



THE UNIVERSITY OF  
**SYDNEY**

## **How to plan your Science degree** Science sample degree plans 2020



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*This document is intended to be used as a guide only, as sample plans are indicative. All students must refer to the Science Handbook for details such as course resolutions, and to the University's coursework policy and rules. While the information provided in this document is considered to be true and correct at the date of publication, changes to circumstances after the time of publication may impact on the accuracy of the information. The University strives to keep the information in this document up to date, and any errors in the information that are brought to our attention will be corrected as soon as possible. The University reserves the right to change without notice any information stored on this document at any time. To check the Science handbook and coursework policy, visit: [sydney.edu.au/handbooks/essential\\_information](https://sydney.edu.au/handbooks/essential_information)*

## BACHELOR OF SCIENCE – STREAM DEGREE SAMPLES

### Bachelor of Science/Bachelor of Advanced Studies (Agriculture); Animal Production

YEAR 1		YEAR 2		YEAR 3		YEAR 4	
Life and Evolution or Concepts of Animal Management (s2)	From Molecules to Ecosystems	Plant Management and Agroecosystems	Animal Nutrition	Selective <sup>^</sup>	Animal Behaviour and Welfare Science	Research Project A	Research Project B
Earth, Environment and Society	Global Challenges: Food, Water and Climate	Soil and Water: Earth's Life Support Systems	Genetics and Genomics	Selective <sup>^</sup>	Production Systems Analysis or Interdisciplinary Project	Research Project A	Research Project B
Introduction to Statistical Methods	Elective	Applied Statistical Methods	OLE	OLE	Elective	Adv CW	PD
Major	Major	Major	Major	Major	Major	Major	Major

<sup>^</sup> Selective units: Animal Reproduction; Aquaculture; Intensive Farming Systems; Livestock Production Systems; New and Emerging Tech in Animal Science

### Bachelor of Science/Bachelor of Advanced Studies (Agriculture); Plant Production

YEAR 1		YEAR 2		YEAR 3		YEAR 4	
Life and Evolution	From Molecules to Ecosystems	Plant Management and Agroecosystems	Plants and Environment	Plant Protection	Sustainable Plant Production	Research Project A	Research Project B
Earth, Environment and Society	Global Challenges: Food, Water and Climate	Soil and Water: Earth's Life Support Systems	Genetics and Genomics	Agroecosystems in Developing Countries or Production Horticulture or Environmental GIS	Applied Plant Function	Research Project A	Research Project B
Introduction to Statistical Methods	Elective	Applied Statistical Methods	OLE	OLE	Elective	Adv CW	PD
Major	Major	Major	Major	Major	Major	Major	Major

### Bachelor of Science/Bachelor of Advanced Studies (Agriculture); Soil Science and Hydrology

YEAR 1		YEAR 2		YEAR 3		YEAR 4	
Life and Evolution	From Molecules to Ecosystems	Soil and Water: Life's Support Systems	Earth Surface Processes	Environmental GIS	Hydrological Modelling and Monitoring	Research Project A	Research Project B
Earth, Environment and Society	Global Challenges: Food, Water and Climate	Plant Management in Agroecosystems	Genetics and Genomics	Stats in the Natural Sciences or Environmental Geography	Protecting the Soil Resource	Research Project A	Research Project B
Introduction to Statistical Methods	Elective	Applied Statistical Methods	OLE	OLE	Elective	Adv CW	PD
Major	Major	Major	Major	Major	Major	Major	Major

**Bachelor of Science/Bachelor of Advanced Studies (Animal and Veterinary Bioscience)**

YEAR 1		YEAR 2		YEAR 3		YEAR 4	
Chemistry 1A	From Molecules to Ecosystems	Animal Structure and Function	Animal Nutrition	Animal Reproduction	Animal Behaviour and Welfare Science	Research Project A	Research Project C
Animals and Us	Concepts of Animal Management	Animal Energetics and Homeostasis	Australian Wildlife Biology or Genetics and Genomics	Interdisciplinary Project	Animal Biotechnology or New and Emerging Tech in Animal Science	Research Project B	Research Project D
Introduction to Statistical Methods	Elective	Applied Statistical Methods	OLE	OLE	Elective	PD	Adv CW*
Major	Major	Major	Major	Major	Major	Major	Major

