

Canterbury High School

Ottawa-Carleton District School Board

Science Department

Semester I – 2010 / 11– Course Outline

Course Title: Grade 11 Chemistry, academic

Course Code: SCH3U

Prerequisite: SNC2D

Grade Level: 11

Credit Value: 1.0

Teachers: Mr. Burgess, Mr. Smith, Mrs. Tomlinson

Course Overview: 110 hours

This course focuses on the concepts and theories that form the basis of modern chemistry. Students will study the behaviours of solids, liquids, gases, and solutions; investigate changes and relationships in chemical systems; and explore how chemistry is used in developing new products and processes that affect our lives and our environment. Emphasis will also be placed on the importance of chemistry in other branches of science.

Strands:

- Bonding
- Reactions
- Solutions
- Gases

Course Expectations

Matter and Chemical Bonding (Unit One)

By the end of this course, students will:

- demonstrate an understanding of the relationship between periodic tendencies, types of chemical bonding, and the properties of ionic and molecular compounds;
- carry out laboratory studies of chemical reactions, analyse chemical reactions in terms of the type of reaction and the reactivity of starting materials, and use appropriate symbols and formulae to represent the structure and bonding of chemical substances;
- describe how an understanding of matter and its properties can lead to the production of useful substances and new technologies.

Quantities in Chemical Reactions (Unit Two)

By the end of this course, students will:

- demonstrate an understanding of the mole concept and its significance in the analysis of chemical systems;
- carry out experiments and complete calculations based on quantitative relationships in balanced chemical reactions;
- demonstrate an awareness of the importance of quantitative chemical relationships in the home or in industry.

Solutions and Solubility (Unit Three)

By the end of this course, students will:

- demonstrate an understanding of the properties of solutions, the concept of concentration, and the importance of water as a solvent;
- carry out experiments and other laboratory procedures involving solutions, and solve quantitative problems involving solutions;
- relate a scientific knowledge of solutions and solubility to everyday applications, and explain how environmental water quality depends on the concentrations of a variety of dissolved substances.

Gases and Atmospheric Chemistry (Unit Four)

By the end of this course, students will:

- demonstrate an understanding of the laws that govern the behaviour of gases;
- investigate through experimentation the relationships among the pressure, volume, and temperature of a gas, and solve problems involving quantity of substance in moles, molar masses and volumes, and the gas laws;
- describe how knowledge of gases has helped to advance technology, and how such technological advances have led to a better understanding of environmental phenomena and issues.

Units of Study

In chemistry, each strand covered will be a unit of study. The units of study are:

Matter and Chemical Bonding
Quantities in Chemical Reactions
Solutions and Solubility
Gas and Atmospheric Chemistry

See above section for more details.

Teaching Strategies

teacher demonstrations
laboratory experiments
multimedia
investigative research

small group work
student-teacher conferencing
written assignments
hands-on activities

Assessment and Evaluation Strategies

written tests
lab reports
observation (formal and informal)
homework checks and quizzes
summative assignment

rubrics
group presentations
discussion
research projects
exam

Evaluation Summary

Knowledge and Understanding	25 %
Thinking, Inquiry & Problem Solving	25 %
Communication	10 %
Making Connections	10 %
Summative Evaluation	10 %
Final Examination	20 %

Please refer to the achievement chart for science in the ministry curriculum documents for more information.

References

www.edu.gov.on.ca/eng/curriculum/secondary/science910curr.pdf

Student Resources / Texts

Chemistry 11, McGraw-Hill Ryerson, replacement cost \$99.21 + tax and shipping.