

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

COURSE OUTLINE

Course Title: FIELD HYDROLOGY
Code No.: VJR 100-4
Program: WATER RESOURCES ENGINEERING TECHNOLOGY
Semester:
Date: SEPTEMBER, 1989
Author: SUBHASH C. VERMA

New: Revision: X

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Chairperson

Date ^i > yf / ST
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FIELD HYDROLOGY

ViTR 100-4

Course Name

Course Number

PHILOSOPHY/GOALS:

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

OBJECTIVES;

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

METHOD OF ASSESSMENT (GRADING METHOD):

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

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GRADING

A+	90	-	100
A	80	-	90
3	70	-	79
	60	-	69

A passing grade will be based on a minimum grading of 60%. Students with a gradescore of 55 to 59% may be allowed to complete a supplementary examination.

TEXTBOOK(S)

- Laboratory Manual For Plummer/McGeary's Physical Geology, by J.H. Zurmberge and R.H. Ruttford. Wm. C. Brown Company publishers, Dubuque, Iowa.

REFERENCES;

- Hydrology and Quality of Water Resources (1981
by M.J. Hammer and K.A. MacKichan
John Wiley & Sons

FIELD HYDROLOGY

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COURSE OUTLINE:

1. INTRODUCTION
 - 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
 - 2.1 Familiarization with the instruments (compass, chain, measuring tape)
 - 2.2 Declination, bearing, azimuth
 - 2.3 Methods of field traversing
 - 2.4 Computations
 - 2.5 Exercises in plotting traverse
- 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
- 4.1 Water resources engineering
 - 4.2 Hydrologic cycle and processes
 - 4.3 Water budget
 - 4.4 Weather patterns
 - 4.5 Precipitation and evaporation measurements
 - 4.6 Stream flow surveys
 - 4.7 Stream flow records
 - 4.8 Probability of hydrologic events
 - 4.9 Ground water hydrology
 - 4.10 Water table measurements and maps