

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 and differentiate 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 System 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.
- Differentiate wetland types and summarize characteristics of each, including hydrological and sediment criteria.
- Describe the values of wetlands and identify the major reasons for wetland loss.
- Identify wildlife habitat enhancement features including nesting structures for marsh birds.
- Review waterfowl ecology and management and recognize the role wetlands play in their conservation.

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

- Identify indicator species commonly found in wetlands using actual specimens and/or visual materials.
- Associate wetland dwelling species such as amphibians, reptiles, aquatic plants, marsh birds, and mammals to their habitats and roles.
- Access and interpret literature pertaining to management aspects of wetlands including flora, invertebrates, marsh birds and mammals.
- Examine different methods for surveying wetland species.

3. **Perform steps involved in completing an assessment of a local wetland and submit a written wetland evaluation using the Ministry of Natural Resources "Ontario Wetland Evaluation System".**

Potential Elements of the Performance:

- Review the procedures described in the Ontario Wetland Evaluation System (Northern Manual).
- Conduct a field survey of a wetland using the OWES procedure focusing on the Biological, Social, Hydrological and Special Feature Components.
- Organize and record complete, detailed accurate and neat documentation of field activities on the provided forms.
- Apply knowledge of Geographical Information System (GIS) to delineate vegetation communities in order to determine total wetland size and fractional areas of individual communities as required for scoring the wetland.
- Compare and contrast an evaluation of a local provincially significant wetland to the wetland assessed by the student.

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 and case studies on vegetation management
- Theorize why vegetation and vegetation control may constitute a problem for managers.
- Evaluate the advantages/disadvantages of the methods of physical, chemical, and biological vegetation management.

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

Potential Elements of the Performance:

- Identify 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.
- Explain how water control structures are used for biological vegetation control.

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

Potential Elements of the Performance:

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

III. TOPICS:

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

IV. REQUIRED RESOURCES/TEXTS/MATERIALS:

Calculator, Pencils/Pens, Clip Board

Hardhat, Safety Boots, Reflective Vest, (Recommended: Rubber Boots, Rain Suit)

LMS – mysaultcollege.ca

→this is your lifeline, it is very important that you log-on to LMS daily!

Wetland Plant Id Handout → available from instructor

Ontario Ministry of Natural Resources and Forestry (OMNRF). (2013). *Ontario Wetland Evaluation System, Northern Manual*.

→ available on LMS as a pdf and hard-copies available for sign-out from your instructor

Recommended:

Harding, J. H. (1997). *Amphibians and reptiles of the great lakes region*. Ann Arbor, MI: The University of Michigan Press.

→ should have from 1st year, available in bookstore

Kurta, A. (1995). *Mammals of the great lakes region* (Rev. ed.). Ann Arbor, MI: The University of Michigan Press.

→ available in bookstore

Peterson, R. T. (2010). *Peterson field guide to birds of eastern and central north america* (6th Ed.). Boston, MA: Houghton Mifflin Harcourt.

→ should have from 1st year, available in bookstore

V. EVALUATION PROCESS/GRADING SYSTEM:

Exams	30%
Lab Quizzes	15%
Attendance	5%
Lecture Quizzes	5%
Wetland Evaluation	15%
Wetland Profile	10%
<u>Reading Assignments</u>	<u>20%</u>
TOTAL	100%

The following semester grades will be assigned to students:

Grade	<u>Definition</u>	<i>Grade Point Equivalent</i>
A+	90 – 100%	4.00
A	80 – 89%	3.00
B	70 - 79%	2.00
C	60 - 69%	1.00
D	50 – 59%	0.00
F (Fail)	49% and below	
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.	

If a faculty member determines that a student is at risk of not being successful in their academic pursuits and has exhausted all strategies available to faculty, student contact information may be confidentially provided to Student Services in an effort to offer even more assistance with options for success. Any student wishing to restrict the sharing of such information should make their wishes known to the coordinator or faculty member.

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. Attendance will be taken and Quizzes will randomly be given at the beginning of the class. Late arrivers will be marked absent and not be allowed to write the quiz.

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.

Evaluation & Correspondence:

To be eligible to make up for a missed test, the instructor must be contacted in person or via phone or email ASAP to discuss make-up options. **Students not contacting the instructor prior to a missed test/quiz/assignment 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 does not hold scheduled "office hours," but does abide by an open door/drop in policy and will schedule individualized sessions with students upon request. The instructor cannot guarantee responses to questions in the 24-hour period prior to assignment deadlines and tests/exams via phone message or email.

VI. COURSE OUTLINE ADDENDUM:

The provisions contained in the addendum located in D2L and on the portal form part of this course outline.