

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

COURSE OUTLINE

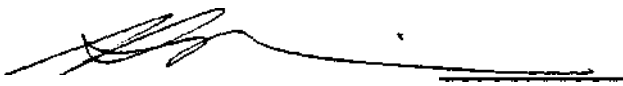
COURSE TITLE: FIELD HYDROLOGY

/ CODE NO.: WTR 100-4 **SEMESTER:**

PROGRAM; WATER RESOURCES ENGINEERING TECHNOLOGY

W AUTHOR: J. THEIL

DATE: jm,"E: 199 3 **PREVIOUS OUTLINE DATED:** APRIL 1990

APPROVED: 
DEAN, SCHOOL OF SCIENCES &
NATURAL RESOURCES **DATE**

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TOTAL CREDIT HOURS: 75

PREREQUISITE(S); NONE

I. PHILOSOPHY/GOALS:

This course deals with linear and angular measurements, compass and map utilization, slope measurements, the hydrologic cycle, hydrometric measurements and computations.

II. STUDENT PERFORMANCE OBJECTIVES:

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

1. Do linear and angular measurements
2. Do conversion of units and calculations of areas
3. Conduct traverse surveys, make computations, use a compass, interpret topographic mapping, and compute watershed areas
4. Run a traverse from map to field
5. Study a topographic map and map indexing
6. Determine slope using linear and angular measurements
7. Draw a contour map and determine stream flow directions
8. Describe the hydrologic processes
9. Perform hydrometric measurements including streamflow, precipitation and evaporation
10. Compute average rainfall for a given storm over an area
11. Interpret stage flow hydrographs, rainfall and other continuously monitored hydrologic variables
12. Calculate various physical parameters of a sample watershed

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III. TOPICS TO BE COVERED:

TOPICS	HOURS
1. INTRODUCTION	9
1.1 Importance of field surveys	
1.2 Linear and angular measurements	
1.3 Conversion of units, (SI and English)	
1.4 Area computations	
1.5 Scale conversions	
2. COMPASS SURVEY	12
2.1 Familiarization with the instruments (compass, chain, measuring tape)	
2.2 Declination, bearing, azimuth	
2.3 Methods of field traversing	
2.4 Computations	
MAP UTILIZATION	
3.1 Topographic maps utilization	
3.2 Delineation of watersheds	
3.3 Contour maps	
3.4 Slope determination	
3.5 Geomorphic characteristics of a watershed	
INTRODUCTION TO HYDROLOGY	12
4.1 Water resources engineering	
4.2 Hydrologic cycle and processes	
4.3 Water budget	
4.4 Precipitation and evaporation measurements	
4.5 Stream flow surveys	

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IV. METHOD OF EVALUATION

Field work and assignments	35%
Mid term examination	25%
Final examination	40%

GRADING

A+	90 - 100
A	80 - 89
B	70 - 79
C	60 - 69

A passing grade will be based on a minimum grading of 50%. Students obtaining a composite grading of 55 to 59% may be allowed to complete a supplementary examination.

V. REQUIRED STUDENT RESOURCES:

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- Laborator~r Manual Field Hydrology
- Topographic Mao, 41-K/9, 1:50,000

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

- Ponce, Victor M. (1989), Engineering Hydrology, Prentice Hall
- Lindsley, Ray K., and Joseph B. Franzini, Water Resources Engineering, McGraw-Hill Book Company
- Viessman, Warren Jr., J.W. Knapp and G.L Lewis, Introduction to Hydrology, 2nd Edition, Harper and Row Publishers, New York.

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.

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