DOC.#460

SAULT COLLEGE OF APPLIED ARTS & TECHNOLOGY

SAULT STE. MARIE, ONTARIO

COURSE OUTLINE

Course Title: WATERSHED MANAGEMENT

Code No.: FOR 318-4

Program: FISH & WILDLIFE, PARKS & RECREATION
FOREST MANAGEMENT

Semester: VARIOUS

Date: JUNE 1988

Author: R. CURRELL

New: _____ Revision: X

APPROVED: _____ August 5/88
Chairperson Date

WATERSHED MANAGEMENT
FOR 318-4

WATERSHED MANAGEMENT	FOR 318-4
Course Name	Course Number

PHILOSOPHY/GOALS:

This is a course intended to give the student an understanding of water as it exists in the forest environment. The course will demonstrate through lectures, labs and field trips how resource development should proceed in order that water quality is maintained and aquatic environments are disturbed as little as possible.

METHOD OF ASSESSMENT (GRADING METHOD)

Unit Tests (3)	50%
Assignments (5)	50%

GRADING:

<60% = R
60 - 69% = C
70 - 79% = B
80%+ = A

A total of 3 unit tests based on course material will be written at the completion of units 2, 4 and 6 and will account for 50% of the course mark.

All field trips are compulsory. Students missing field trips without documentation will receive an automatic "0" for the corresponding technical report.

Assignments make up 50% of the total course mark. They are due in class two weeks after assigned; 10% of the mark will be deducted for every date late.

Marks are cumulative and 60% is considered a pass. If a final grade of less than 60% is received, a test based on material from the entire course will be written during the rewrite period.

WATERSHED MANAGEMENT
FOR 318-4

TEXTBOOK(S): No Textbook

References:

Stream Enchancement Guide, 1980, Fisheries and Oceans and Ministry of the Environment, Province of British Columbia

Great Lakes Shore Processes and Shore Protection, 1981

Design Guidelines for Forest Management, 1980, Ontario Ministry of Natural Resources

WATERSHED MANAGEMENT
FOR 318-4

UNIT #1 Important Physical Properties of Water Affecting Management

- density relationships
- thermal and oxygen stratification
- zonation of lakes and productivity
- wind action, waves and seiches
- temperate streams

Assignment 1 - Lake Productivity

UNIT #2 Control of Runoff in Watersheds

- basic run-off equation
- measurement of streamflow
- control of run-off by vegetation and proper management practices

Assignment 2 - Watershed Measurements
(Turkey Lakes)

- role of natural and artificial impoundments, reservoirs and ponds
- construction of impoundments and ponds for private watersheds

Assignment 3 - Wetland Inventory

UNIT TEST 1

UNIT #3 The Aquatic Community and its Habitat

- key invertebrates and vertebrates and their biological requirements to survive
- biological indicator species
- water pollution and its effects on aquatic environments

Assignment 4 - Biological Indicators
(W. Davignon Creek)

UNIT #4 - Shore Processes and Shore Protection

- shore features and processes
- shore protection; criteria and guidelines
- legalities of shore protection devices

UNIT TEST 2

UNIT #5 - Forestry Practices and Watershed Management

- types of logging and forest management activities affecting watersheds
- hydrological effects of forest management
- proper management practices to minimize damage
- construction of resource roads, stream crossings and culvert installation

Assignment 5 - Road Construction and Forest Management to Minimize Environmental Damage

UNIT #6 Stream Improvement Measures

- problem situations in streams
- erosion control
- streamside improvements
- stream channel improvements
- stream flow control

WATERSHED MANAGEMENT
FOR 318-4

GRADING

60%.....I
60 - 69%.....C
70 - 79%.....B
80%.....A

TECHNICAL REPORT FORMAT

Technical reports will be brief and concise and complete with diagrams/figures and tables wherever possible. Figures will be neat, labelled by hand - lettering and done entirely in black ink.

Length of report will be a maximum of 4 pages (not including title page and reference list) and will be typed or neatly printed.

Technical reports will include:

1. title page
2. abstract/summary
3. introduction
4. procedure
5. results
6. calculations (if applicable)
7. discussion and conclusion
8. appendices (if applicable)
9. reference list using the author - year system (see reference list in this handout)

N.B. FOOTNOTES ARE NOT ACCEPTABLE IN SCIENTIFIC TECHNICAL REPORTS