



SCH4U – Grade 12 Chemistry Course Profile & Evaluation

Senior High

Course Description/Rationale/Overview

This course enables students to deepen their understanding of chemistry through the study of organic chemistry, the structure and properties of matter, energy changes and rates of reaction, equilibrium in chemical systems, and electrochemistry. Students will further develop their problem-solving and investigation skills as they investigate chemical processes, and will refine their ability to communicate scientific information. Emphasis will be placed on the importance of chemistry in everyday life and on evaluating the impact of chemical technology on the environment.

Prerequisite: Chemistry, Grade 11, University Preparation

Class Requirements

Student Responsibility

Students must seek assistance from the teacher and fellow students for all work missed due to meeting online requirements and must make arrangements to complete missed work.

Online/Offline Responsibility

Students are responsible for completing all online and offline work assigned through the Moodle.

Course Requirements/Department Policies

Late Assignments

Late assignments must be accompanied with a note signed by a parent or guardian stating the reason for tardiness of the assignment. The note must list the due date of the assignment and the actual date of submission.

If an assignment is handed in after it has been taken up/handed back, the student may not receive a mark for it.

Missed Tests

It is the student's responsibility to make arrangements, ahead of time, for any tests/quizzes that are missed. If a student misses a test/quiz for an unforeseen reason such as illness, the student must bring a note signed by a parent or guardian and be prepared to write the test/quiz immediately upon return to school.

Evaluation

Assignments, projects, quizzes, tests and final examination

Curriculum Strands

1. Structure and Properties of Matter
2. Organic Chemistry
3. Energy Changes and Rates of Reaction
4. Chemical Systems and Equilibrium
5. Electrochemistry (ISU)

Achievement Categories

- Knowledge & Understanding 20%
- Thinking & Inquiry 20%
- Communication 15%
- Application 15%

Learning Skills

- Initiative
- Work Habits/Homework
- Organization
- Works Independently
- Teamwork

Evaluation

| | |
|--------------------------|----------------------|
| Assignments and Projects | 35 % (approximately) |
| Quizzes and Tests | 35 % (approximately) |
| Final Evaluation | 30 % |

FINAL MARK

| | |
|---------------------------------|-----|
| Term Work: | 70% |
| Independent Study Project (ISP) | 10% |
| Summative Evaluation | 20% |

Resources

Textbook

Chemistry 12. Nelson (2003)

Supplementary Teaching Materials

Worksheets organized by teacher and other online resources.



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Course Profile & Evaluation

Course Outline

1. Structure and Properties of Matter

By the end of this course, students will:

1. assess the benefits to society and evaluate the environmental impact of products and technologies that apply principles related to the structure and properties of matter;
2. investigate the molecular shapes and physical properties of various types of matter;
3. demonstrate an understanding of atomic structure and chemical bonding, and how they relate to the physical properties of ionic, molecular, covalent network, and metallic substances.

2. Organic Chemistry

By the end of this course, students will:

1. assess the social and environmental impact of organic compounds used in everyday life, and propose a course of action to reduce the use of compounds that are harmful to human health and the environment;
2. investigate organic compounds and organic chemical reactions, and use various methods to represent the compounds;
3. demonstrate an understanding of the structure, properties, and chemical behaviour of compounds within each class of organic compounds.

3. Energy Changes and Rates of Reaction

By the end of this course, students will:

1. analyze technologies and chemical processes that are based on energy changes, and evaluate them in terms of their efficiency and their effects on the environment;
2. investigate and analyze energy changes and rates of reaction in physical and chemical processes, and solve related problems;
3. demonstrate an understanding of energy changes and rates of reaction.

4. Chemical Systems and Equilibrium

By the end of this course, students will:

1. analyze chemical equilibrium processes, and assess their impact on biological, biochemical, and technological systems;
2. investigate the qualitative and quantitative nature of chemical systems at equilibrium, and solve related problems;
3. demonstrate an understanding of the concept of dynamic equilibrium and the variables that cause shifts in the equilibrium of chemical systems.

5. Electrochemistry (ISU)

By the end of this course, students will:

1. analyze technologies and processes relating to electrochemistry, and their implications for society, health and safety, and the environment;
2. investigate oxidation-reduction reactions using a galvanic cell, and analyze electrochemical reactions in qualitative and quantitative terms;
3. demonstrate an understanding of the principles of oxidation-reduction reactions and the many practical applications of electrochemistry.