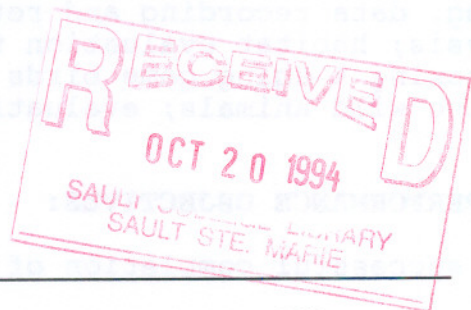


SAULT COLLEGE OF APPLIED ARTS & TECHNOLOGY  
SAULT STE. MARIE, ONTARIO

COURSE OUTLINE



COURSE TITLE: WILDLIFE SURVEYS  
CODE NO.: FOR 247-4 SEMESTER IV  
PROGRAM: FISH AND WILDLIFE TECHNICIAN  
AUTHOR: H. A. COOPER  
DATE: OCTOBER 1994 PREVIOUS OUTLINE DATED: JANUARY 1990

APPROVED: *[Signature]* DEAN  
DATE: 94-10-13

WILDLIFE SURVEYS

FOR 247-4

COURSE NAME

COURSE NUMBER

TOTAL CREDIT HOURS - 64

PREREQUISITE(S):

**I. PHILOSOPHY/GOALS:**

This course is aimed at the understanding and performing of various techniques essential for wildlife management. Topics include: Field note taking, data recording and retrieval; literature searches; food habit analysis; habitat evaluation techniques; population estimation; criteria for sexing & aging game birds and mammals; methods of capture, handling and marking wild animals; evaluation of wildlife damage.

**II. PERFORMANCE OBJECTIVES:**

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

1. Use problem-solving procedures to assist in investigations and wildlife research.
2. Describe necropsy procedures for birds and mammals.
3. Perform food habit and habitat analysis surveys.
4. Estimate population levels of a variety of wildlife species by different techniques.
5. Correctly sex and age important wildlife.
6. Demonstrate ability to capture, handle and mark bird and mammal specimens.
7. Discuss methods of collecting and preserving biological specimens.
8. Outline types of damage done by different wildlife, and explain control methods.

**III. TOPICS TO BE COVERED:**

1. Introduction and Problem Solving.
2. Necropsy procedure.
3. Analytical Procedure - Food Habit Studies.
4. Habitat Evaluation Techniques.
5. Population Analysis and Evaluation.
6. Criteria of Sex and Age.
7. Methods of Capture, Handling and Marking Wild Animals.
8. Collection and Preservation of Biological Specimens.
9. Evaluation of Wildlife Damage.
10. Recent Tools in Wildlife Research.

WILDLIFE SURVEYS

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COURSE NAME

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IV. LEARNING ACTIVITIES

REQUIRED RESOURCES

Unit I - INTRODUCTION AND PROBLEM-SOLVING:

1. Solve typical wildlife management problem by a logical step-by-step sequence of investigation such as the scientific method.

Read: Ch. 1 - Schemnitz.  
"Problem solving"  
handout.  
Given the scenario of a typical problem a game manager encounters, complete the problem-solving chart.

2. Be familiar with the methods of performing literature searches, making effective field notes, and preparing abstracts on wildlife investigational techniques.

Read Ch.2 pg. 7-12 Schemnitz  
pgs 35-37 "  
Ch.4 p. 45-54 "  
Prepare wildlife abstracts as outlined in Laboratory Manual, Lab. #1.

Unit II - NECROPSY PROCEDURES:

1. Describe the major purposes for necropsy or post-mortem examinations.
2. Perform a necropsy satisfactorily on an animal and/or a bird.
3. Fully describe the physiological condition of the above specimen, referring to 4 types of physiological indicators of health

Read Ch. 7 - Schemnitz  
Ch. 8 "  
Read pages 89-98 from above.

Complete Laboratory #2 -  
Necropsy of a mammal/bird.

Read Ch. 8 p. 99-112 -  
Summarize the 4 major groups of physiological indicators.

Unit III - FOOD HABIT ANALYSIS:

1. Correctly state the values of food habit analysis.
2. Describe field and laboratory procedures for food habit investigation.

Read Ch. 9 - Schemnitz

Laboratory - Perform a Food Habit Study by stomach analysis (bird or mammal).

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IV. LEARNING ACTIVITIES

REQUIRED RESOURCES

Unit IV - HABITAT EVALUATION TECHNIQUES:

1. Explain the nutritional requirements and food analysis breakdowns for any herbivore and/or carnivore. Read Ch. 19, Schemnitz p. 305-306, 311-314, 319-322
2. Describe and perform the following techniques, including calculations:
  - food production, availability and consumption for herbivores
  - energy budgets and cover evaluation
  - wetland classification and analysisRead MNR "Standards and Guidelines" for deer, moose and other game species habitat analysis and requirements. Review Wetland Evaluation Manual. C.W.S. Do sample evaluation of a prescribed wetland.