\* Dairy Production and Industry; Food Safety Assessment and Management; Feed Technology; Extensive Animal Industries; Equine Science and Industries

**Bachelor of Science/Bachelor of Advanced Studies (Food and Agribusiness)**

YEAR 1		YEAR 2		YEAR 3		YEAR 4	
Chemistry 1A	From Molecules to Ecosystems	Biochemistry and Molecular Biology	Food Science	Food Processing and Value Adding	Food Product Development* or Interdisciplinary Project	Research Project A	Research Project B
Introduction to Statistical Methods	Global Challenges: Food, Water, Climate	Applied Statistical Methods	Managing Food and Beverage Supply Chains	Chemistry and Biochemistry of Foods	Food Quality and Safety	Research Project A	Research Project B
Elective	Elective	Elective	OLE	OLE	Elective	Food Science and Innovation	Industry Internship
Business Major	Business Major	Business Major	Business Major	Business Major	Business Major	Business Major	Business Major

\*Offered as August Intensive

**Bachelor of Science/Bachelor of Advanced Studies (Health) - 2nd Major: Human Movement;  
Also available as Bachelor of Science (Health)**

YEAR 1		YEAR 2		YEAR 3		YEAR 4	
Introduction to Health and Health Care	Society and Health	Research Methods in Health	Innovations in eHealth	Research unit	Interdisciplinary experience unit	Project	Project
Human Biology or Life and Evolution	Psychology	OLE	Elective	Disciplinary project unit	Selective unit	Project	Project
Mathematics	Mathematics	OLE	Fundamentals of Movement Science	Elective	Biomechanics or Anatomical Analysis of Exercise	Adv CW	Adv CW
Functional Musculoskeletal Anatomy A	Functional Musculoskeletal Anatomy B	Body Systems and Human Performance	Neuroscience in Health and Disease	Motor Control and Learning	Exercise Physiology	Adv CW	Adv CW

Research units of study: Evidence Based Health Care; Quantitative Research Methods in Health; Qualitative Research Methods in Health; Designing a Research Project

Interdisciplinary project units of study: Health Service Strategy and Policy; Health Ethics and the Law; Rural Health; Abroad; Indigenous Communities or Individual and Societal Ageing; eHealth for Chronic Disease and Wellness; Alcohol and Drug Misuse Rehabilitation

Disciplinary Project units of study: Health and Indigenous Populations; Health Service Strategy and Policy; Health Ethics and the Law; International Health; Rural Health; FHS Abroad; FHS Indigenous Communities; Mental Health Rehabilitation; Individual and Societal Ageing; Quantitative Research Methods in Health; Health Promotion: Principles and Practice; BHS Work Integrated Learning Placement; Designing a Research Project

Selective units of study: Health and Indigenous Populations; Health Service Strategy and Policy; Health Ethics and the Law; Evidence Based Health Care; International Health; Health and Lifelong Disability; Rural Health; FHS Abroad; FHS Indigenous Communities; Mental Health Rehabilitation; Individual and Societal Ageing; Quantitative Research Methods in Health; Qualitative Research Methods in Health; Health Promotion: Principles and Practice; BHS Work Integrated Learning Placement; Designing a Research Project; eHealth for Chronic Disease and Wellness; Alcohol and Drug Misuse Rehabilitation

**Bachelor of Science/Bachelor of Advanced Studies (Medical Science);  
Also available as Bachelor of Science (Medical Science)**

YEAR 1		YEAR 2		YEAR 3		YEAR 4	
Human Biology	From Molecules to Ecosystems	Key Concepts in Pharmacology	Microbes, Infection and Immunity	Interdisciplinary project	Medical Science selective units*	Project	Project
Chemistry 1A	OLE	Key Concepts in Physiology	Human Anatomy and Histology	Medical Science selective units*	Medical Science selective units*	Project	Project
Mathematics	Mathematics	Biochemistry and Molecular Biology	OLE	Elective	Elective	Adv CW	Adv CW
Major	Major	Major	Major	Major	Major	Major	Major

