

Curriculum Standard for Chemistry

1. Foreword

Chemistry is an important subject in independent Chinese secondary schools science stream senior classes. Senior level Chemistry not only links junior science as a subject but also connects tertiary level Chemistry as a discipline. Therefore, the pedagogical approach of secondary Chemistry stresses on the provision of systematic and solid theories on Chemistry on one hand, and the application of Chemistry in daily agriculture and modern technology on the other.

Time Allocation

Senior level Chemistry (inclusive of theories and experiments) is designed to be completed within three years. For Senior One, there are five periods on a weekly basis; for Senior Two and Three, four periods weekly are allocated; each period carries forty minutes.

2. Curriculum Objectives

1. To stress on basic knowledge and skills for Chemistry thus to further help the students master basic Chemical calculation;
2. To develop fundamental Chemistry concept through the study of the changes of matter and energy inclusive of Chemistry experiments, thus to nurture the right and correct scientific attitude and problem solving competence and lay the foundation for the learning and study of professional Chemistry know-hows;
3. To understand the position and relationship between Natural Chemistry and Applied Chemistry thus to apply the knowledge to improve the environment; and
4. To realise the relationship between Chemistry and human life as well as societal development thus to adapt the knowledge to refine the environment

3. Curriculum Structure

Senior Level

The curriculum is divided into two sections, namely, theories and experiments.

1. The components of Theories include fundamentals of Chemistry, Physical Chemistry, Inorganic Chemistry and Organic Chemistry.
2. The components of Experiments comprise basic theoretical experiments, Volumetric Analysis, Qualitative Analysis, Element and their compounds and Organic Chemistry, etc.

Contents

Volume One

Chapter	Section	Content	Remarks
1. Preface	1.1	Introduction to Chemistry	-Classification of chemical field
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	1.3	Chemistry and Life	-Food additives -Chemist's corporate social responsibility

			-Future development of Chemistry
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	3.3	Atom and Atomic Mass 3.3.1 Atomic Composition 3.3.2 Relative Atomic Mass	-Determine Atomic Mass by using Mass Spectrometer (included in reading materials)
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	6.2	Structure of Periodic Table	
	6.3	Interpretation of Periodic Table 6.3.1 The Periodic Law of Elements 6.3.2 The Electron Shell Structure of An Atom and the Partitioning of Elements 6.3.3 Basic Property of Elements' Periodical Variation	-Changes of Atomic Radius and Ionic Radius -Changes of First Ionization Energy -Changes of Electronegativity -Gradation of Metallic and Non-metallic Property of Elements
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	7.2	Covalent Bond	-Lewis Electron Dot Diagram

		7.2.1 The Formation of Covalent Bond	-Differences between Ionic Bond and Covalent Bond (included in Teacher Handbook) -Differences between Polar and Non-polar Covalent Bond (included in Teacher Handbook)
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Volume 3

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