

Revised  
July 1985

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

COURSE OUTLINE

Course Title: CHEMISTRY *IV*  
Code No.: CHM 225-3  
Program: GEOLOGICAL ENGINEERING TECHNICIAN  
Semester: THREE  
Date: MAY 30, 1984  
Author: J. S. KORREY

New: \_\_\_\_\_ Revision: X

APPROVED: \_\_\_\_\_  
Chairperson Date

CHEMISTRY

CHM 225-3

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Course Name

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Course Number

GEOLOGICAL ENGINEERING TECHNICIANS

PHILOSOPHY/GOALS:

Since this course is a continuation of CHM 108-3, students entering this program must have successfully completed CHM 108. The course is strictly theoretical and deals with such topics as oxidation-reduction reactions, measurement of oxidation potentials, introduction to organic hydrocarbons related to coal, oil and gas production, molecular polarity, solubility and geometry, and finally a brief introduction to analytical instrumentation, particularly A.A., G.C., optical techniques, and fire essays. CHM 108 and CHM 225 are designed to prepare the student for more intensive work in Geochemistry.

METHOD OF ASSESSMENT (GRADING METHOD):

A = 80 - 100%

B = 70 - 79%

C = 60 - 69%

I = 59 or less

TEXTBOOK(S):

Malone, Leo J., "Basics Concepts in Chemistry",  
John Wiley & Sons, N.Y.

COURSE OUTLINE

CHM 225-3

(Theory Course)

TOPIC NO.	PERIODS	TOPIC DESCRIPTION
1	5	<p><u>The Nature of Water and Aqueous Solutions:</u></p> <ul style="list-style-type: none"> <li>- Review - Atomic Radii, bond length, bond energy</li> <li>- Ionic equations and double displacement reactions (review - 5 types)</li> <li>- Solubility of ionic components</li> <li>- Stoichiometry of solutions</li> </ul>
2	8	<p><u>Oxidation-Reduction</u></p> <ul style="list-style-type: none"> <li>- The nature of oxidation-reduction</li> <li>- Balancing redox equations</li> <li>- Spontaneous redox equations</li> <li>- Voltaic cells</li> <li>- Acids discussed re: Ox-reduction</li> </ul>
3	10	<p><u>Organic Chemistry</u></p> <ul style="list-style-type: none"> <li>- Chemical bonding of carbon</li> <li>- Molecular geometry hybrid orbitals</li> <li>- Polarity and solubility</li> <li>- Properties of organic vs. inorganic</li> <li>- Hydrocarbons found in oil and natural gas</li> </ul>
4	7	<p><u>Introduction to Analytical Instrumentation</u></p> <ul style="list-style-type: none"> <li>- Atomic absorption spectrophotometer</li> <li>- Optical methods</li> <li>- Gas chromatography</li> <li>- Fire Assays</li> </ul>