SAULT COLLEGE OF APPLIED ARTS AND TECHNOLOGY

SAULT STE. MARIE, ONTARIO

Sault College

CICE COURSE OUTLINE

COURSE TITLE: Integrated Resource Management

CODE NO. : NRT 220   **SEMESTER:** 2

MODIFIED CODE: NRT023

PROGRAM: Fish and Wildlife, Parks and Outdoor Recreation, Forestry

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MODIFIED BY: Jenae Young, CICE Program

DATE: Dec. 2004   **PREVIOUS OUTLINE DATED:** Dec. 2003

APPROVED:

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                         DEAN   **DATE**

TOTAL CREDITS: 4

PREREQUISITE(S): None

HOURS/WEEK: 3 Hours/Week

I. **COURSE DESCRIPTION:**

This course will explain the principles and practices involved in carrying out Sustainable Resource Management. The full range of values provided by forests will be described and methods of protecting, maintaining or enhancing those values will be presented. Forest, wildlife or recreation management practices, which integrate the management of all forest values, will be introduced.

II. **LEARNING OUTCOMES AND ELEMENTS OF THE PERFORMANCE:**

Upon successful completion of this course, the CICE student, with the assistance of an Educational Assistant will demonstrate a basic ability to:

1. Explain the principles of Sustainable Resource Management and describe the principles, which must be followed if it is to be successfully carried out.

   Potential Elements of the Performance:
   - Distinguish between a forest use and a forest value
   - List and discuss at least 5 uses and values provided by forests
   - Describe the four types of diversity found in forested landscapes
   - Explain the reasons that biodiversity is important
   - Discuss ways that biodiversity can be maintained while carrying out resource management
   - Have a understanding of the purpose of the Emulation of Natural Disturbance Patterns Guidelines

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

2. Describe an old-growth forest, explain the values provided by these ecosystems, and explain Ontario's recent strategy for old-growth conservation.

   Potential Elements of the Performance:
   - Describe a typical old-growth forest in terms of its age and disturbance history
   - List and give examples of at least four types of values provided by old-growth forest ecosystems
   - Discuss the age pattern of forests in Ontario and using age criteria for each forest type, evaluate how much old-growth of each forest type exists in this province
   - Explain why the preservation of large areas of unmanaged forests is important
   - Summarize the recommendations of Ontario's strategy for old-growth conservation

   This learning outcome will constitute 5% of the course's grade.

3. Explain the potential effects of resource development on wildlife and make suggestions of how management activities can be modified to provide adequate wildlife habitat.

   Potential Elements of the Performance:
   - Compare and describe the differences between the effects that logging and natural disturbances have on wildlife habitats
   - Describe the habitat needs of major Ontario generalist and specialist wildlife species
   - Explain the concepts of Featured Species and Endangered Species management and show how to apply these concepts
   - Describe habitat needs of selected species and the forest management guidelines prepared for these species

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

4. Explain how non-timber values are currently being protected when resource management activities take place on Crown land in Ontario

   Potential Elements of the Performance
   - Describe forest management plan requirements
   - Show how non-timber values are identified during the forest management planning process
   - Prepare AOC prescriptions and draw AOCs to scale on forest maps
   - Describe the compliance monitoring process as it is currently carried out on Crown land in Ontario

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

5. Describe Ontario's system of protected areas and explain the values provided by these unmanaged spaces.

   Potential Elements of the Performance

   - Describe at least 5 benefits that protected areas provide to our society
   - List three types of protected area systems that occur in Ontario and explain how each is different
   - Describe the objective of the National Park system and explain how the four types of National Parks fulfill this objective
   - List the three classes of Provincial Park in Ontario, giving examples, and describe the goal of each park type
   - Explain provincial park zoning
   - Summarize the highlights of the Ontario parks business plan

   This learning outcome will make up 10% of the course's grade.

6. Explain the current Crown land use strategy in Ontario and describe the contents of Ontario's Living Legacy program.

   - List and describe five parts of the living Legacy land use plan

   - Explain how the Living Legacy trust will fund forestry and fish and wildlife opportunities
   - Have informed opinions about current Crown land use planning.
   - Explain the function of the Crown Land Use Atlas

   This learning outcome will make up 10% of the course's mark.

7. Evaluate the effectiveness of co-management agreements in meeting sustainable resource management objectives.

   Potential Elements of the Performance:
   - Distinguish between state management, self-management and co-management
   - Describe the process for developing a co-management agreement

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

8. Participate effectively in processes used to resolve land use conflicts

   Potential Elements of the Performance

   - Describe the forest values of importance to a wide variety of
   - Crown land user groups
   - Explain why there are land-use conflicts between specific user
   - groups
   - Role play, using a land use case study, in an exercise which
   - shows how land use consensus

   This learning outcome will constitute 5% of the course's grade

9. Explain concepts relating to forest hydrology and watershed management and describe natural resource methods that can be used to manage watersheds.

