SAULT COLLEGE
of Applied Arts and Technology
Sault Ste. Marie

F & W.

COURSE OUTLINE

BIO 306-8 Lake,
Pond and Stream Surveys

Lecture Course Outline

FOR 306-8
AQUATIC SURVEYS

revised June 1981

BIO 306-8 Lake, Pond and Stream Surveys

Lecture Course Outline

Unit #1 (6 hrs) Course introduction and fish classification. What is a fish? Major groups of fish, extinct fishes, characteristics of Great Lakes fish families.

Ref. pp. 1-31 Lagler, Bardach and Miller
pp. 34-119 Hubbs and Lagler
pp. 29-848 Scott and Crossman

#2 (4 hrs) Creel census, fish anaesthetics and poisons; use, sources of error of creel censuses, evaluation of creel censuses.
- important anaesthetics, fish poisons.

Ref. pp. 252-256 Bennett
pp. 203-209 Bennett

#3 (8 hrs) Propagation of salmonids and bass
- trout hatchery location, water requirements, physical resources of a hatchery, spawn taking, egg development, egg treatment, transportation etc., care of young trout, field trips to Tarentorous Trout Rearing Station.

- Brood stock selection, foods, dietary needs, rearing of bass and other warm water fish.

Ref. pp. 10-82 Davis
Chapter 8, Robbins and MacCrimmon

#4 (2 hrs) Aquatic invertebrates
- recognition of major groups and their importance, ecology and adaptions.

Ref. Pennak

BIO 306-8 Lake, Pond and Stream Surveys
Laboratory Course Outline

Unit #1 (5 hrs) - fish anatomy including internal organs and structures

Ref. pp. 19-27 Hubbs and Lagler
pp. 52-133 Lagler, Bardach and Miller

#2 (30 hrs) - complete survey of an area lake including the physical, chemical and biological characteristics, preparation of lake survey report and maps

Ref. Wetzel and Likens
pp. 7-56 Ruttner

#3 (12 hrs) - complete survey of an area stream including the physical, chemical biological characteristics, preparation of stream survey report

Ref. Wetzel and Likens

#4 (30 hrs) - identification of the more common species of Ontario fishes

Ref. Hubbs and Lagler
Scott and Crossman

#5 (student time) - collection identification and preparation of specimens of 25 aquatic invertebrates or plants

LAKE, POND AND STREAM SURVEYS

STUDENT EVALUATION

TERM TESTS

There will be two term tests after units 2 and 3 of the lecture course. They will be worth approximately 50 marks each. You must have an average mark of 50% for the two tests. Students receiving less will be required to write a make-up test covering the whole lecture portion during the make-up period.

LABORATORY TEST

A laboratory practical test based on labs 1 and 9-13 will be written during lab 14. You will be tested on fish anatomy and identification of species in this test. This test will be marked out of 100. A pass mark is 50%.

ASSIGNMENTS (Details for each are found in the laboratory notes)

1. The aquatic invertebrate, plant or algae collection will be marked out of 50.
2. The lake survey report will be marked out of 100.
3. The stream survey report will be marked out of 50.
4. Your list of fish species and numbers collected will be marked out of 15.
5. The report on the Tarentorus fish hatchery will be marked out of 10.

All assignments must be satisfactorily completed.

Total course marks will be 425. You will receive a grade based on your course average and consistency of performance. Because of the nature of the field trips, the mark you receive for each assignment will also reflect you performance as a field worker. This will include attitude, attendance and general participation and interest.

Attendance during the field trips and lab periods is mandatory. Students missing these without documented reason will run the risk of repeating the course.

TEXTS:

Dodge, D.P. et al 1979. Manual of Instructions, Equatic Habitat Inventory Surveys. Fish. Br., Ont. Ministry of Natural Resources. p. 159.

Wetzel, R.G., and G.E. Likens. 1979. Liminological Analyses. Toronto, W.B. Saunders. p. 357.

Scott, W.B., and E.J. Crossman. 1973. "Freshwater Fishes of Canada", Fish. Res. Board Can., Bull. 184:966 p.

REFERENCE TEXTS:

Bailey, R.M. et/al. 1970. "A List of Common and Scientific Names of Fishes from the United States and Canada", 3rd ed. Am. Fish Soc., Publ. 6: 149 p.

Bennett, G.W. 1971, "Management of Lakes and Ponds", 2nd ed. Toronto, Van Nostrand Reinhold, 375 p.

Davis, H.S. 1973. "Culture and Diseases of Game Fishes", Berkeley, University California Press. 332 p.

Lagler, K.F., J.E. Bardach and R.R. Miller 1967. "Ichthyology", New York, Wiley 545 p.

Leim, A.H., and W.B. Scott 1966, "Fishes of the Atlantic Coast of Canada", Fish. Res. Board Can., Bull. 155: 485 p.

MacKay, H.H. 1969, "Fishes of Ontario" Toronto, Ontario Department Lands & Forests. 292 p.

McPhail, J.D. and C.C. Lindsey 1970. "Freshwater Fishes of Northwestern Canada and Alaska", Fish. Res. Board Canada, Bull 173: 381 p.

Sidbec - Dosco 1968, "Conversion Factors and Tables", Montreal, J.A.M. Gaboury. 72 p.

Robbins, W.H., and H.R. MacCrimmon. 1974. The blackbass in America and Overseas. Sault Ste. Marie, Biomanagement and Research Enterprises. 196 p.

Sidbec - Dosco. 1968. Conversion factors and tables. Montreal, J.A.M. Gaboury. 72 p.