

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

COURSE OUTLINE

Course Title: Fisheries Techniques
Course No: FOR316-3
Program: Integrated Resource Management Technology
Semester: Five
Author(s): Valerie Walker
Date: September 1996

APPROVED: _____ DATE: _____

TOTAL CREDITS: 3
PREREQUISITES: None
LENGTH OF COURSE: 3 Hours/week

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Fisheries Techniques

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COURSE OUTLINE

I. COURSE DESCRIPTION:

A practical course designed to provide the opportunity for students to collect fisheries data under field conditions. Students will learn a variety of fisheries techniques such as population assessment, fecundity studies, stomach content analysis, tagging and marking, sampling the commercial catch, egg collection and underwater biotelemetry.

Placements with federal (US and Canada) and provincial agencies will form the basis of the course evaluation.

II. LEARNING OUTCOMES AND ELEMENTS OF PERFORMANCE:

A. Learning Outcomes

1. Outline the various initiatives employed by the local federal and provincial agencies in collecting fisheries data
2. Demonstrate proficiency in the use of various fishing gear and equipment as well as the performing of various fisheries procedures as utilized by local fisheries agencies
3. Document field activities and data collected concisely in the form of field notes
4. Research information and document sources on a specific fisheries technique and present that information to classmates

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B. Learning Outcomes with Elements of Performance:

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

1. Describe basic initiatives employed by the local federal and provincial agencies in collecting fisheries data

Elements of the performance:

- * present a brief summary of the need to effectively collect fisheries data as it relates to successful management of a given species
 - * describe fisheries studies ongoing in the Algoma and Michigan Upper Peninsula areas and identify the agencies associated with each study area
 - * explain efforts to coordinate fisheries research between Ontario and Michigan
 - * explain sampling considerations in collecting fisheries data
2. Demonstrate proficiency in the use of various fishing gear as well as the performing of various fisheries procedures as utilized by local fisheries agencies

Elements of the performance:

- * set a gill net to specifications
- * set a trap net to specifications
- * use a seine to specifications
- * effectively operate an electrofishing unit to specifications and document data collected
- * effectively anesthetize fish and extract reproductive products of males and females to specifications
- * demonstrate proficiency in fertilizing, disinfecting and handling of eggs
- * effectively process fish with regards to length, weight, sex, state of sex organs, fin clips, marks or tags and general health
- * remove scales, otoliths spines or fins for ageing purposes and document information on a scale sample envelope

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Elements of the performance (con't):

- * examine, quantify and qualify stomach and ovary contents of fish
- * identify and enumerate fish species in commercial catches or experiment weirs

Employer assessment of proficiency and attitude will constitute 50% of the course's grade

3. Document details of field activities and data collected concisely in the form of mini technical reports

Elements of the performance

- * document data concisely and accurately on appropriate forms
- * document field activities concisely in field diary

This will constitute 40% of the course's grade

4. Research information and document sources on a specific fisheries technique and present that information to classmates

Elements of the performance

- * locate and collect information from a variety of sources
 - * evaluate material
 - * summarize
 - * document all sources using an accepted format (APA, MCA)
 - * develop visual aids
 - * present information orally to classmates according to style and conventions required

This learning outcome will constitute 10% of the course's grade

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III. TOPICS TO BE COVERED

Topics will be in the form of on-site placements with various local agencies. They may be 6 of the following:

1. Seine hauls for YOY walleye
2. Sea lamprey larval assessment
3. Fish stomach analysis
4. Commercial catch sampling
5. Commercial fishing operation
6. Whitefish fecundity study
7. Salmon weir processing
8. Spawning-taking operation

IV. Required Student Resources

1. Fisheries Techniques. 1983. Larry A. Nielsen and David L. Johnson (editors). American Fisheries Society. Bethesda, Maryland

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V. METHOD(S) EVALUATION

Evaluation in this course will be based on the students' ability to demonstrate proficiency in each of the four defined outcomes in Section II.

1. Supervisor Evaluation (50%)

For each on-site location where a fisheries technique is performed for an agency, the student's immediate supervisor will complete an evaluation of the student's competence and attitude

Each student must have a minimum of 6 evaluations. It is the student's responsibility to ensure the assessment of his/her performance is documented by the employer/supervisor and is submitted to the instructor using the form provided

2. Mini Technical Reports (40%)

The student is expected to document the details of each of the 6 fisheries techniques placements performed. Mini technical reports will include:

- * date/time/location (map)
- * supervisor/overseer and titles
- * objective(s) of the work performed
- * overview of program under which work was performed
- * details of procedure including gear used
- * summary of results for the day (tables, figures)
- * critique of procedure/methodology

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Each student will research and present to the class an overview of a particular fisheries technique.

Topics include:

- Fish Eggs and Larvae
- Biotelemetry
- Fish Kill Investigation
- Sampling with Toxicants
- Quantitative Description of Diet
- Sampling the Commercial Catch
- Sampling the Recreational Fishery

Visual aids should be developed and utilized. A typed summary of the topic as well as references used will be provided to the instructor

Summary of Marking Scheme

| | | |
|----|----------------------------|-------|
| 1. | Supervisors Evaluation | 50% |
| 2. | Mini Technical Reports (6) | 40% |
| 3. | Presentation | 10% |
| | | <hr/> |
| | | 100% |

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Course Grading Scheme

| | | |
|----|------------|--|
| A+ | 90% - 100% | outstanding achievement |
| A | 80% - 89% | above average achievement |
| B | 70% - 79% | average achievement |
| C | 60% - 69% | satisfactory achievement |
| R | repeat | |
| X | | a temporary grade that is limited to instances where special circumstances have prevented the student from completing objectives by the end of the semester. An "X" grade must have the Dean's approval and has a maximum time limit of 120 days |

VI. SPECIAL NOTES