

Diploma of Bioscience

A Diploma of Bioscience provides an introduction to molecular biology, ecology, chemical reactions and analysis and an introduction to statistical modelling required in a general scientific career. The diploma will set you on a path to gain the knowledge to help solve global issues or advise on sustainable methodology and practices. You will learn about the structure, functions and interactions of living organisms from the molecular level upwards and begin to discuss some big issues such as climate change, the protection of endangered animals and cancer treatment. You will also learn about the fundamentals of chemistry within these contexts and how to apply statistical practices in your scientific careers.

Example Course Plans for Students

The following are example course plans for students studying in the Diploma of Bioscience.

Completion of the Diploma of Bioscience requires the completion of 7 core subjects, 1 elective subject and 1 academic integrity module.

Pathways

- Bachelor of Science
- Bachelor of Agricultural Sciences
- Bachelor of Animal and Veterinary Biosciences
- Bachelor of Biological Sciences
- Bachelor of Biomedicine

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

Planned Module Availability - Diploma of Bioscience

Core Module – Students must complete the following modules

Module	Trimester 1	Trimester 2	Trimester 3
SCHE1CHF Chemistry Foundations [†]	✓	✓	✗
SBIO1MGC Molecules, Genes and Cells ^{!!}	✓	✓	✗
SSTA1LS Statistics for Life Sciences	✓	✓	✗
HHBS1HBA Human Biosciences A ^{!!!}	✓	✓	✓ - not recommended in this trimester unless starting in October
SCHE1APL Applications of Chemistry [†]	✗	✓	✓
SBIO1EEB Ecology, Evolution and Biodiversity ^{!!}	✗	✓	✓
SMIC1IPE Infections, Pandemics and Epidemics	✗	✓	✓

Elective Modules – Students should complete one of the following modules

Module	Trimester 1	Trimester 2	Trimester 3
HHBS1HBB Human Biosciences B ^{!!!} <i>Required module for Bachelor of Biomedicine</i>	✓	✓	✓
HHLT1IPP Introduction to Professional Practice	✓	✓	✓
PPSY1CFP Clinical Foundations of Psychological Science	✗	✓	✓

Students are not recommended to undertake elective modules in their first trimester; course progressions run efficiently when these are undertaken in combination with second or third trimester core units.

Required 0 credit point module

All students are required to take and pass LTM1AIM Academic Integrity Module in their first trimester of study. ^{**}

^{**} LTM1AIM does not count towards your study load and is a wholly online module. Completion (prior to week 4) is a requirement to pass your diploma; this module is expected to take about 1 hour.

[†] Note: SCHE1CHF Chemistry Foundations must be successfully completed before students may enrol in SCHE1APL Applications of Chemistry.

^{!!} Note: SBIO1MGC Molecules, Genes and Cells and SBIO1EEB Ecology, Evolution and Biodiversity cannot be undertaken concurrently due to laboratory and workshop restrictions.

^{!!!} Note: HHBS1HBA Human Biosciences A must be successfully completed before students may enrol in HHBS1HBB Human Biosciences B.

Suggested Example Course Study Plans

You should consider your own study habits when selecting between Fast Track and Normal Track. Additional variations may be possible; please review enrolment instructions sent to you when you commence your diploma course.

Fast Track (Completing In 8 months/2 trimesters)					
<i>Commencing Trimester 1, enter University in Semester 1 the following year</i>					
YEAR 1 (DIPLOMA)	COMPULSORY ONLINE MODULE (must be completed in your first trimester of study)				
	LTM1AIM **				
	Academic Integrity Module				
	Trimester 1	SCHE1CHF¹ (Core)	SBIO1MGC^{!!} (Core)	SSTA1LS (Core)	HHBS1HBA^{!!!} (Core)
		Chemistry Foundations	Molecules, Genes and Cells	Statistics for Life Sciences	Human Biosciences A
	Trimester 2	SCHE1APL¹ (Core)	SBIO1EEB^{!!} (Core)	SMIC1IPE (Core)	Elective
	Applications of Chemistry	Ecology, Evolution and Biodiversity	Infections, Pandemics and Epidemics	HHBS1HBB^{!!!} is required for B.Biomed	

