



Course Outline (Higher Education)

School:	School of Science, Psychology and Sport
Course Title:	GENERAL SCIENCE: PRINCIPLES OF BIOLOGY
Course ID:	SCBIO1010
Credit Points:	15.00
Prerequisite(s):	SCCHM1001
Co-requisite(s):	Nil
Exclusion(s):	(BIOGC1722) (SCCOR1100)
ASCED:	010999

Description of the Course :

This course provides an introduction to some of the fundamental principles of biology. An understanding of biology underpins the life sciences and this course explores such key elements as cell biology - organelle and tissue structure and function and cellular energetics, plant structure and nutrition, genes, chromosomes and genetic engineering, Mendelian and non-Mendelian rules of inheritance and evolution. This course establishes the fundamental knowledge which is built on in more advanced level courses in the life sciences (biology, ecology, biomedical, food).

Grade Scheme: Graded (HD, D, C, etc.)

Work Experience:

No work experience: Student is not undertaking work experience in industry.

Placement Component: No

Supplementary Assessment: Yes

Where supplementary assessment is available a student must have failed overall in the course but gained a final mark of 45 per cent or above and submitted all major assessment tasks.

Program Level:

Level of course in Program	AQF Level of Program					
	5	6	7	8	9	10
Introductory	■	■	✓	■	■	■
Intermediate	■	■	■	■	■	■
Advanced	■	■	■	■	■	■

Learning Outcomes:

Students undertaking this course are expected to be able to demonstrate the following knowledge and skills.

Knowledge:

- K1.** Identify the major cell constituents and tissues in eukaryotic organisms and their functions.
- K2.** Describe the pathways through which energy is converted to different forms in organisms.
- K3.** Explain the basis of genetic inheritance of traits and the rules governing those processes.
- K4.** Describe independent lines of evidence supporting the theory of evolution.
- K5.** Discuss the processes involved in the evolution by natural selection of traits and species.

Skills:

- S1.** Relate structure and function, determine function of cellular organelles, tissues and processes.
- S2.** Relate biochemical reactions to the physiological processes of living organisms.
- S3.** Demonstrate a conceptual understanding of aspects of genetic inheritance and the chemistry of genetic material.
- S4.** Demonstrate an understanding of the scientific basis of evolutionary theory and how it has shaped living organisms.
- S5.** Demonstrate the benefits of newly acquired study and practical skills.

Application of knowledge and skills:

- A1.** Conduct lab-based studies using standard methods, equipment, technology and approaches in biological science.
- A2.** Observe key biological processes, functions and structures and report observations in standard lab report formats.
- A3.** Use standard biological terms and terminology to describe and report observations.

Course Content:

This course provides an introduction to some of the fundamental principles of biology. The course explores in detail key aspects of biological sciences such as: Cell biology - organelle and tissue structure and function and cellular energetics; Plant structure and nutrition; Genes, chromosomes and genetic engineering; Mendelian and non-Mendelian rules of inheritance; Evidence of evolution; Microevolution in populations; Macroevolution - formation of new species.

Topics may include:

- Cells and cell structure.
- Energy in living systems and the conversion from one form to another.
- Genetics and the rules of inheritance.
- The chemical basis of inheritance.
- Scientific evidence of evolution.
- Micro and macroevolution.

Values:

- V1.** Appreciate that living systems have evolved complex chemical and structural systems.
- V2.** Appreciate the levels of complexity and integration between levels within biological systems.
- V3.** Recognise the differences between a superficial understanding of biology and an in-depth knowledge acquired through study.

Learning Task and Assessment:

Learning Outcomes Assessed	Learning Tasks	Assessment Type	Weighting
K1, K2, S1, S2, S3, S5, A1, A2, A3	Conduct lab-based studies and report on findings in an appropriate format.	Practical reports.	30-50%
K2, S1, S2, A3	Investigation of a key biological process, function, structure or other aspect.	Written report.	10-30%
K1, K2, K3, K4, K5, S1, S2, S3, S4, A3	Demonstration, application and interpretation of knowledge and skills.	Theory exam.	30-50%

Adopted Reference Style:

Other (Australian Harvard)