

Biology

Subject guide 2004

This subject guide relates to courses developed from the Biology Senior Syllabus 2004.

What is Biology all about?

Biology is the study of the natural systems of the living world. It is characterised by a view of life as a unique phenomenon with fundamental unity. Living processes and systems have many interacting factors that make quantification and prediction difficult. An understanding of these processes and systems requires integration of many branches of knowledge.

The study of Biology provides you with opportunities to:

- gain insight into the scientific manner of investigating problems pertaining to the living world
- experience the processes of science, which lead to the discovery of new knowledge
- develop a deeper understanding and an enhanced aesthetic appreciation of the living world.

The study of Biology will help you to understand the consequences of your personal actions and those of your community and society on the living world. It will enable you to participate as informed and responsible citizens in decision-making processes, the outcomes of which will affect the living world both now and in the future.

What will you learn?

When you study Biology, you will examine the phenomenon of life in all its manifestations. Biology encompasses studies of the origin, development, functioning and evolution of living systems and the consequences of intervention in those systems. Your understandings will be developed in terms of concepts inherent in the principles of biology, which are:

- Survival of species is dependent on individuals staying alive long enough to reproduce.
- At every level of organisation in the living world, structure and function are interrelated. Each level of organisation in the living world has its own unique aspects and there is continual interaction of structure and function between these levels.
- Continuity and change occur at all organisational levels in the living world. Changes may be cyclical or directional. The continuity of life is a balance between all the change processes.

How will you learn?

The course places considerable emphasis upon practical work conducted within a laboratory and in the field. There is a minimum time commitment for fieldwork of ten hours. Fieldwork is integrated with the study of the key concepts to help you better understand biological phenomena. During practical activities you will learn to examine collected data, suggest hypotheses that explain observations, and design and conduct experiments.

How will you be assessed?

The assessment program will include a variety of assessment techniques which are integrated with the learning experiences. The achievement level awarded to each student on exit from the course will be based on the fullest and latest information about student performance on the dimensions outlined in the syllabus.

Assessment in Biology gives you opportunities to demonstrate *Understanding biology*, *Investigating biology*, and *Evaluating biological issues*.

In Biology, assessment instruments include:

- extended response tasks
- written tasks
- extended experimental investigations.

In Year 12, you will be expected to complete a minimum of four and a maximum of six assessment instruments representing at least one and no more than two of the above categories.

How can parents/carers help?

Your parents/carers may help you by:

- discussing different views of current Biology issues with you
- encouraging and helping you find suitable websites, documentaries, journals and other resources
- encouraging you to take part in school-based activities, including field trips, and extracurricular activities
- offering their services as guest speakers if they are involved in this area of study or related industry
- encouraging safe and ethical behaviour
- contacting your school to establish communication with your teachers to help understand the work undertaken at senior level, and to become familiar with assessment requirements.

Where can Biology take you?

This subject contributes four credits towards the Queensland Certificate of Education (QCE). If you would like to learn more about this certificate, please visit the QCE page on the QCAA website www.qcaa.qld.edu.au/589.html.

Understanding of biological concepts, as well as general science knowledge and skills, is relevant to a range of careers, including those in medical, veterinary, food and marine sciences, agriculture, biotechnology, environmental rehabilitation, biosecurity, quarantine, conservation and eco-tourism. This subject will provide a foundation for you to critically consider contemporary biological issues and to make informed decisions about these issues in your everyday life.

For further information about future tertiary pathways, consult the QTAC Guide to Tertiary Courses www.qtac.edu.au.

More information

If you would like more information, please email senior.syllabuses@qcaa.qld.edu.au. You can also visit the QCAA website www.qcaa.qld.edu.au and search for 'Biology'.