OR

Normal Track (Completing course in 12 months/ 3 Trimesters)					
<i>Commencing Trimester 1, enter University in Semester 1 the following year</i>					
YEAR 1 (DIPLOMA)	COMPULSORY ONLINE MODULE (must be completed in your first trimester of study)				
	LTM1AIM **				
	Academic Integrity Module				
	Trimester 1	SCHE1CHF¹ (Core)	HHBS1HBA^{!!!} (Core)	SSTA1LS (Core)	
		Chemistry Foundations	Human Biosciences A	Statistics for Life Sciences	
	Trimester 2	SCHE1APL¹ (Core)	SBIO1MGC^{!!} (Core)	Elective	
		Applications of Chemistry	Molecules, Genes and Cells	HHBS1HBB^{!!!} is required for B.Biomed	
	Trimester 3	SMIC1IPE (Core)	SBIO1EEB^{!!} (Core)		
		Infections, Pandemics and Epidemics	Ecology, Evolution and Biodiversity		

Recommended Electives

Students must complete an additional module from any other diploma course. This may be in their second or third trimester. Suggested modules include one of the following:

- HHBS1HBB^{!!!} Human Biosciences B (*required for students wishing to undertake B.Biomed*)
- HHLT1IPP Introduction to Professional Practice
- PPSY1CFP Clinical Foundations of Psychological Science

When I transfer to La Trobe University I want to study

Bachelor of Science

Complete either of the above study plans, *AND*:

WAM requirement: 50% overall

Campus: Bundoora

Credits: 8 units

English requirement (International students only): Overall IELTS 6.0 (with no individual band score less than 6.0)

Bachelor of Biomedicine

Complete either of the above study plans, *AND*:

WAM requirement: 70% overall

Campus: Bundoora

Credits: 7 units

English requirement (International students only): Overall IELTS 6.5 (with no individual band score less than 6.0)

Elective requirement: Human Biosciences B (HHBS1HBB) !!!

2nd course preference (transfers to this this course may be possible from): Bachelor of Biological Sciences *or* Bachelor of Science (Biochemistry, Microbiology or Genetics major)

Bachelor of Biological Sciences

Complete either of the above study plans, *AND*:

WAM requirement: 50% overall

Campus: Bundoora

Credits: 7 units

English requirement (International students only): Overall IELTS 6.0 (with no individual band score less than 6.0)

Bachelor of Animal and Veterinary Bioscience

Complete either of the above study plans, *AND*:

WAM requirement: 70% overall

Campus: Bundoora

Credits: 7 units

English requirement (International students only): Overall IELTS 6.0 (with no individual band score less than 6.0)

2nd course preference (transfers to this this course may be possible from): Bachelor of Agriculture *or* Bachelor of Science (Zoology or Genetics major)

Bachelor of Agriculture

Complete either of the above study plans, *AND*:

WAM requirement: 50% overall

Campus: Bundoora

Credits: 7 units

English requirement (International students only): Overall IELTS 6.0 (with no individual band score less than 6.0)

Module Descriptions

Core Modules

All of these modules must be completed to successfully complete the Diploma of Bioscience.

LTM1AIM Academic Integrity Module

** LTM1AIM does not count towards your study load and is a wholly online module. Completion (prior to week 4) is a requirement to pass your diploma; this module is expected to take about 1 hour.

Online, zero credit point module, all students must complete this unit in their first trimester. This module introduces students to the principals of academic integrity in the context of La Trobe University's values and policy. Students learn what their responsibilities are in relation to maintaining ethical standards in all aspects of academic work and the potential ramifications for academic misconduct according to the Academic Integrity Policy. Activities and quizzes are provided which are designed to develop and understanding of the concepts of cheating, plagiarism and collusion. Topics include an explaining of how the text-matching tool 'Turnitin' is used at La Trobe, and where to get help and where to go to develop referencing skills.

