

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

COURSE OUTLINE

COURSE TITLE: WILDLIFE SURVEYS

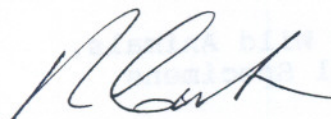
CODE NO.: FOR 247-4 SEMESTER : IV

PROGRAM: FISH AND WILDLIFE TECHNICIAN

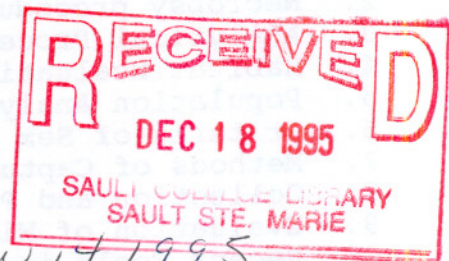
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DATE: DECEMBER 1995 PREVIOUS OUTLINE DATED: OCTOBER 1994

APPROVED:


DEAN

December 17, 1995
DATE



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 performance 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.

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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 - Bookhout pg. 3-7 |
| 2. Given the scenario of a typical problem a game manager encounters, complete the problem-solving chart. | "Problem Solving" handout. |
| 3. Be familiar with the methods of performing literature searches, making effective field notes, and preparing abstracts on wildlife investigational techniques. | Sampling Design - Bookhout pg. 11 - 19 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. | Read Ch. 13 - Bookhout - Causes of Mortality |
| 2. Perform a necropsy satisfactorily on an animal and/or a bird. | Complete Laboratory #2 - Necropsy of a mammal/bird. |
| 3. Fully describe the physiological condition of the above specimen, referring to 4 types of physiological indicators of health | Read Ch. 11 Bookhout - Summarize the 4 major groups of physiological indicators. |

Unit III - FOOD HABIT ANALYSIS:

- | | |
|---|---|
| 1. Correctly state the values of food habit analysis. | Read Ch. 10 - Bookhout |
| 2. Describe field and laboratory procedures for food habit investigation. | 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. 22,23, Bookhout
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. 9 - Bookhout (pages as assigned)
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. 8 - Bookhout (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. 5,6,7 - Bookhout
Ch. 5-Capturing Techniques
Ch. 6-Chemical Immobilization
Ch. 7-Marking Techniques

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.

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. 18 - Bookhout

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)

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.2 - Bookhout
- Use of Computers
Read Ch. 15 - Radiotelemetry
Read Ch. 17 - Harvest Management
Read Ch. 21 - G.I.S.

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V. METHOD(S) OF EVALUATION:

| | |
|------------------------------|-------|
| 2 Term tests based on theory | - 40% |
| 3 Laboratory tests | - 40% |
| Lab reports, attendance | - 10% |
| "Technique" project/display | - 10% |
| | <hr/> |
| | 100% |

For theory, Audio-visual project, abstracts

| | |
|----------------|---------------------------------|
| A ⁺ | = 90% ⁺ consistently |
| A | = 80-89% |
| B | = 70-79% |
| C | = 60-69% |

MARKS ARE CUMULATIVE

For Laboratory Tests

| | |
|----------------|---------------------------------|
| A ⁺ | = 95% ⁺ consistently |
| A | = 90-94% |
| B | = 75-89% |
| C | = 65-74% |

MARKS ARE NOT CUMULATIVE

VI. REQUIRED STUDENT RESOURCES:

1. Bookhout, T.A. (Ed.) 1994, Research and Management Techniques for Wildlife and Habitats, 5th ed., The Wildlife Society, Bethesda, Md. 740 pp.
2. Laboratory Manual for FOR247 - (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: As assigned for specific projects.

Periodical Section:

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

- Journals - Journal of Wildlife Management 1966-1996
- Transactions of N.A. Wildlife Conference 1980-1996

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.