\* Medical Science selective units: Virology; Pharmacology; Applied Medical Science; Anatomy and Histology; Immunology; Cell Biology



**Bachelor of Science/Bachelor of Advanced Studies (Taronga Wildlife Conservation)**

YEAR 1		YEAR 2		YEAR 3		YEAR 4	
Life and Evolution	From Molecules to Ecosystems	Applied Statistical Methods	Genetics and Genomics	Taronga Project unit	Taronga Project unit	Wildlife Management (WPZ)	Wildlife Health and Welfare
Animals and Us	OLE	OLE	Ecology and Conservation	Wildlife Conservation	Ecology	Honours/AdvCW	Honours/AdvCW
Introduction to Statistical Methods	Elective	Elective	Australian Wildlife Biology	Elective	Elective	Honours/AdvCW	Honours/AdvCW
Major	Major	Major	Major	Major	Major	Major	Major

**Note: Not all 4000-level units will be ready for enrolment in 2020. Please note that transferring students or students with credit may not be able to graduate before 2021.**

## BACHELOR OF SCIENCE DOUBLE DEGREES

### Bachelor of Science/Doctor of Dental Medicine (Refer to B Science programs and majors)

YEAR 1 <sup>#</sup>		YEAR 2 <sup>#</sup>		YEAR 3 <sup>#</sup>		YEAR 4-7 Doctor of Dental Medicine
Science Major	Science Major	Science Major	Science Major	Science Major	Science Major	
Science	Biology <sup>^</sup>	Maths	OLE	Science Major	Science Major	
OLE	Maths	Elective	Elective	Elective	Elective	
Minor	Minor	Minor	Minor	Minor	Minor	

<sup>^</sup> Biology elective: Life and Evolution; From Molecules to Ecosystems; Human Biology

<sup>#</sup> All students must undertake a zero credit point 5-day Observational Elective Placement during their undergraduate degree (Dentistry Elective)

### Bachelor of Science/Doctor of Medicine (Refer to B Science programs and majors)

YEAR 1		YEAR 2		YEAR 3		YEAR 4-7 Doctor of Medicine
Science Major	Science Major	Science Major	Science Major	Science Major	Science Major	
Dentistry elective	Biology <sup>^</sup>	Maths	OLE	Science Major	Science Major	
OLE	Maths	Elective	Elective	Elective	Elective	
Minor	Minor	Minor	Minor	Minor	Minor	

<sup>#</sup> All students must undertake a zero credit point 5-day Observational Elective Placement during their undergraduate degree (Observational Elective)

### Bachelor of Science (Medical Science)/Doctor of Medicine

YEAR 1		YEAR 2		YEAR 3		YEAR 4-7 Doctor of Medicine
Human Biology	From Molecules to Ecosystems	Key Concepts in Pharmacology	Microbes, Infection and Immunity	Interdisciplinary project	Medical Science selective units*	
Chemistry 1A	OLE	Key Concepts in Physiology	Human Anatomy and Histology	Medical Science selective units*	Medical Science selective units*	
Mathematics	Mathematics	Biochemistry and Molecular Biology	OLE	Elective	Elective	
Minor	Minor	Minor	Minor	Minor	Minor	





**Bachelor of Science/Master of Mathematical Sciences;  
Mathematical Sciences Program, Data Science**

YEAR 1		YEAR 2		YEAR 3		YEAR 4		YEAR 5
Advanced Statistics and Linear Algebra	Informatics: Data and Computation	Data Science: Big Data and Data Diversity	Data Analytics: Learning from Data	Data Methods	Data Application	Coursework	Coursework	Research Project
Calculus	Elective/ Dalyell	Program selective <sup>#</sup>	Data Selective <sup>^</sup>	Program selective <sup>*</sup>	Interdisciplinary project	Coursework	Coursework	
OLE	Science	OLE	Elective	Elective/ Dalyell	Elective	Coursework	Coursework	
Minor	Minor	Minor	Minor	Minor	Minor	Coursework	Coursework	

<sup>#</sup> Program selective units (all advanced): Vector Calculus and Differential Equations or Linear and Abstract Algebra or Probability and Statistical Models

<sup>^</sup> Data selective: Data Structures and Algorithms; Computational Modelling; Probability and Estimation Theory; Probability and Statistical Models; Actuarial Data Analytics

<sup>\*</sup> Program selective units: Projects in Financial Mathematics; Projects in Mathematics; Stochastic Processes; Financial Mathematics; Applied Linear Models; Statistical Inferences; Statistical Machine learning; Metric Spaces, ...

