and forms required for a wetland survey.
- Compare other wetland evaluation systems to this survey in terms of methodology, time requirements and results.

This outcome will constitute approximately 20% of final grade

4. Compare physical, chemical, and biological methods of vegetation management in wetlands in terms of methods of application, economic and ecological costs and public acceptance.

Potential Elements of the Performance:

- Review the assigned readings on vegetation management, and discuss why vegetation and vegetation control may constitute a problem to managers
- Discuss and rate the advantages/disadvantages of the methods of physical, chemical, and biological vegetation management.

This outcome will constitute approximately 10% of final grade

5. Discuss structures and methods of water-level control for the conservation and enhancement of wetland productivity.

Potential Elements of the Performance:

- Describe types of water level manipulation devices, discussing the purpose and function of each.
- Describe the ecological effects of implementing the use of water-level control structure, with emphasis on vegetation and benthic communities.
- Discuss how water control structures are used for biological vegetation control.

This outcome will constitute approximately 10% of final grade

6. Research issues and planning initiatives in wetland conservation, rehabilitation and restoration.

Potential Elements of the Performance:

- Using literature, media and electronic resources prepare and report on a wetland profile or issue as a case study.
- Summarize planning efforts and legislation in place to mitigate wetland loss and afford protection.

This outcome will constitute approximately 10% of final grade

7. Demonstrate knowledge of the Marsh Monitoring Program protocol including purpose, data collection and specified techniques.

Potential Elements of the Performance:

- Complete a marsh bird survey in the field using a broadcast audio device.
- Complete field forms accurately to conduct amphibian survey.
- Map out and record survey plot description and vegetation forms.
- Discuss the application of the Marsh Monitoring Program.

This outcome will constitute approximately 10% of final grade

III. TOPICS:

1. Wetland ecosystem characteristics
2. Biological components and indicators in wetlands
4. Wetland evaluation systems
5. Vegetation management & water level control
6. Wetland conservation

IV. REQUIRED RESOURCES/TEXTS/MATERIALS:

1. Winter, T. 2010. *Wetland Conservation Study Guide*. Sault College.
2. MacCulloch, R.D., 2002. *The Royal Ontario Museum Field Guide to Amphibians and Reptiles of Ontario*. McClelland and Stewart Ltd. Toronto, Ontario. 168 pp.
3. Newmaster, S., 1997. *Wetland Plants of Ontario*. Lone Pine Publishing.
4. Peterson, R.T., 2002. *Birds of Central and Eastern North America*. Houghton Mifflin Company. New York, New York.

V. EVALUATION PROCESS/GRADING SYSTEM:

Assignments	- 50%
Tests	<u>- 50%</u>
	100%

Due dates for assignments will be provided and must be adhered to. Late assignments will NOT be accepted without a valid and supported reason (e.g. doctor's note).

The following semester grades will be assigned to students:

<u>Grade</u>	<u>Definition</u>	<u>Grade Point Equivalent</u>
A+	90 – 100%	
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. *It is the departmental policy that once the classroom door has been enclosed, the learning process has begun. Late arrivers will not be granted admission to the room.*

VI. COURSE OUTLINE ADDENDUM:

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