SCHE1CHF Chemistry Foundations

! SCHE1CHF completion is a prerequisite for SCHE1APL

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

!! SBIO1MGC and SBIO1EEB are incompatible to be undertaken concurrently

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

!!! HHBS1HBA completion is a prerequisite for HHBS1HBB

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.

SCHE1APL Applications of Chemistry

! SCHE1CHF completion is a prerequisite for SCHE1APL

This module aims to provide you with a further foundational concept and the knowledge of the first trimester chemistry units. It fully prepares you to advance to second year studies in chemistry or apply chemistry knowledge and skills within your chosen discipline. This module includes specific applications of chemistry to the manufacture of synthetic materials, identifying and alleviating chemical pollution, and the chemistry of living organisms. Chemistry Foundations is a pre-requisite to study this module.

SBIO1EEB Ecology, Evolution and Biodiversity

!! SBIO1MGC and SBIO1EEB are incompatible to be undertaken concurrently

The evolution of life on earth is a product of the interaction between organisms and the environment. SBIO1EEB will explore the amazing diversity of life from a global and Australian perspective. How population genetics allows evolutionary changes of adaptation over both short and long periods of time will be discussed. SBIO1EEB will also explain ecological forces that determine the distribution of life forms, the flow of energy through ecosystems and the dynamics of natural populations.

SMIC1IPE Infections, Pandemics and Epidemics

Infectious diseases, both new and ancient, continue to threaten wellbeing by causing localised, epidemic or pandemic disease outbreaks. Selected microorganisms will be described and compared: the main focus is the natural habitat of the organisms (reservoirs of infection), the ways in which humans can encounter the organisms (routes of infection) and the strategies available at the individual, community and global levels to prevent disease and, in the diseased patient, to cure disease.

Suggested Elective Modules

One available module from any other diploma offered at LTCA must be completed to successfully complete the Diploma of Bioscience. The recommended modules are below.

HHBS1HBB Human Biosciences B

Students wishing to articulate into Bachelor of Biomedicine must complete Human Biosciences B

!!! HHBS1HBA completion is a prerequisite for HHBS1HBB

This is a basic anatomy module which concentrates on anatomical structures and their function and is a core module within the Health Sciences first year. It has 60 contact hours of teaching and includes both small group and computer-based activities as well as demonstrations of anatomical models. This will be occurring in the workshops as well as the scheduled lectures. In this module the concepts of human structure and function will be applied to a detailed study of the musculoskeletal and nervous systems. Anatomical principles and terminology will be applied to relevant body systems and the concept of integrated function of multiple systems in one body region will be introduced.

HHLT1IPP Introduction to Professional Practice

Introduction to Professional Practice is a module which will introduce you to the health care system; as a consumer participants, as a health and human services practitioner and as part of a health care team.

This module also offers you the opportunity to reflect on your own experiences within the health care system, and to use this to analyse and develop your understanding of health and human services. Group work is an essential component of University studies, and you will explore the nature of group work and team-based assessment, as used across all modules. Concurrent with HHLT1IPP is HHLT1LHS* Learning in Health Sciences, which covers academic skills such as referencing, academic writing and presentations, critical analysis, and academic integrity.

**Note: HHLT1LHS is not compatible with the current Bioscience course structure.*

PPSY1CFP Clinical Foundations of Psychological Science

Advisable for SBIO1MGC and SSTA1LS to be completed prior (PPSY1CFP content builds on and briefly covers some PPSY1EFP content)

In this subject we explore clinical approaches in psychology, which will orient the student to the evidence underpinning the practice of the discipline. We focus on personality and what makes a person unique, how people work together in groups including couples, small groups or crowds and what happens to a person when they develop a mental illness and what we can do to treat these conditions. We also examine the processes that drive a person to do things that they do and how they feel about them and examine the impact of culture on mental processing and the nature of intercultural diversity.