

Course: CHEMISTRY

2 units for each of Preliminary and HSC Board Developed Course



Exclusions: Nil

Course Description:

The *Chemistry Stage 6 Syllabus* explores the structure, composition and reactions of and between all elements, compounds and mixtures that exist in the Universe. The discovery and synthesis of new compounds, the monitoring of elements and compounds in the environment, and an understanding of industrial processes and their applications to life processes are central to human progress and our ability to develop future industries and sustainability.

The course further develops an understanding of chemistry through the application of Working Scientifically skills. It focuses on the exploration of models, understanding of theories and laws, and examination of the interconnectedness between seemingly dissimilar phenomena.

Chemistry involves using differing scales, specialised representations, explanations, predictions and creativity, especially in the development and pursuit of new materials. It requires students to use their imagination to visualise the dynamic, minuscule world of atoms in order to gain a better understanding of how chemicals interact.

The Chemistry course builds on students' knowledge and skills developed in the Science Stage 5 course and increases their understanding of chemistry as a foundation for undertaking investigations in a wide range of Science, Technology, Engineering and Mathematics (STEM) related fields. A knowledge and understanding of chemistry is often the unifying link between interdisciplinary studies.

The course provides the foundation knowledge and skills required to study chemistry after completing school, and supports participation in a range of careers in chemistry and related interdisciplinary industries. It is an essential discipline that currently addresses and will continue to address our energy needs and uses, the development of new materials, and sustainability issues as they arise.

Chemistry provides students with a contemporary understanding of the physical and chemical properties of substances and their interactions. Chemistry attempts to provide chemical explanations and to predict events at the atomic and molecular level.

Students investigate natural and made substances, their structures, changes and environmental importance; they learn about the history and philosophy of science as it relates to Chemistry; students work individually and with others in practical, field and interactive media experiences related to chemistry; they undertake experiments and decide between competing theories. They assess the impact of decisions based on an understanding of chemistry on society.

The course builds on the foundations laid in Stage 5 Science, and recognises the fact that students bring a wide range of abilities, circumstances and expectations to the course.

Preliminary Course

		Modules	Indicative hours	Depth studies
Year 11 course (120 hours)	Working Scientifically Skills	Module 1 Properties and Structure of Matter	60	*15 hours in Modules 1–4
		Module 2 Introduction to Quantitative Chemistry		
		Module 3 Reactive Chemistry	60	
		Module 4 Drivers of Reactions		

HSC Course

		Modules	Indicative hours	Depth studies
Year 12 course (120 hours)	Working Scientifically Skills	Module 5 Equilibrium and Acid Reactions	60	*15 hours in Modules 5–8
		Module 6 Acid/base Reactions		
		Module 7 Organic Chemistry	60	
		Module 8 Applying Chemical Ideas		