

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

COURSE OUTLINE

COURSE TITLE: WATERSHED MANAGEMENT

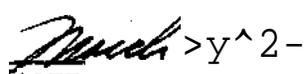
CODE NO.: WTR2 21-4 SEMESTER: IV/VI

PROGRAM: WATER RESOURCES/ENVIRONMENTAL ENGINEERING TECHNOLOGY

AUTHOR: DAVID TROWBRIDGE

DATE: FEBRUARY 19 9 2 PREVIOUS OUTLINE DATED: APRIL 1990

APPROVED:   
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DATE

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**WATERSHED MANAGEMENT**

**WTR 221-4**

**COURSE NAME**

**COURSE NUMBER**

**TOTAL CREDIT HOURS: 64**

**PREREQUISITE(S): NONE**

**I. PHILOSOPHY/GOALS:**

This course provides an overview of the field of watershed management. It is intended to provide the student with a background in water resource policies and practices currently used. Methods to calculate runoff, erosion prevention, flood plain mapping and stream control structures are discussed. The course will cover both water quantity and water quality in both the natural and developed landscape.

**II STUDENT PERFORMANCE OBJECTIVES:**

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

1. Describe the important physical properties of water affecting management.
2. Calculate runoff in watersheds and describe the control of runoff by proper management practices.
3. Describe shoreline processes and explain guidelines and devices for shoreline protection.
4. Outline stream improvement measures including channelization and impoundment to control storm water run-off.
5. Discuss the procedure for floodline mapping and the use of dams and other structures to control flooding and erosion.
5. Discuss the role of wetlands in watershed management.

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**ri. STUDENT PERFORMANCE OBJECTIVES:** (Continued)

7. Describe the effect of urban runoff in terms of quantity and quality as it affects the watershed and receiving waterbody.
8. Discuss the current practices in forestry, agriculture and urbanization on the watershed.
9. Understand the process in a Watershed Management Study.

**III. TOPICS TO BE COVERED:**

1. Physical Properties of Water Affecting Management
2. Control of Runoff in Watersheds
3. Shoreline Process and Protection
4. Stream Improvement
5. Floodline Mapping, Dams, Control Structures
6. The Role of Wetlands
7. Urban Runoff Quantity and Quality
8. Effect of Forestry, Agriculture and Urbanization
9. Case Studies: Grand River, Fort Creek

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**IV. METHOD OF EVALUATION:**

The final grade will be based on the following components:

3 Tests (worth 10%, 15%, 25% respectively)	50%
4 Assignments (worth 10% each)	40%
Participation, In-class quizzes	10%

Tests will be given approximately in weeks 5, 10 and 15 of the semester.

Assignments are due two weeks after assigned and late assignments will be penalized 10% per day. All assignments must be submitted to pass the course.

marks are cumulative and 50% is considered a passing mark.

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

**V. REQUIRED STUDENT RESOURCES:**

Watershed Management Lab Manual; 1990 edition

**VI. ADDITIONAL RESOURCE MATERIALS AVAILABLE IN THE COLLEGE LIBRARY BOOK SECTION:**

1. Wild Land Watershed Management by Donald R. Satterlund, published by John Wiley & sons, 1972. Call No. TC 409 .537 1972
2. Storm Drainage Management by John R. Sheaffer and Kenneth R. Wright, published by Marcel Dekker, Inc., ,1982. Call No. TC 5 30 .U7
3. Watershed Management Guidelines for Logging and Road Construction in Alberta by R.L. Rothwell, published by Environment Canada, 1978. Call No. TC 426.5 A4 R67
4. Grand River Basin Water Management Study, published by the Grand River Implementation Committee, 1982. (available from instructor)

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VI. ADDITIONAL RESOURCE MATERIALS AVAILABLE IN THE COLLEGE LIBRARY  
BOOK SECTION: (Continued)

PERIODICAL SECTION:

Magazines :

A.W.W.A Journal

Environment

VII. SPECIAL NOTES:

Students with special needs (e.g. physical limitations, visual impairments, hearing impairments, learning disabilities) are encouraged to discuss required accommodations confidentially with the instructor. i

Your instructor reserves the right to modify the course as he/she deems necessary to meet the needs of students. \