

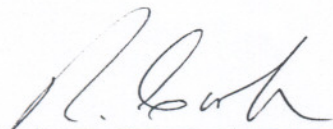
SAULT COLLEGE OF APPLIED ARTS & TECHNOLOGY
SAULT STE. MARIE, ONTARIO

COURSE OUTLINE

COURSE TITLE: ENVIRONMENTAL STUDIES I
CODE NO.: FOR 122-3 SEMESTER: 2
PROGRAM: ABORIGINAL RESOURCE TECHNICIAN PROGRAM
DATE: MARCH 1996 PREVIOUS OUTLINE DATED: SEPTEMBER 1994
AUTHOR: MARK HARVEY/JERRY ZUHLINSKI

APPROVED:

DEAN



DATE

March 27, 1996



ENVIRONMENTAL STUDIES I

FOR 122-3

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TOTAL CREDIT HOURS: 48

PREREQUISITE(S):

I. PHILOSOPHY/GOALS:

This is a study of the environment from the biological point of view. It will include the identification and the ecological relationships of forest flora (including mosses, lichens, ferns, and aquatic plants) and fauna (including fish, waterfowl, birds, and mammals) of Ontario. Natural history and cultural importance of selected species will be discussed. Species of significance to native people are highlighted.

II. STUDENT PERFORMANCE OBJECTIVES:

Upon successful completion of this course, the student will:

1. Identify ground flora including common lichens, mosses, club mosses, horsetails, ferns and aquatic plants and state their significance and typical habitats.
2. Identify common fauna of Ontario including aquatic invertebrates, fish, waterfowl, birds and mammals.
3. Briefly state the ecological values and habitats of the above species.
4. Identify and state cultural/traditional values of species important to Aboriginal people.

III. TOPICS TO BE COVERED:

1. Club mosses, Lichens and Horsetails
2. Mosses and Liverworts
3. Ferns
4. Aquatic Plants
5. Aquatic Invertebrates
6. Freshwater Fish
7. Waterfowl
8. Songbirds, Shorebirds, Gamebirds and Raptors
9. Mammals
10. Native Herbalogy and Traditional Use of Plants

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IV. LEARNING ACTIVITIES:

TOPIC 1: Club Mosses, Lichen and Horsetails, Mosses & Liverworts

Upon successful completion of this course, the student will be able to:

1. Briefly explain the life cycles of club mosses and horsetails. Study Guide
2. Identify 5 species of club mosses.
3. Classify lichen by growth form and identify 6 species to genus level.
4. Discuss the life cycle of moss and liverworts.
5. Identify 10 to 12 mosses and liverworts of Northern Ontario, and relate these mosses to their sites.
6. Discuss the role and potential value of Sphagnum and other mosses.

TOPIC 2: Ferns

Upon successful completion of this unit, the student will be able to:

1. Identify 14 species of ferns and describe their sites.
2. Use a moderately complex key to identify ferns without use of a glossary. "Fern Finder" field guide
Study Guide
3. Draw and label the life cycle of a fern.

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IV. LEARNING ACTIVITIES: (cont'd)

TOPIC 3: Aquatic Plants

Upon successful completion of this unit, the student will be able to:

1. Distinguish between the grass, sedge and rush families. Study Guide
Video
2. Identify 35 common aquatic plants and relate these plants to habitat and importance.

TOPIC 4: Aquatic Invertebrates

Upon successful completion of this unit, the student will be able to:

1. Identify 25 aquatic invertebrates. Study Guide
Video
2. Associate these invertebrates with their preferred sites and ecological roles.

TOPIC 5: Freshwater Fish

Upon successful completion of this unit, the student will be able to:

1. Identify about 30 species of common freshwater fishes. "McClane's Field Guide to F.W. Fish"
Video
2. Construct a chart with the common fish species showing habitat, spawning characteristics and all values.

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IV. LEARNING ACTIVITIES: (cont'd)

TOPIC 6: Waterfowl

Upon successful completion of this unit, the student will be able to:

1. List 5 features that distinguish between puddle ducks and diving ducks.
2. Identify 24 specimens of waterfowl.
3. Describe the location and principal birds of the four North American flyways.
4. Distinguish between breeding plumage and eclipse plumage.

Study Guide

"Ducks at a Distance" or other field guide

Video

TOPIC 7: Songbirds, Shorebirds, Game Birds and Raptors

Upon successful completion of this unit, the student will be able to:

1. Identify field features of about 50 species of birds found in Northern Ontario.
2. Distinguish between game birds and non-game birds.
3. Compare buteos, accipiters and falcons.

Field Guide to Eastern Birds

Video

TOPIC 8: Mammals

Upon successful completion of this unit, the student will be able to:

1. State examples and characteristics of the major orders of mammals.
2. Identify about 35 species of mammals from 35 mm slides and study mounts.
3. State the preferred habitats of common Ontario mammals.

Study Guide

Field Guide to the Mammals

Video

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IV. LEARNING ACTIVITIES: (cont'd)

TOPIC 10: Native Herbalogy

Upon successful completion of this unit, the student will be able to:

1. Demonstrate an understanding of traditional native uses of plants used for food or medicinal purposes from your area.
2. Identify approximately 15 plants that are considered edible or of medicinal value.

V. EVALUATION METHODS:

TEST #1	Lichens, Club Mosses, Mosses, Ferns	25%
TEST #2	Aquatic Invertebrates, Aquatic Plants	25%
TEST #3	Waterfowl, Birds, Fishes	20%
TEST #4	Mammals	20%
ASSIGNMENTS	1 & 2	10%

GRADES - A+ = 90%+ A = 80%-84+% B = 70%-79% C = 60%-69%

VI. REQUIRED STUDENT RESOURCES:

Environmental Studies I Study Guide

Hinds, Bob. Ducks at a Distance, Can. Govt. Publishing Centre, Hull, PQ

Suggested References:

- Field Guides for: Eastern Birds/Medicinal Plants
Mammals
- McClanes Field Guide to F.W. Fishes of North America

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VII. ADDITIONAL RESOURCE MATERIALS AVAILABLE IN THE COLLEGE LIBRARY BOOK SECTION:

Banfield A.W.F., 1974. Mammals of Canada. National Mus. of Nat. Sciences Tor. QL721.B215

Densmore, F. 1987. Indian Use of Wild Plants. Irocrafts Ltd. Ohsweken, ON 397 p.

Godfrey E. 1986. Birds of Canada. National Museum of Natural Sciences QL685.G63

Hotchkiss N. 1972. Common Marsh Underwater & Floating-leaved Plant. Dover Pub. NY NY QK115.H6

Magee, D.E. 1981. Freshwater Wetlands. Univ. of Mass. press. QK117.M24

Needham, J.G. 1962. Freshwater Biology. Holden-Day Inc., California 108pp. QH96.N38

Pennak, R.W. 1953. Fresh-Water Invertebrates of the United States. Ronald Press Co., N.Y. QL141.P45

Scott, W.B., Crossman, E.J. 1973. Freshwater Fishes of Canada. Information Canada. 966pp. QL626.S34

VIII. SPECIAL NOTES:

Hard hats must be worn on field trips.

Students with special needs (e.g. physical limitations, visual impairments, hearing impairments, learning disabilities) are encouraged to discuss required accommodations confidentially with the instructor.

Your instructor reserves the right to modify the course as he/she deems necessary to meet the needs of students.