Unit V - POPULATION ANALYSIS AND ESTIMATION:

1. Explain the major types of census and their strengths and limitations. Read Ch. 14 - Schemnitz pg. 221-229, 231-235
2. Be able to describe the methods and perform the required field work and calculations for specific techniques under the following headings:
  - total counts
  - sample census
  - mark - recapture techniques
  - indices of populationsRead M.N.R. publications "Guidelines for Pellet Group surveys" and "Procedure for Aerial Moose Surveys".

Unit VI - CRITERIA OF SEX AND AGE:

1. Explain the importances of knowing sex and age ratios. Read Ch. 11 - Schemnitz pages as assigned for selected species.
2. Correctly sex and age the following species or groups:
  - all common waterfowl from specimen or wing
  - all common fur-bearers, big game animals, small game animals
  - all game birds & waterfowlLab test on Sexing and aging all game species emphasis on:  
Waterfowl wing sex & age  
Deer and moose jaws  
Incisor sectioning  
Furbearer tooth sections

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IV. LEARNING ACTIVITIES

REQUIRED RESOURCES

Unit VII - CAPTURE, HANDLING AND MARKING WILD ANIMALS:

1. Demonstrate the ability to live trap or kill trap, as required, the following groups of animals:
  - nuisance birds or mammals
  - fur-bearers
  - big game species
  - small game birds or mammals
2. Explain the relative merits and deficiencies of marking by mutilation, colouring, and tagging.

Read Ch. 6 - Schemnitz

Lab Test on capturing and marking techniques.

Unit VIII- COLLECTION AND PRESERVATION OF BIOLOGICAL SPECIMENS:

1. Use suitable preservatives for skin and flesh retention.
2. Prepare a suitable study skin for class use.

Read Ch. 32 - Schemnitz p. 537-551

Prepare a suitable study skin in Laboratory using techniques pictured on pages 545-546. (to be graded).

Unit IX - EVALUATION OF WILDLIFE DAMAGE AND WILDLIFE CONTROL

Read Ch. 22 - Schemnitz

1. Identify predators and nuisance spp. by their signs.
2. Assess and control damage done by these species.

Identification of predator/ nuisance species damage or tracks or signs will be considered part of  
a) A field test b) Lab test (from slides/specimens)

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IV. LEARNING ACTIVITIES

REQUIRED RESOURCES

Unit X - NEW TOOLS IN RESEARCH:

Each student will summarize one of the following, as an oral presentation.

1. Explain the uses and future of some of the new and innovative tools and techniques used in research & wildlife investigations.

- Read Ch.12(p.203-209) - Use of Computers.
- Read Ch.13(p.211-220) - Modelling
- Read Ch.18(p.291-300) - Remote Sensing
- Read Ch.28(p.499-506) - Instrumentation
- Read Ch.29(p.507-520) - Telemetry
- Read Ch.30(p.521-530) - Radio isotope

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**V. METHOD(S) OF EVALUATION:**

3 Term tests based on theory	- 50%
2 Laboratory tests	- 30%
Lab reports, attendance	- 10%
"Technique" project	- 10%
	<hr/>
	100%

For theory, Audio-visual project, abstracts

A <sup>+</sup>	= 90% <sup>+</sup> consistently
A	= 80-89%
B	= 70-79%
C	= 60-69%

MARKS ARE CUMULATIVE

For Laboratory Tests

A <sup>+</sup>	= 95% <sup>+</sup> consistently
A	= 90-94%
B	= 75-89%
C	= 65-74%

MARKS ARE NOT CUMULATIVE

**VI. REQUIRED STUDENT RESOURCES:**

1. SCHEMNITZ, S.S., 1980, Wildlife Management Techniques Manual, The Wildlife Society, Washington, D.C., 686 p. (Campus Store)
2. Laboratory Manual for FOR312 - (Campus Store)
3. Laboratory Coat (Any supplier)
4. Dissecting Kit (Any supplier)
5. Snowshoes, hard hat for field trips

**VII. ADDITIONAL RESOURCES MATERIALS:**

Book Section: N/A

Periodical Section:

Magazines - Ontario Out-of-Doors  
Ontario Angler and Hunter  
Others as assigned

Journals - Journal of Wildlife Management 1966-1994  
Transactions of N.A. Wildlife Conference 1980-1994

**VIII. SPECIAL NOTES:**

Students are required to participate in winter field trips to various wildlife habitat areas, most of which are of 1 day duration.

