

SAULT COLLEGE OF APPLIED ARTS & TECHNOLOGY
SAULT STE. MARIE, ONTARIO

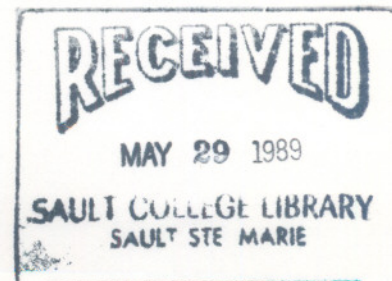
COURSE OUTLINE

Course Title: AQUATIC BIOLOGY
Code No.: BIO 125-4
Program: WATER RESOURCES
Semester: I
Date: JUNE, 1989
Author: H. A. COOPER

New: _____ Revision: X

APPROVED: *H.A. Cooper*
Chairperson

Date: May 25 1989



WATER RESOURCES
BIO 125-4
AQUATIC BIOLOGY

CALENDAR DESCRIPTION

AQUATIC BIOLOGY

BIO 125-3

Course Name

Course Number

PHILOSOPHY/GOALS:

This course will introduce the student to the diversity of macro and macroscopic life around and in the aquatic environment. Students will learn to identify major species of microorganisms, plants and animals that are indicators of water quality. Biological and microbiological procedures for examining organism structures and adaptations will be emphasized in laboratory sessions.

METHOD OF ASSESSMENT (GRADING METHOD):

Laboratory assignments/Field collections	- 30%
Term tests based on theory material and specimen identification	- 70%
	<u>100%</u>

Grading: A+= 85% and over consistently
 A = 80 - 84% consistently
 B = 70 - 79% consistently
 C = 60 - 69% consistently

A passing grade will be based on a composite grade of 60%. For students that attain less than 60%, but over 55% overall, ONE rewrite exam may be allowed providing that attendance and demonstrated effort are satisfactory.

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<u>Topic</u>	<u>Periods</u>	<u>Description</u>	<u>Reference</u>
1.	4	<u>Introduction to Aquatic Biology</u> - basic cell structure - procaryotic and eucaryotic cells	1. Microscope use and measurement.
2.	4	<u>Cell identification and advanced microscopy</u> - importance to microbiology	2. Cell structures.
3.	4	<u>Procaryotic cells</u> - classification & importances - cell structure - identifying common bacteria & blue greens	3. Procaryotic cells.
4.	4	<u>Non-green algae</u> - photosynthetic protista - classification and importances	4. Protista - sub-kingdom algae.
5.	4	<u>Green algae (I)</u> - classification and identification of aquatic green algae and desmids - role as site indicators	5. Green algae.
6.	4	<u>Green Algae (II)</u> - site index lab all period	
7.	8	<u>Riparian Vegetation</u> - identification of significant woody/herbaceous plants - role in providing habitat around lakes, streams and wetlands in watersheds - collection of 20 specimens	Field Trip
8.	8	<u>Aquatic Vegetation</u> - identification of 30 species of aquatic plants - importances and habitat types	8. Aquatic plants.

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<u>Topic</u>	<u>Periods</u>	<u>Description</u>	<u>Reference</u>
9.	4	<u>Protozoans</u> - characteristics; and identifications - importances in water - classification	9. Protozoa
10.	4	<u>Aquatic invertebrates I</u> - classification, identification and sites of major <u>insects</u> in water - complete vs. incomplete metamorphosis in life cycles - importances	10. Aquatic invertebrates
11.	4	<u>Aquatic Invertebrates II</u> - classification, identification and sites of non-insect invertebrates in water - importances	
12.	4	<u>Fish I</u> - fish structure and anatomy - dissection - features for identification	12. Fish anatomy.
13.	8	<u>Fish II</u> - identification of common species of commercial, sport and coarse fishes. - basic biology of these species	13. Fish I.D.

RECOMMENDED READING: There will be no assigned text for the course because of the diversity of topics covered. However, the following books will be useful for students to consult for review:

1. Hosie, R.C., 1973, Native Trees of Canada, Can. Dept. of Environment, Ottawa, 380 p.
2. McKane, L. and J. Kandel, 1985. Microbiology - Essentials and Applications. McGraw-Hill Book Co., N.Y., 777 p.

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3. Needham, J.G., and P.R. Needham, 1962, A Guide to the Study of Freshwater Biology, Holden-Day Inc., San Francisco, 108 p.
4. Anon, n.d., Manual of Ontario Aquatic Plants, draft copy, Ontario Ministry of Natural Resources, Toronto, 80 p.
5. Any Basic college-level Biology text.