SAULT COLLEGE OF APPLIED ARTS AND TECHNOLOGY

SAULT STE. MARIE, ONTARIO

Sault College

COURSE OUTLINE

COURSE TITLE: FIELD INVESTIGATIVE TECHNIQUES

CODE NO. : NRT302-3 **SEMESTER:** 5

PROGRAM: Integrated Resource Management Technology

AUTHOR: H.A. Cooper, M. Crofts

DATE: May 2000 **PREVIOUS OUTLINE DATED:** New

APPROVED:

_____ _____

DEAN **DATE**

TOTAL CREDITS: 3

PREREQUISITE(S): Nil

HOURS/WEEK: 3

I. COURSE DESCRIPTION:

This course will consist of a series of modules that are designed to give the student exposure to a diverse range of state-of-the-art field equipment and research techniques used in integrated natural resource management. This is a hands on, experiential course. Most modules involve data collection for resource management and research agencies in the Sault Ste. Marie area including the OMNR and CFS. Modules have been chosen that represent all program areas; forestry, fish and wildlife and park and recreation. Modules include Area of concern planning, collecting research quality forest measurements, ecological integrity monitoring, biotelemetry training, and recreational impact monitoring. Data collection techniques, analysis and report writing will be emphasized**.**

II. LEARNING OUTCOMES AND ELEMENTS OF THE PERFORMANCE:

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

1. **Understand the importance of precise field measurements and resource monitoring programs in the context of ecosystem based natural resource management**

   Potential Elements of the Performance:
   - Define expressions such as; ecological indicator, permanent sample plot, study design, etc.
   - Use accepted work conventions, protocols and methods in the field monitoring of herptiles, birds, or small mammals
   - Describe the process of designing a monitoring program balancing costs, effectiveness, sampling procedure, complexity

2. **Use various natural resource related field investigative techniques**

   Potential Elements of the Performance:
   - Demonstrate the safe and efficient use of field equipment
   - Demonstrate proper maintenance of field equipment
   - Use various monitoring tools such as video cameras, digital cameras, still cameras, levels, mensuration equipment, etc. effectively
   - Locate wildlife species by radio-telemetry using triangulation, homing and GPS location
   - Produce court-ready plaster casts of prints and tires for evidence

- Lift and interpret finger prints to be used as physical evidence in court
- Demonstrate at least two methods of determining time of death for enforcement purposes.
- Demonstrate proper technique for taking DNA field samples
- Use an in-stream respiration chamber to determine the microbial activity in headwater streams
- Write a report on the impact of disturbances on the ecology of headwater streams
- Re-establish and re-measure permanent sample plots
- Identify indicator plants in permanent sample plots

3. **Evaluate natural areas of concern used in Forest Management Planning and mitigate potential damage due to forestry operations**

Potential Elements of the Performance:

- Review the forest management planning process in Ontario by reading assignment from the Forest Management Planning Manual
- Discuss the concept of forest values and areas of concern
- Lay out AOC prescriptions in a mapping exercise
- Visit a forest site that is about to be harvested and apply student knowledge by laying out Areas of Concern on the area

4. **Recognize and evaluate impacts that cause degradation of recreational areas**

Potential Elements of the Performance:

- Demonstrate in park settings where, when and how degradation to soil, air ,water and biota are most likely to occur
- Use various techniques to monitor recreational impacts
- Discuss ways to minimize/repair damage
- Collect, tabulate and analyze data
- Write a summary report based on field activity

5. **Demonstrate excellence in data collection and interpretation**

Potential Elements of the Performance:

- Maintain accurate and legible field notes on each exercise
- Record data by accepted protocols
- Use appropriate data entry tools
- Prepare accurate and neat research plot location maps
- Use plot location tools (chain, compass, G.P.S.)

- Ensure data is properly archived (duplicates, back-ups etc.)
- Enter data into databases (EXCEL, ACCESS)
- Prepare professional and accurate reports

6. **Work effectively as a team**

Potential Elements of the Performance:

- Participate in all fieldwork activities
- Demonstrate leadership in aspects of field program logistics
- Contribute equally to data collection, report preparation and presentations
- Evaluate the contribution of other team members
- Evaluate contribution of self

III. TOPICS:

1. Ecological integrity Monitoring
2. Use of Biotelemetry in Resource management
3. Recreational Impact Monitoring and restoration
4. Areas of Concern and forest management
5. Fire ecology
6. Collection of physical evidence in the field (Field forensics)
7. Stream ecology and energy budgets

IV. REQUIRED RESOURCES/TEXTS/MATERIALS:

Students will be assigned reference material from week to week from the reserved section of the library. All other materials will be in the form of hand-outs

V. EVALUATION PROCESS/GRADING SYSTEM:

There will be a full day field or field/lab session every second week in this course. Attendance on each field trip will be mandatory. Non-attendance without a verified excuse will result in a “0” grade for all reports or other marks associated with that trip.

Evaluation :

Technical reports on field exercises	60%
Quizzes based on previous lab session	15%
Attendance and participation	25%
	100%

There will be neither rewrites nor opportunities to make up missed field exercises in this course. Written reports based on field trips will not be accepted by the instructors unless the student attended the field trip in question.

The following semester grades will be assigned to students in postsecondary courses:

Grade	Definition	Grade Point Equivalent
A+	90 - 100%	4.00
A	80 - 89%	3.75
B	70 - 79%	3.00
C	60 - 69%	2.00
R (Repeat)	59% or below	0.00
CR (Credit)	Credit for diploma requirements has been awarded.	
S	Satisfactory achievement in field placement or non-graded subject areas.	
U	Unsatisfactory achievement in field placement or non-graded subject areas.	
X	A temporary grade. This is used in limited situations with extenuating circumstances giving a student additional time to complete the requirements for a course (see *Policies & Procedures Manual – Deferred Grades and Make-up*).	
NR	Grade not reported to Registrar's office. This is used to facilitate transcript preparation when, for extenuating circumstances, it has not been possible for the faculty member to report grades.	

VI. SPECIAL NOTES:

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

Retention of course outlines:
It is the responsibility of the student to retain all course outlines for possible future use in acquiring advanced standing at other postsecondary institutions.

Plagiarism:
Students should refer to the definition of “academic dishonesty” in *Student 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/program, as may be decided by the professor/dean. 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.

Course outline amendments:
The Professor reserves the right to change the information contained in this course outline depending on the needs of the learner and the availability of resources.

Substitute course information is available in the Registrar's office.

VII. PRIOR LEARNING ASSESSMENT:

Students who wish to apply for advanced credit in the course should consult the professor. Credit for prior learning will be given upon successful completion of a challenge exam or portfolio.

VIII. DIRECT CREDIT TRANSFERS:

Students who wish to apply for direct credit transfer (advanced standing) should obtain a direct credit transfer form from the Dean’s secretary. Students will be required to provide a transcript and course outline related to the course in question.