

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

COURSE OUTLINE

Course Title: CHEMISTRY *II*
Code No.: CHM ²²⁵215-3 *2 in book as 225*
Program: GEOLOGICAL ENGINEERING TECHNICIAN
Semester: THREE
Date: MAY 30, 1983
Author: J. S. KORREY

New: _____ Revision: X

APPROVED: _____
Chairperson Date

CALENDAR DESCRIPTION

CHEMISTRY
Course Name

CHM 215-3
Course Number

GEOLOGICAL ENGINEERING TECHNICIANS

PHILOSOPHY/GOALS:

Since this course is a continuation of CHM 104-3, students entering this program must have successfully completed CHM 104. 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 assays. CHM 104 and CHM 215 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., "Basic Concepts in Chemistry"
John Wiley & Sons, N.Y.

COURSE OUTLINE
CHM 215-3
(A Theory Course)

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