

SAULT COLLEGE OF APPLIED ARTS AND TECHNOLOGY

SAULT STE. MARIE, ONTARIO



COURSE OUTLINE

COURSE TITLE: Chemistry

CODE NO. : CHM094 **SEMESTER:** ongoing

PROGRAM: Academic Upgrading

AUTHOR: Doug Cressman

DATE: January, 2010 **PREVIOUS OUTLINE DATED:** n/a

APPROVED:

_____	_____
CHAIR	DATE

TOTAL CREDITS:

PREREQUISITE(S): General Science, or permission of instructor

HOURS/WEEK: 5

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For additional information, please contact Penny Perrier, Chair
School of Business, Hospitality and Continuing Education
(705) 759-2554, Ext. 2754

I. COURSE DESCRIPTION:

This course will utilize students' previous exposure to science, and build on that foundation through the expansion of various topics dealing with chemistry. In an introductory manner, the learner will be introduced to many aspects of chemistry, from defining chemistry to understanding topics such as matter; chemical reactions; bonding, gases, liquids, solids, and acids and bases. Threaded throughout the course is a discussion of chemistry in the environment. The course is divided into three compulsory core topics, and one of two electives.

This curriculum is preparatory for continuation in a post secondary college educational stream and career path.

II. LEARNING OUTCOMES AND ELEMENTS OF THE PERFORMANCE:

Upon successful completion of this course, the student will demonstrate the ability to understand and to utilize appropriate terminology related to:

1. Measurement and Calculation
Potential Elements of the Performance:
 - Write in scientific notation
 - Calculate measurements of length, volume and mass
 - Use significant figures
 - Convert between various systems of temperature calculation
2. Properties of Matter
Potential Elements of the Performance:
 - Define various states of matter
 - Identify characteristics of matter as gases, solids, liquids, and in solution
 - Name basic sub-atomic particles and list their properties
 - Naming compounds
3. Chemical Reactions
Potential Elements of the Performance:
 - Calculation of empirical and molecular formulas
 - Predict whether a chemical reaction will occur
 - Measure energy changes
 - Identify types of chemical reaction
 - Write a balanced equation
 - Define the mole concept
 - Describe modern atomic theory
 - Describe ionic and covalent bonds and explain how they are formed

4. Electrochemistry (elective)
Potential Elements of the Performance:
 - Name the components of galvanic and electrolytic cells and describe their roles in terms of oxidation and reduction
 - Explain the chemical reactions involved in corrosion
 - Relate the chemistry of corrosion to the chemical reactions in an electrochemical cell
 - Describe various techniques used to prevent corrosion of metals
5. Organic Chemistry (elective)
Potential Elements of the Performance:
 - Describe characteristics of the carbon atom in terms of bonding and the formation of long chain molecules
 - Explain the general properties of molecules containing oxygen or nitrogen
 - Identify the structure of alkanes, alkenes, alcohols, etc.
 - Represent covalent bonding in organic compounds
 - Use structural formulas to describe organic reactions

III. TOPICS:

1. Measurement and Calculation
2. Properties of Matter
3. Chemical Reactions
4. Electrochemistry
5. Organic Chemistry
6. Chemistry in the Environment

IV. REQUIRED RESOURCES/TEXTS/MATERIALS:

Zumdahl, DeCoste. Introductory Chemistry: A Foundation. Brooks/Cole. 2008

V. EVALUATION PROCESS/GRADING SYSTEM:

Upon the completion of each unit, students will be required to pass a unit test. A passing grade is 70%. There is no final exam.

The following semester grades will be assigned to students:

Grade	<u>Definition</u>
A+	90 – 100%
A	80 – 89%
B	70 - 79%

F (Fail)	69% and below
NR	Grade not reported to Registrar's office.
W	Student has withdrawn from the course without academic penalty.

VI. SPECIAL NOTES:

Course Outline Amendments:

The professor reserves the right to change the information contained in this course outline depending on the needs of the learner and the availability of resources.

Retention of Course Outlines:

It is the responsibility of the student to retain all course outlines for possible future use in acquiring advanced standing at other postsecondary institutions.

Disability Services:

If you are a student with a disability (e.g. physical limitations, visual impairments, hearing impairments, or learning disabilities), you are encouraged to discuss required accommodations with your professor and/or the Disability Services office. Visit Room E1101 or call Extension 2703 so that support services can be arranged for you.

Communication:

The College considers **WebCT/LMS** as the primary channel of communication for each course. Regularly checking this software platform is critical as it will keep you directly connected with faculty and current course information. Success in this course may be directly related to your willingness to take advantage of the **Learning Management System** communication tool.

Student Portal:

The Sault College portal allows you to view all your student information in one place. **mysaultcollege** gives you personalized access to online resources seven days a week from your home or school computer. Single log-in access allows you to see your personal and financial information, timetable, grades, records of achievement, unofficial transcript, and outstanding obligations. Announcements, news, the academic calendar of events, class cancellations, your learning management system (LMS), and much more are also accessible through the student portal. Go to <https://my.saultcollege.ca>.

Attendance:

Sault College is committed to student success. There is a direct correlation between academic performance and class attendance; therefore, for the benefit of all its constituents, all students are encouraged to attend all of their scheduled learning and evaluation sessions. This implies arriving on time and remaining for the duration of the scheduled session. *<Optional: It is the departmental policy that once the classroom door has been closed, the learning process has begun. Late arrivers will not be granted admission to the room.>*