Undergraduate Certificate of Life Science

The Undergraduate Certificate of Life Science offers a broad introduction to Bioscience topics that examine how the living world around us works. In undertaking this certificate, you have the opportunity to gain introductory knowledge in the biological and chemical concepts that govern life, and the statistical concepts that are used to model these interactions. You will then explore these concepts in lecture and tutorial classes then apply their knowledge and gain the physical skills in practical experiments. This knowledge and complimentary skills are the first step towards you helping solve global issues.

Example Course Plans for Students

The following are example course plans for students studying in the Undergraduate Certificate of Life Science.

Students who complete their Undergraduate Certificate of Life Science will be able to pathway into the 2nd trimester of the Diploma of Bioscience at La Trobe College Australia to complete another 4 core modules over 2 trimesters. The Diploma of Bioscience is a pathway program that leads to second year entry of the listed Bachelor programmes at La Trobe University - students will complete an additional two years in the Bachelor degree after finishing the diploma.

Pathways

- Diploma of Bioscience, then
    - Bachelor of Science
    - Bachelor of Agricultural Sciences
    - Bachelor of Animal and Veterinary Biosciences
    - Bachelor of Biological Sciences

*** WAM requirements apply – please refer to diploma course plans for more details. (WAM is the average mark obtained across all modules, including failed modules)**

Planned Module Availability - Undergraduate Certificate of Life Science

Core Module **– Students must complete the following modules in a single trimester**

Module		**Trimester 1** (Certificate available)	**Trimester 2** (Certificate available)
SCHE1CHF	Chemistry Foundations	✓	✓
SBIO1MGC	Molecules, Genes and Cells	✓	✓
SSTA1LS	Statistics for Life Sciences	✓	✓
HHBS1HBA	Human Biosciences A	✓	✓

Suggested Example Course Study Outlines

Certificate of Life Science	**Fast Track (Completing In 4 months / 1 trimester)**			
	SCHE1CHF (Core)	**SBIO1MGC (Core)**	**HHBS1HBA (Core)**	**SSTA1LS (Core)**
	Chemistry Foundations	Molecules, Genes and Cells	Human Biosciences A	Statistics for Life Sciences

Module Descriptions

Core Modules

All of these modules must be completed to successfully complete the Certificate of Life Science.

SCHE1CHF Chemistry Foundations

Chemistry Foundations chemistry is a foundation module designed for students who have no or little previous experience or study in chemistry. The aim of the module is to instil concepts, knowledge and skills that will enable these students to apply chemical principles and practice during their university degree and future employment. The content of the one trimester module covers topics common to senior high school chemistry and also prepares students to advance to second trimester chemistry.

SBIO1MGC Molecules, Genes and Cells

Living organisms, with their many intricate and intriguing processes, are composed of lifeless molecules. SBIO1MGC takes a look at how those molecules are organised into the smallest unit of life, cells, across a range of organisms. SBIO1MGC also covers how those cells capture light energy, break down molecules to release energy, synthesise new molecules, communicate with other cells, and how the instructions to perform those functions are stored and passed on to the next generation.

SSTA1LS Statistics for Life Sciences

This module provides an introduction to applied statistics and strengthens basic numeracy skills. It introduces students to the basic applied statistical methods used in the biological sciences, medical sciences, agricultural sciences, nutrition, and health sciences. The three main areas of study are descriptive statistics, probability, and statistical inference and the use of a statistical computing package is an integral part of this module. The strengths and limitations of statistical models to enable informed thinking about sustainability are explored. This module is a possible pre-requisite for the second-year modules in statistics.

HHBS1HBA Human Biosciences A

In this subject, students will be introduced to the anatomical organisation of the body and the basics of cell structure and function. The fundamentals of the nervous and endocrine systems will then be explored in the context of mechanisms of physiological control. This information will provide the foundation for the study of the major organ systems of the body which include the respiratory, cardiovascular, renal, digestive, reproductive systems and metabolism.

Underpinning these studies will be the concept of homeostasis and how it is maintained by integration of organ system functions. In addition, students are required to engage in guided, independent learning throughout the semester to extend their level of knowledge in the topic areas described above.