

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

COURSE OUTLINE

Course Title: ORGANIC CHEMISTRY  
Code No.: CHM 235-3  
Program: PULP & PAPER TECHNOLOGY  
Semester: 3  
Date: SEPTEMBER, 1983  
Author: D. TROWBRIDGE

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

APPROVED:

  
Chairperson

  
Date

CALENDAR DESCRIPTION

ORGANIC CHEMISTRY  
Course Name

CHM 235-3  
Course Number

PHILOSOPHY GOALS:

This course is intended to give an introduction to the subject of organic chemistry. Upon successful completion, the student should be able to identify the name of organic compounds as well as predict likely reactions between these compounds. Emphasis will be placed on organic chemistry as it relates to the pulp and paper industry.

METHOD OF ASSESSMENT:

Periodic tests throughout the course will be included with assignments and quizzes to establish the overall grade for the course.

TEXTBOOK(S):

Organic Chemistry: An Introduction  
by Jack E. Fernandez.

ORGANIC CHEMISTRY

CHM 235-3

<u>TOPIC</u>	<u>PERIODS</u>	<u>TOPIC DESCRIPTION</u>
1	6	<u>Principles of Bonding</u> <ul style="list-style-type: none"><li>- covalent and ionic bonding</li><li>- electronegativity and formal charge</li><li>- hydrogen bonding (including cellulose)</li><li>- bond strength and hybridization</li></ul>
2	6	<u>Principles of Structure</u> <ul style="list-style-type: none"><li>- structural formula</li><li>- molecular models</li><li>- isomerism and resonance</li><li>- functional groups</li></ul>
3	5	<u>Principles of Reactivity</u> <ul style="list-style-type: none"><li>- acid-base theories</li><li>- dissociation constants</li><li>- equilibrium and reaction rates</li><li>- catalysts, intermediates and free radicals</li></ul>
4	5	<u>Alkanes and Alkenes</u> <ul style="list-style-type: none"><li>- structure and nomenclature</li><li>- physical properties</li><li>- synthesis and reactions</li></ul>
5	2	<u>Dienes and Alkynes</u> <ul style="list-style-type: none"><li>- classification and nomenclature</li><li>- tautomers</li></ul>
6	5	<u>Aromatic Hydrocarbons</u> <ul style="list-style-type: none"><li>- benzene and its derivatives</li><li>- structural properties</li><li>- reactions with benzene</li></ul>
7	4	<u>Alcohols, Phenols and Thiols</u> <ul style="list-style-type: none"><li>- classification, structure and nomenclature</li><li>- examples in the pulp and paper industry</li><li>- oxidation of alcohols</li></ul>

<u>TOPIC</u>	<u>PERIODS</u>	<u>TOPIC DESCRIPTION</u>
8	4	<u>Aldehydes, Ketones and Acids</u> - structure and nomenclature - physical properties - oxidation of aldehydes
9	4	<u>Ethers and Epoxides</u> - structure and nomenclature - lignin and cellulose ethers
10	4	<u>Polymers</u> - macromolecule formation - cellulose and hemicellulose structure and properties
Testing	$\frac{3}{48}$	