Potential Elements of the Performance
- Be able to recognize important hydrological terms
- Classify streams based on how long they carry water each year and how they are 'ordered' in a watershed
- Calculate a watershed's drainage density
- Reproduce a flow chart of the water cycle
- Describe at least 4 methods that can be used to slow the run off from a natural ecosystem
- Describe 4 types of wetlands and discuss the values that they provide
- Explain at least 5 ways that beaver dams benefit the natural environment

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

10. Discuss the potential impact of natural resource activities on terrestrial and aquatic ecosystems.

Potential Elements of the Performance:
- Describe the potential effects of forest harvesting on water quality and quantity
- List the potential effects of recreational activities on watersheds
- List the pesticides commonly used in forest management activities, recognize the toxicity of each and explain how they might accidentally enter aquatic ecosystems
- Explain how forest management activities should be carried out to minimize the risk of environmental damage
- Describe the potential effects of road building on the forest environment
- Explain how roads should be planned, located and constructed to minimize negative environmental effects

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

11.   Undertake an erosion control program to protect shorelines and stream banks from erosion.

Potential Elements of the Performance
- Explain the processes at work building and eroding shorelines and stream banks
- Describe the different kinds of erosion caused features found along shorelines and stream banks and explain how they are formed
- Recommend protection measures to protect stream banks and shorelines from erosion

- Identify the activities carried out by Conservation Authorities to meet their mandate

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

III.   TOPICS:

1.   Maintaining Biodiversity – Uses and values provided by forests and principles to follow when practicing sustainable resource management are described. Diversity and its importance to forest ecosystems is explained.

2.   Old Growth Forests – Criteria by which to identify Old Growth forests is presented and the values which they provide explained. Ontario's strategy to conserve Old Growth forests is introduced.

3.   Protecting Wildlife Habitats – The habitat needs of selected game and non game wildlife species is described and the effects that resource management can have on these habitats is presented.

4.   Protecting Forest Values- this module will introduce the process of Forest Management Planning and describe how non-timber values are identified and protected during resource management activites.

5.   Parks and Protected Areas – The role of parks and protected areas in Ontario will be examined and the types of protected areas in this province will be described. Park system mandates, classifications and park zoning will be introduced.

6.   Ontario's Living Legacy - The current Crown land-use strategy will be examined and discussion will take place regarding its implementation.

7. Co-management of Natural Resources- Cooperative management will be introduced. A case study examining resource conflicts and processes for resolution will be examined.

8. Forest Hydrology – The hydrologic processes which take place in undisturbed watersheds will be explained and techniques for classifying watersheds presented. Natural features, which regulate water flows throughout an ecosystem, are introduced.

9. Impacts of Forest Management on Terrestrial and Aquatic Environments -The potential effects of forest management is presented and ways to minimize those impacts through Adaptive management is explained.

10. Shoreline and Streambank Management and Protection – The concept of erosion and how this process takes place on shorelines and stream banks is presented. Measures, which can be taken to protect affected areas, is described.

IV. REQUIRED RESOURCES/TEXTS/MATERIALS:

Integrated Resource Management Study Guide; 2003 updated edition.

V. EVALUATION PROCESS/GRADING SYSTEM:

Tests – 3 tests worth 50%
Assignments, Quizzes; there will be 8 to 10 assignments throughout the course. Video presentations or guest speakers may be followed by a quiz.

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%	
B	70 - 79%	3.00
C	60 - 69%	2.00
D	50 – 59%	1.00
F (Fail)	49% and below	0.00
CR (Credit)	Credit for diploma requirements has been awarded.	

S	Satisfactory achievement in field /clinical placement or non-graded subject area.
U	Unsatisfactory achievement in field/clinical placement or non-graded subject area.
X	A temporary grade limited to situations with extenuating circumstances giving a student additional time to complete the requirements for a course.
NR	Grade not reported to Registrar's office.
W	Student has withdrawn from the course without academic penalty.

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 professor and/or the Special Needs office. Visit Room E1101 or call Extension 493 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.

Assignments:
Assignments received after 4:00 pm. on the day they are due will
receive a 10% mark deduction. For every day an assignment is late,
10% will be deducted.
Tests:
:ed 1 week ahead of the day they are scheduled. It is the responsibility of
the instructor, ahead of time, if a test will be missed otherwise a mark of

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.

CICE Modifications:

Preparation and Participation

1.   An Integrative Educational Assistant will attend class with the student(s) to assist with inclusion in the class and to take notes.
2.   Students will receive support in and outside of the classroom (i.e. tutoring, assistance with homework and assignments, preparation for exams, tests and quizzes.)
3.   Study notes will be geared to test content and style which will match with modified learning outcomes.
4.   Although the Integrative Educational Assistant may not attend all classes with the student(s), support will always be available. When the Integrative Educational Assistant does attend classes he/she will remain as inconspicuous as possible.

CICE Modifications:

A.   Tests may be modified in the following ways:

1.   Tests which require essay answers may be modified to short answers.
2.   Short answer questions may be changed to multiple choice or the question may be simplified so the answer will reflect a basic understanding.
3.   Tests which use fill in the blank format may be modified to include a few choices for each question, or a list of choices for all questions. This will allow the student to match or use visual clues.
4.   Tests in the T/F or multiple choice format may be modified by rewording or clarifying statements into layman's or simplified terms. Multiple choice questions may have a reduced number of choices.

B.   Tests will be written in the Learning Assistance Centre with assistance from an Integrative Educational Assistant.

   The Integrative Educational Assistant may:

1.   Read the test question to the student.
2.   Paraphrase the test question without revealing any key words or definitions.
3.   Transcribe the student's verbal answer.
4.   Test length may be reduced and time allowed to complete test may be increased.

C.   Assignments may be modified in the following ways:

1.   Assignments may be modified by reducing the amount of information required while maintaining general concepts.
2.   Some assignments may be eliminated depending on the number of assignments required in the particular course.

   The Integrative Educational Assistant may:

1.   Use a question/answer format instead of essay/research format
2.   Propose a reduction in the number of references required for an assignment
3.   Assist with groups to ensure that student comprehends his/her role within the group
4.   Require an extension on due dates due to the fact that some students may require additional time to process information
5.   Formally summarize articles and assigned readings to isolate main points for the student
6.   Use questioning techniques and paraphrasing to assist in student comprehension of an assignment

D.   Evaluation:

   Is reflective of modified learning outcomes.