

**CHEMISTRY 11**

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**SCHEDULE:** Monday/Thursday 5:00pm-9:00pm  
**LEARNING CENTRE HOURS:** Monday-Thursday 10:00am-2:00pm  
 Tuesday-Thursday 5:00pm-9:00pm  
 The Learning Centre is closed all statutory and school holidays.

**INTRODUCTION**

Chemistry is the science which deals with the properties and reactions of materials. It is concerned with the identification, characterization, and transformation of matter, and with the energy changes accompanying these transformations. Chemical science focuses on the structure and interaction of matter at the atomic and molecular levels. In common with other scientific disciplines, chemistry is both a body of knowledge (facts, concepts, laws, theories) and a process for obtaining this knowledge. Furthermore, a core of fundamental chemical knowledge is central to an understanding of other science disciplines and applied sciences (e.g. biology, geology, physics, medicine, pharmacy).

**PRESCRIBED LEARNING OUTCOMES****The Nature of Matter**

- B1 *relate the observable properties and characteristics of elements, compounds, and mixtures to the concept of atoms and molecules*
- B2 *write the names and formulae for ionic and covalent compounds, given appropriate charts or data tables*
- B3 *describe the characteristics of matter*
- B4 *differentiate between physical and chemical changes*
- B5 *select an appropriate way of separating the components of a mixture*

**Mole Concept**

- C1 *explain the significance and use of the mole*
- C2 *perform calculations involving the mole*
- C3 *determine relationships between molar quantities of gases at STP*
- C4 *perform calculations involving molecular and empirical formulae to identify a substance*
- C5 *describe concentration in terms of molarity*
- C6 *perform calculations involving molarity*

**Solution Chemistry**

- F1 *distinguish between a solution and a pure substance*
- F2 *predict the relative solubility of a solute in a solvent, based on its polarity*
- F3 *relate ion formation to electrical conductivity in aqueous solutions*
- F4 *calculate the concentration of ions in solution*

**Chemical Reactions**

- D1 *explain chemical reactions in terms of the rearrangement of the atoms as bonds are broken and new bonds are formed*
- D2 *apply the law of conservation of mass to balance formula equations*
- D3 *devise balance equations for various chemical reactions*
- D4 *describe reactions in terms of energy changes*
- D5 *perform stoichiometric calculations involving chemical reactions*

## Atomic Theory

- E1 *describe the development of the model of the atom*
- E2 *describe the sub-atomic structures of atoms, ions, and isotopes, using calculations where appropriate*
- E3 *describe the development of the modern periodic table*
- E4 *draw conclusions about the similarities and trends in the properties of elements, with reference to the periodic table*
- E5 *justify chemical and physical properties in terms of electron population*
- E6 *demonstrate knowledge of various types of chemical bonding*
- E7 *apply understanding of bonding to create formulae and Lewis structures*

## Organic Chemistry

- G1 *describe characteristic features and common applications of organic chemistry*
- G2 *demonstrate knowledge of the various ways that carbon and hydrogen can combine to form a wide range of compounds*
- G3 *generate names and structures for simple organic compounds*
- G4 *differentiate the various types of bonding between carbon atoms*
- G5 *identify common functional groups*

## LEARNING RESOURCES

CHEMISTRY 11 – A Workbook for Students (Hebden)

Online lessons, videos, practice questions

## CHEMISTRY 11 at Coquitlam Learning Opportunity Centre

Chemistry 11 at Coquitlam Learning Opportunity Centre is a self-paced, self-directed course. You will be expected to work independently and to manage your time productively. If needed, individual help will be available from an instructor in the Learning Centre. The skills to be mastered in each unit and the corresponding workbook assignments are listed in each unit Outline. Each unit consists of lessons, videos and practice exercises to facilitate skill mastery. An important element for success in Chemistry 11 will be your study skills. Successful students establish a study schedule and stick to it.

## EVALUATION

Evaluation in Chemistry 11 will include unit tests, a midterm exam, and a final exam. ONE REWRITE will be available for each unit test. There is NO REWRITE for the midterm exam or the final exam. The tests will be weighted as follows:

<u>TEST</u>	<u>CONTENT</u>	<u>PERCENT</u>
<b>Unit 1</b>	Activities of Science Finding Out About Matter	<b>5</b>
<b>Unit 2</b>	Unit Conversions Naming and Formulas	<b>5</b>
<b>Unit 3</b>	The Mole Solutions	<b>15</b>
<b>Unit 4</b>	Chemical Reactions Calculations Involving Reactions	<b>15</b>
<b>MIDTERM</b>	Units 1–4	<b>15</b>
<b>Unit 5</b>	Atoms, molecules and the Periodic Table	<b>10</b>
<b>Unit 6</b>	Organic Chemistry	<b>10</b>
<b>FINAL</b>	Units 1–6	<b>25</b>
		<hr/> <b>100</b>