SAULT COLLEGE OF APPLIED ARTS & TECHNOLOGY
SAULT STE MARIE, ON

COURSE OUTLINE

Course Title: ICHTHYOLOGY

Code No.: NRT 228 Semester: III

Program: FISH & WILDLIFE TECHNICIAN

Author: Valerie Walker

Date: SEPT 2001 Previous Outline Date: NEW

Approved: _____

_____

Dean, Natural Resources Date

Total Credits: 3 Prerequisite(s):
Length of Course: 3 hrs/week X 16 weeks
Total Credit Hours: 48

I. COURSE DESCRIPTION:

This course concentrates on fundamental aspects of anatomy, physiology, ecology and natural history of fishes of the Great Lakes Region. Lab sessions will develop skills in the identification and classification of freshwater fishes as well as in the identification of their common parasites. A freshwater small fish collection is required for submission.

II. LEARNING OUTCOMES AND ELEMENTS OF THE PERFORMANCE:

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

1. Identify freshwater fishes from the Great Lakes basin to the family, genus and species level based on taxonomic characteristics.

Potential Elements of the Performance:

- correctly identify both external and internal anatomical structures of a fish
- correctly demonstrate the use of meristics and morphometrics in fish classification
- recognize common fish families given key characteristics
- list the major fish orders and their associated families with species representatives for each family
- demonstrate effective use of a bifurcated (dichotomous) fish key
- identify to species Ontario's important sports and commercial fishes
- correctly identify to species juvenile salmonids and larval lamprey found in Ontario

This learning outcome will constitute approximately 40% of the course.

2. Demonstrate an understanding of the morphological and physiological adaptations of freshwater fishes to the aquatic environment.

Potential Elements of the Performance:

- discuss the relative proportions of marine versus freshwater species as well as the significance of fish relative to other vertebrates.
- explain the characteristics of water and its influence on fish design
- list the six (6) basic fish body shapes and key features for each
- list the various fish scale shapes and structures and discuss the

distinguishing features for each

- discuss the function of external/internal structures and basic physiology of a generalized fish including respiration, circulation, buoyancy and thermal regulation, osmoregulation, growth, nervous and endocrine systems and reproduction
- differentiate between anadromous and catadromous fishes, giving examples of each
- discuss the various reproductive strategies of fish and their relative success

This learning outcome will constitute approximately 25% of the course.

3. Outline the biology and ecology of selected freshwater fishes of Ontario.

- discuss the stages of fish development from egg to adult
- demonstrate an understanding of terminology specific to the salmon family.
- summarize the biology of significant Ontario fish species based on classification, range, description, habitat, food habits, reproduction and importance.
- outline the life cycle and discuss the importance of common parasites in Ontario
- discuss the role of fisheries as a reflection of the health of the environment

This learning outcome will constitute approximately 35% of the course.

III. TOPICS:

1. Fish Classification and Identification
2. Fish Ecology
3. Fish Biology

IV. REQUIRED RESOURCES/TEXTS/MATERIALS:

Ichthyology (NRT 228) Study Guide and Lab Manual,
Sault College of Applied Arts & Technology, Sault Ste.Marie.

Scott, W.B. and E.J. Crossman.1998. Freshwater Fishes of Canada.
Gate House Publications Ltd., Oakville, Ontario.

V. EVALUATION PROCESS/GRADING SYSTEM

Unit Tests	**30%**
Lab tests/Assignments	**45%**
Small Fish Collection	**15%**
Presentation	**10%**
	100%

Lab assignments and report values will be reduced at a rate of 10% per day for late submissions for a period of 5 days after the due date. After 5 days lab assignment/report value will be zero.

All labs and assignments must be submitted regardless of lateness to pass the course. Labs and/or tests missed without documented health or personal reasons will be valued at zero.

Method of Assessment (Grading Method) The following letter grade will be assigned:

A+	Consistently outstanding	(90% - 100%)
A	Outstanding achievement	(80% - 89%)
B	Consistently above average achievement	(70% - 79%)
C	Satisfactory or acceptable achievement in all areas subject to assessment	(60% - 69%)
R	Repeat -- The student has not achieved he objectives of the course and the course must be repeated.	(Less than 60%)
CR	Credit exemption	
X	A temporary grade, limited to situations with extenuating circumstances, giving a student additional time to complete course requirements.	

NOTE: Students may be assigned an "R" grade early in the course for unsatisfactory performance.

VI. SPECIAL NOTES:

Special Needs

If you are a student with special needs (e.g. Physical limitations, visual impairments, hearing impairments, learning disabilities), you are encouraged to discuss required accommodations with the instructor and/or contact the Special Needs Office, Room E1204, Ext. 493, 717 or 491 so that support services can be arranged for you.

Plagiarism

Students should refer to the definition of "academic dishonesty" in the "Statement of Students Rights and Responsibilities".

Students who engage in "academic dishonesty" will receive an automatic failure for that submission and/or such other penalty, up to and including expulsion from the course, as may be decided by the professor.

In order to protect students from inadvertent plagiarism, to protect the copyright of the material referenced and to credit the author of the material, it is the policy of the department to employ a documentation format for referencing source material.

Advanced Standing

Students who have completed an equivalent post-secondary course should bring relevant documents to the Coordinator, Natural Resources Programs.

Retention of Course Outlines

It is the responsibility of the student to retain all course outlines for possible future use in gaining advanced standing at other post-secondary institutions.

Substitute course information is available at the Registrar's Office.

VII. PRIOR LEARNING ASSESSMENT:

Please contact the Prior Learning Assessment Office (E2203) for further information.