<sup>^^</sup> M Mathematical Sciences coursework unit topics: Algebra; Advanced Mathematical Methods; Applied Mathematics; Applied Statistics; Computational Mathematics; Computational Statistics; Financial Mathematics; Financial Statistics; Geometry; Mathematics; Mathematical Physics Measure Theory; Nonlinear Systems; Probability; Representation Theory; Statistics; Statistical Theory; Topology

**Bachelor of Science/Master of Mathematical Sciences;  
Mathematical Sciences Program, Financial Mathematics and Statistics**

YEAR 1		YEAR 2		YEAR 3		YEAR 4 <sup>^^</sup>		YEAR 5
Calculus (One Variable and Multivariable)	Linear Algebra and Statistics	Probability and Estimation Theory	Optimisation and Financial Mathematics	Mathematical Modelling	Financial Derivatives	Coursework	Coursework	Research Project
Elective/ Dalyell	Informatics: Data and Computation	Program selective <sup>#</sup>	Program selective <sup>#</sup>	Interdisciplinary project	Statistical Modelling	Coursework	Coursework	
OLE	Science	OLE	Elective	Elective	Elective/ Dalyell	Coursework	Coursework	
Minor	Minor	Minor	Minor	Minor	Minor	Coursework	Coursework	

<sup>#</sup> Program selectives (all advanced): Vector Calculus and Differential Equations; Linear and Abstract Algebra; Data analysis: Learning from Data

<sup>^^</sup> M Mathematical Sciences coursework unit topics: Algebra; Advanced Mathematical Methods; Applied Mathematics; Applied Statistics; Computational Mathematics; Computational Statistics; Financial Mathematics; Financial Statistics; Geometry; Mathematics; Mathematical Physics Measure Theory; Nonlinear Systems; Probability; Representation Theory; Statistics; Statistical Theory; Topology



**Bachelor of Science/Master of Mathematical Sciences;  
Mathematical Sciences Program, Mathematics**

YEAR 1		YEAR 2		YEAR 3		YEAR 4^^		YEAR 5
Calculus (One Variable and Multivariable)	Linear Algebra and Statistics	Vector Calculus and Differential Equations	Analysis or Number Theory and Cryptography	Selective#	Selective#	Coursework	Coursework	Research Project
Elective/ Dalyell	Informatics: Data and Computation	Linear and Abstract Algebra	Elective	Interdisciplinary project	Program selective^	Coursework	Coursework	
OLE	Science	Data Analytics: Learning from Data (Adv) or Probability and Statistical Models (Adv)	OLE	Elective/ Dalyell	Elective	Coursework	Coursework	
Minor	Minor	Minor	Minor	Minor	Minor	Coursework	Coursework	

# Selective units: Geometry and Topology; Nonlinear ODEs with Applications; Algebra and Logic; Mathematical Computing; PDEs and Waves (Semester 2)

^ Program selective: Data Science capstone; Projects in Financial Mathematics; Projects in Mathematics; Stochastic Processes; Financial Mathematics; Applied Linear Models; Statistical Inferences; Statistical Machine learning; Metric Spaces, ...

^^ M Mathematical Sciences coursework unit topics: Algebra; Advanced Mathematical Methods; Applied Mathematics; Applied Statistics; Computational Mathematics; Computational Statistics; Financial Mathematics; Financial Statistics; Geometry; Mathematics; Mathematical Physics Measure Theory; Nonlinear Systems; Probability; Representation Theory; Statistics; Statistical Theory; Topology

