

Biology T

This practical course enables students with an interest in Biology to study it at an advanced level. It is appropriate for students intending to pursue careers in areas such as physiology, nursing, para-medical or medical sciences, wildlife biology, zoology, botany, genetics, biochemistry, forestry and natural resources.

Course Patterns

All units are sequential, to achieve a minor students will need to successfully complete:

Unit 1: Biodiversity and Interconnectedness and **Unit 2:** Cells and Multicellular Organisms.

A major will consist of the units above and **Unit 3:** Heredity & Continuity of Life and **Unit 4:** Maintaining the Internal Environment.

Prerequisites

Science to Year 10 is an advantage.

Units

In Biology, students develop their understanding of biological systems, the components of these systems and their interactions, how matter flows and energy is transferred and transformed in these systems, and the ways in which these systems are affected by change at different spatial and temporal scales. There are four units:

Year 11

In Units 1 and 2, students build on prior learning to develop their understanding of relationships between structure and function in a range of biological systems, from ecosystems to single cells and multicellular organisms.

Unit 1: Cells and Multicellular Organisms

Students investigate the interdependent components of the cell system and the multiple interacting systems in multicellular organisms.

Unit 2: Biodiversity and

Interconnectedness: students analyse abiotic and biotic ecosystem components and their interactions, using classification systems for data collection, comparison and evaluation.



Year 12

In Units 3 and 4, students examine the continuity of biological systems and how they change over time in response to external factors. They examine and connect system interactions at the molecular level to system change at the organism and population levels.

Unit 3: Heredity & Continuity of Life

Students investigate mechanisms of heredity and the ways in which inheritance patterns can be explained, modelled and predicted; they connect these patterns to population dynamics and apply the theory of evolution by natural selection in order to examine changes in populations.

Unit 4: Maintaining the Internal Environment

Students investigate system change and continuity in response to changing external conditions and pathogens; they investigate homeostasis and the transmission and impact of infectious disease at cellular and organism levels; and they consider the factors that encourage or reduce the spread of infectious disease at the population level.

More About Biology

Biology is the scientific study of living organisms and their environment. The course will enhance your understanding of the natural world and the place of people and other organisms within it. It includes knowledge and curiosity about human life and health, how humans interact with the natural world and the need to sustain the complex interactions that make possible the diversity of life on Earth.

Developments in technology, including biotechnology, have presented society with the need to make decisions about a range of public issues such as conservation, management of resources, genetic engineering, reproductive technology and medical research. The study of Biology will assist you to make decisions in these controversial areas and help you contribute to informed debate. You will find the study of Biology relevant to your life and its broad base can lead to employment and /or further study.

