

SAULT COLLEGE OF APPLIED ARTS & TECHNOLOGY

SAULT STE. MARIE, ONTARIO

COURSE OUTLINE

Course Title: WATER SUPPLIES & TREATMENT
Code No.: WTR 201-4
Program: WATER RESOURCES
Semester: IY
Date: 1983-10-25
Author: S. VERMA

New:

Revision:

APPROVED:



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Date

WATER RESOURCES
WTR 201-4
WATER SUPPLIES & TREATMENT

WATER SUPPLIES & TREATMENT

Course Name

WTR 201-4

Course Number

OBJECTIVES:

1. Understand the need for the production of highest quality of water.
2. Understanding the testing of bacterial and physiochemical characteristics of water as parameters of water quality.
3. An appreciation of the sources of water for water supply.
4. Knowledge about the various unit operations {physical and chemical} commonly used in the water supply systems.
5. A knowledge of the role of plant operator in maintaining the quality of water under different situations.

EVALUATION:

ASSIGNMENTS:

All assignments are due at 1700 hours on the date of submission.

FIELD REPORTS:

All reports are due one week after the field trip is made.

BASIS OF FINAL MARK:

Assignment - Problems and Laboratory Exercises	25%
Field Trip Reports	5%
Mid-Term Examination	25%
Final Examination	45%

WATER RESOURCES
WTR 201-4
WATER SUPPLIES & TREATMENT

TEXTBOOK:

Hammer, Mark J., Water & Wastewater Technology (SI version), John Wiley & Sons, Toronto, 1977T

REFERENCES:

Fair, Gordon Maskew, Geyer, John C, Elements of Water Supply and Wastewater Disposal, 2nd edition, John Wiley & Sons, Toronto, 1971.

Clark, J.W., Viessman, W. Jr., Hammer, M.J., Water Supply and Pollution Control, 2nd edition. International Textbook Co., Toronto, 1971.

COURSE OUTLINE:

Water quality and pollution, water processing, sedimentation, filtration, chemical treatments, softening and desalination, chlorination, flouridation, operation of water works.

1. Water quality and pollution

- 1.1 Bacteriological characteristics
- 1.2 Bacteria testing procedure
- 1.3 Physical and Chemical characteristics
- 1.4 Other chemical considerations

2. Water processing

- 2.1 Introduction to water supply systems
- 2.2 Sources of water supplies
- 2.3 Unit operations of water treatment
- 2.4 Surface water and gound water treatment systems
- 2.5 Disposal of waste from water treatment processes
- 2.6 Mixing and flocculation
- 2.7 Chemical feeders
- 2.8 Sedimentation, clarifiers
- 2.9 Filtration
- 2.10 Iron and manganese removal
- 2.11 Hardness removal
- 2.12 Chlorination
- 2.13 Flouridation
- 2.14 Turbidity and odour control
- 2.15 Removal of dissolved salts
- 2.16 Corrosion control and stabilization

WATER RESOURCES
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WATER SUPPLIES & TREATMENT

COURSE OUTLINE:

3. Operation of water treatment, plant and distribution
 - 3.1 Groundwater treatment plant
 - 3.2 River water treatment plant
 - 3.3 Water quality control
 - 3.4 Water distribution maintenance and surveillance
 - 3.5 Water rates

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