

Integrated Science General

Year 11 Course Code	GEISC
Year 12 Course Code	GTISC
Highly Recommended	Year 11: C grade in Year 10 Science
Cost	\$60.00 (cost is approximate – subject to change)

Year 11 and Year 12 Overview

This course enables students to investigate science issues in the context of the world around them. It encourages students to develop their scientific skills of curiosity, observation, collection and analysis of evidence, in a range of contexts. The multidisciplinary approach, including aspects of biology, chemistry, geology and physics, further encourages students to be curious about the world around them and assume a balanced view of the benefits and challenges presented by science and technology. Students conduct practical investigations that encourage them to apply what they have learnt in class to real-world situations and systems.

Year 11 Course Structure

Unit 1 - In this unit, students develop an understanding of the processes involved in the functioning of systems from the macro level (cycles in nature and Earth systems) to systems at the organism, cellular and molecular level. They investigate and describe the effect of human activity on the functioning of cycles in nature. By integrating their understanding of Earth and biological systems, students come to recognise the interdependence of these systems.

Students investigate structure and function of cells, organs and organisms, and the interrelationship between the biological community and the physical environment. They use a variety of practical activities to investigate patterns in relationships between organisms.

Unit 2 - In this unit, students develop an understanding of the processes involved in the transformations and redistributions of matter and energy in biological, chemical and physical systems, from the atomic to the macro level. Students will investigate the properties of elements, compounds and mixtures, and how substances interact with each other in chemical reactions to produce new substances. They explore the concepts of forces, energy and motion and recognise how an increased understanding of scientific concepts has led to the development of useful technologies and systems.

Year 12 Course Structure

Unit 3 - In this unit, students integrate ideas relating to the processes involved in the movement of energy and matter in ecosystems. They investigate and describe a number of diverse ecosystems, exploring the range of living and non-living components, to understand the dynamics, diversity and interrelationships of these systems.

They investigate ecosystem dynamics, including interactions within and between species, and interactions between living and non-living components of ecosystems. They also investigate how measurements of population numbers, species diversity, and descriptions of species interactions, can form the basis for comparisons between ecosystems.

Unit 4 - This unit provides students with the opportunity to conduct scientific investigations that will increase their understanding of important scientific concepts and processes. Students will explore the properties of chemical substances that determine their use, and the techniques involved in separating mixtures and solutions. They will investigate forces acting upon an object and the effects of kinetic, potential and heat energy on objects. Students will discover the way in which increases in the understanding of scientific concepts have led to the development of useful technologies and systems.