**Bachelor of Science/Master of Mathematical Sciences; Mathematical Sciences Program, Statistics**

YEAR 1		YEAR 2		YEAR 3		YEAR 4		YEAR 5
Calculus (One Variable and Multivariable)	Linear Algebra and Statistics	Probability and Estimation Theory	Data Analytics: Learning from Data or Statistical Tests	Applied Linear Models	Statistical Inference	Coursework	Coursework	Research Project
Elective/ Dalyell	Informatics: Data and Computation	Program selective#	Program selective#	Selective*	Interdisciplinary project	Coursework	Coursework	
OLE	Science	OLE	Elective	Elective	Elective/ Dalyell	Coursework	Coursework	
Minor	Minor	Minor	Minor	Minor	Minor	Coursework	Coursework	

# Program selectives (all advanced) - Semester 1: Vector Calculus and Differential Equations; Linear Abstract Algebra; Semester 2: Analysis; Number Theory and Cryptography; Optimisation and Financial Mathematics

\* 3000 level selective units: Stochastic Process; Time Series; Statistical Consulting

^^ M Mathematical Sciences coursework unit topics: Algebra; Advanced Mathematical Methods; Applied Mathematics; Applied Statistics; Computational Mathematics; Computational Statistics; Financial Mathematics; Financial Statistics; Geometry; Mathematics; Mathematical Physics Measure Theory; Nonlinear Systems; Probability; Representation Theory; Statistics; Statistical Theory; Topology

**Bachelor of Science/Master of Nutrition And Dietetics**

YEAR 1		YEAR 2		YEAR 3		YEAR 4		YEAR 5	
Chemistry 1A	From Molecules to Ecosystems	Biochemistry and Molecular Biology	Proteins in Cells	Introductory Nutrition and Metabolism	Metabolic Cybernetics	Dietary Intake and Nutrition Assessment	Food Service Mgt	Dietetics Training Placement	Nutrition Research Project
Human Biology	Chemistry 1B	Key Concepts in Physiology	Integrative Physiology	Food Processing and Value Adding	Selective <sup>^</sup>	Food and Nutrition Science	Community and Public Health Nutrition		
OLE	Maths	OLE	Maths	Elective	Elective	Methods in Nutrition Research	Medical Nutrition		
Minor	Minor	Minor	Minor	Minor	Minor	Dietetics Professional Studies			

<sup>^</sup> Selective units: Medical and Metabolic Biochemistry; Molecular Biology and Biochemistry – Genes; Molecular Biology and Biochemistry – Proteins; Human Molecular and Cell Biology

**Bachelor Of Veterinary Biology/Doctor Of Veterinary Medicine**

Bachelor of Veterinary Biology			
YEAR 1		YEAR 2	
Life and Evolution	From Molecules to Ecosystems	Genetics and Genomics	Introductory Veterinary Pathogenesis
Chemistry 1A	Chemistry 1B	Animal Energetics and Homeostasis	Animal Nutrition
Introduction to Statistical Methods	Concepts of Animal Management	Animal Structure and Function	Elective
Elective	Elective	Elective	Elective

Candidates who successfully complete the progression requirements enrol in the units of study for the Doctor of Veterinary Medicine degree.

Doctor of Veterinary Medicine			
YEAR 3	YEAR 4	YEAR 5	YEAR 6
Foundations of Veterinary Science A&B Professional Skills 1A&1B The Veterinary Professional 1 Animal Management Systems 1 Research and Enquiry 1A&1B	Principles of Animal Disease A&B Professional Skills 2A&2B The Veterinary Professional 2 Animal Management Systems 2 Research and Enquiry 2A&2B	Small Animal Practice A&B Veterinary Public Practice Veterinary Practice Management Clinical Foundations Research and Enquiry 3B Small Practice A&B Livestock Practice A&B Equine Practice A&B Exotic and Wildlife Practice Intensive Animal Practice	Small Animal Clinics A,B,C&D Large Animal Clinics A&B Lab Investigations of Clinical Disease Public, Industry or Community Placement Extramural Placement 1,2,3&4

**Bachelor of Liberal Arts and Science** (Refer to B Science and B Arts for the list of majors available)

YEAR 1		YEAR 2		YEAR 3	
Major	Major	Major	Major	Major	Major
Elective	Elective	Elective	Elective	Major	Major
LS: Analytical Thinking	LS: Writing and Rhetoric: Academic Essays	LS: elective <sup>#</sup>	LS: elective <sup>#</sup>	LS Ethics: Science, Ethics and Society <sup>^</sup>	LS: elective <sup>#</sup>
Sequence	Sequence	Sequence	Sequence	Sequence	Sequence

