

Biology T

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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, paramedical or medical sciences, veterinary science, wildlife biology, zoology, botany, genetics, biochemistry, forestry and national resources.

Course Patterns

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

Unit 1: Cells and Multicellular Organisms, and **Unit 2:** Heredity & Continuity of Life.

A major will consist of the units above and **Unit 3:** Maintaining the Internal Environment, and **Unit 4:** Biodiversity and Interconnectedness.

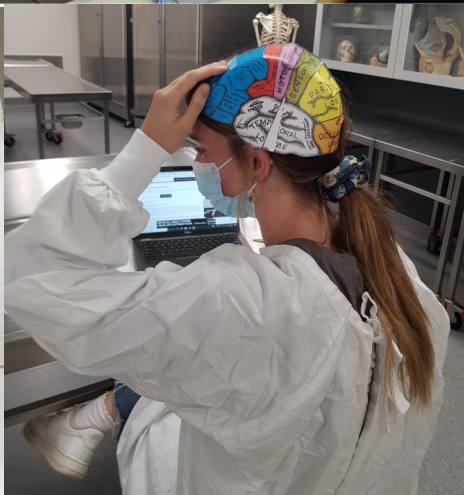
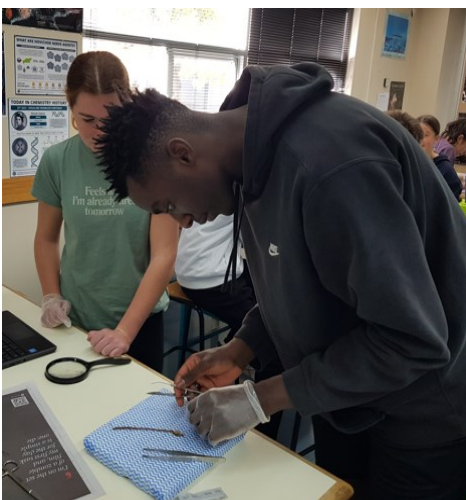
Prerequisites

Science to Year 10 is an advantage.

Study of college maths at a T level is also recommended.

Unit 1: Cells and Organisms

The cell is the basic unit of life. Although cell structure and function are very diverse, all cells possess some common features. Multicellular organisms typically consist of a number of interdependent systems of cells organised into tissues, organs and organ systems. Students examine the structure and function of plant and animal systems at cell and tissue levels in order to describe how they facilitate the efficient provision or removal of materials to and from all cells of the organism.



Unit 2: 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.

Year 12

In Units 3 and 4, students examine homeostasis in the human body and how the body reacts to stressors that affect ho-

meostasis. The final unit studies continuity of biological systems and how they change over time in response to external factors. Students examine and connect system interactions at the molecular level to system change at the organism and population levels.

Unit 3: 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.

Unit 4: Biodiversity and

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

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.



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. Students develop their investigative, analytical and communication skills through field, laboratory and research investigations of living systems and through critical evaluation of the development, ethics, applications and influences of contemporary biological knowledge in a range of contexts. 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 single cells to tissues, organs and multicellular organisms.