

Colonel By Secondary School
Ottawa-Carleton District School Board
Science Department



Course Title: IB Chemistry

Course Code: SCH 3UE

Grade Level: 11

Teacher:

Course Overview:

This course enables students to deepen their understanding of chemistry through the study of the properties of chemicals and chemical bonds; chemical reactions and quantitative relationships in those reactions; solutions and solubility; and atmospheric chemistry and the behaviour of gases. Students will further develop their analytical skills and investigate the qualitative and quantitative properties of matter, as well as the impact of some common chemical reactions on society and the environment.

Curriculum: Students will be evaluated using the major strands and overall expectations summarized below.

By the end of the course students will:

A. Scientific Investigation Skills and Career Exploration

1. demonstrate scientific investigation skills (related to both inquiry and research) in the four areas of skills (initiating and planning, performing and recording, analysing and interpreting, and communicating);
2. identify and describe careers related to the fields of science under study, and describe the contributions of scientists, including Canadians, to those fields

B. Matter, Chemical Trends, and Chemical Bonding

1. analyse the properties of commonly used chemical substances and their effects on human health and the environment, and propose ways to lessen their impact;
2. investigate physical and chemical properties of elements and compounds, and use various methods to visually represent them;
3. demonstrate an understanding of periodic trends in the periodic table and how elements combine to form chemical bonds

C. Chemical Reactions

1. analyse chemical reactions used in a variety of applications, and assess their impact on society and the environment;
2. investigate different types of chemical reactions;
3. demonstrate an understanding of the different types of chemical reactions.

D. Quantities in Chemical Reactions

1. analyse processes in the home, the workplace, and the environmental sector that use chemical quantities and calculations, and assess the importance of quantitative accuracy in industrial chemical processes;
2. investigate quantitative relationships in chemical reactions, and solve related problems;
3. demonstrate an understanding of the mole concept and its significance to the quantitative analysis of chemical reactions.

E. Solutions and Solubility

1. analyse the origins and effects of water pollution, and a variety of economic, social, and environmental issues related to drinking water;
2. investigate qualitative and quantitative properties of solutions, and solve related problems;
3. demonstrate an understanding of qualitative and quantitative properties of solutions.

F. Gases and Atmospheric Chemistry

1. analyse the cumulative effects of human activities and technologies on air quality, and describe some Canadian initiatives to reduce air pollution, including ways to reduce their own carbon footprint;
2. investigate gas laws that explain the behaviour of gases, and solve related problems;
3. demonstrate an understanding of the laws that explain the behaviour of gases.

Prerequisite: SNC2DE

Text: Chemistry – Green & Damji, IBID – Replacement Cost = \$100

HL Chemistry – Brown & Ford, Pearson electronic edition

Core IB Topics

11. Measurement and data processing

1. Stoichiometric relationships

2. The Atom

3. Periodicity

4. Chemical bonding and structure

8. Acids, Bases, and Solution Chemistry

10. Organic chemistry

HL Topics

12. The Atom

14. Chemical bonding and structure

13. Transition Metal Chemistry

20. Organic chemistry

21. Measurement and analysis

EVALUATION

Assessment and Evaluation will be based on the provincial curriculum expectations. Level 3 represents the provincial standard for achievement of the expectations (70-79%). Level 1 identifies achievement that falls much below the provincial standard while still reflecting a passing grade (50-59%). Level 2 identifies achievement that approaches the standard (60- 69%). Level 4 identifies achievement that surpasses the standard (80-100%).

The weighting of the final mark is as follows:

COURSE WORK

Tests, investigations, assignments

70%

FINAL EVALUATION

Summative, Exam

30%