

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

COURSE OUTLINE

Course Title: HYDROLOGY
Code No.: HYD 110-5
Program: WATER RESOURCES
Semester: FALL
Date: SEPTEMBER, 1983
Author: S. C. VERMA

New:

Revision:

APPROVED:

Chairperson

Date

HYDROLOGY
Course Name

HYP 110-5
Course Number

PHILOSOPHY/GOALS:

Recognize and identify the processes in the hydrologic cycle which are important for a variety of types of watersheds and watershed conditions. Measurement and instruments required for common hydrological problems both from quantity as well as quality point of view. Basic calculation/computation techniques, including simple deterministic modelling and stochastic analysis for the solution of common hydrological problems.

METHOD OF ASSESSMENT (GRADING METHOD):

Laboratory Exercises & Assignment Problems	25%
Midterm Examination	25%
Final Examination	50%

TEXTBOOK(S):

Hydrology and Quality of Water Resources
by Mark J. Hammer and Kenneth A. Mackichan (1981)
John Wiley and Sons, Inc.

COURSE OUTLINE

1. Introduction:

- hydrologic cycle
- water quantity
- water quality

2. Precipitation

- measurement of rain and snow
- area! variation
- time variability of precipitation at a point
- analytical methods for computing averages

3. Evaporation

- definition
- measurement and estimation of evaptranspiration

4. Stochastic hydrology

- probability approach to the analysis of hydrologic problems
- normal distribution of hydraulic data
- normal distribution of data

5. Rainfall-runoff relationships

- infiltration measurement and estimation
- factors affecting runoff
- hydrograph analysis
- stream flow measurement
- peak flow runoff rates
- unit hydrograph
- synthetic hydrograph
- flood routing
- control of floods

6. Water Quality

- effects of pollution
- sampling and testing
- assessment of water quality

7. Hydrology of impounded waters

- construction of reservoirs
- reservoir yield
- thermal stratification

8. Water quality in impounded waters

- influence of water quality on public use
- ecology of lakes and reservoirs

8. Water resources management

- water quality management
- water quantity management