<sup>^</sup> Ethics units offered at all levels. Units include: Bioethics; Society, Ethics and Society; Reality, Ethics and Beauty; Practical Ethics; Moral Psychology

<sup>#</sup> Elective unit disciplines cover: analytical thinking; communication; ethics; society, culture and global citizenship; scientific enquiry; technological literacy

**Bachelor of Psychology**

YEAR 1		YEAR 2		YEAR 3		YEAR 4	
Psychology	Psychology	Statistics and Research Methods for Psychology	Perception, Cognition and Intelligence	Psychology selective <sup>^</sup>	Psychology selective <sup>^</sup>	Honours	Honours
Mathematics	Elective	Brain and Behavioural Psychology	Personality and Social Psychology	Interdisciplinary project	Advanced Statistics for Psychology	Honours	Honours
Elective	Elective	Elective	Elective	Elective	Intro to Clinical Practice or Health Psychology	Honours	Honours
Minor	Minor	Minor	Minor	Minor	Minor	Honours	Honours

<sup>^</sup> Third year selective units: Learning and Behaviour; Cognition, Language and Thought; Perceptual Systems; Behavioural and Cognitive Neuroscience; Personality and Intelligence 2; Developmental Psychology; Social Psychology; Abnormal Psychology; Applied Psychology; Psychology and Psychiatry; History and Philosophy

## BACHELOR OF SCIENCE – PROGRAM AND MAJOR DEGREE SAMPLES

Bachelor of Science/Bachelor of Advanced Studies – available with an additional year

Bachelor of Science/Bachelor of Advanced Studies (ADVANCED) – available with completion of advanced coded units or additional senior units.

### Bachelor of Science; Agroecosystems program (Animal Production embedded major)

YEAR 1		YEAR 2		YEAR 3	
Life and Evolution or Concepts of Animal Management (s2)	From Molecules to Ecosystems	Plant Management and Agroecosystems	Animal Nutrition	Selective <sup>^</sup>	Animal Behaviour and Welfare Science
OLE	Elective	Soil & Water: Earth's Life Support Systems	Genetics and Genomics	Selective <sup>^</sup>	Production Systems Analysis or Interdisciplinary Project
Mathematics	Mathematics	OLE	Elective	Major 2/Elective	Major 2/Elective
Major 2/Minor	Major 2/Minor	Major 2/Minor	Major 2/Minor	Major 2/Minor	Major 2/Minor

<sup>^</sup> Selective units: Animal Reproduction; Aquaculture; Intensive Farming Systems; Livestock Production Systems; New and Emerging Tech in Animal Science

### Bachelor of Science; Agroecosystems program (Plant Production embedded major)

YEAR 1		YEAR 2		YEAR 3	
Life and Evolution	From Molecules to Ecosystems	Plant Management and Agroecosystems	Plants and Environment	Plant Protection	Sustainable Plant Production
OLE	Elective	Soil & Water: Earth's Life Support System	Genetics and Genomics	Agroecosystems in Developing Countries or Production Horticulture or Environmental GIS	Applied Plant Function
Mathematics	Mathematics	OLE	Elective	Major 2/Elective	Major 2/Elective
Major 2/Minor	Major 2/Minor	Major 2/Minor	Major 2/Minor	Major 2/Minor	Major 2/Minor

### Bachelor of Science; Agroecosystems program (Soil Science and Hydrology embedded major)

YEAR 1		YEAR 2		YEAR 3	
Life and Evolution	From Molecules to Ecosystems	Soil and Water: Life's Support Systems	Earth Surface Processes	Environmental GIS	Hydrological Modelling and Monitoring
OLE	Elective	Plant Management and Agroecosystems	Genetics and Genomics	Stats in the Natural Sciences or Environmental Geography	Protecting the Soil Resource
Mathematics	Mathematics	OLE	Elective	Major 2/Elective	Major 2/Elective
Major 2/Minor	Major 2/Minor	Major 2/Minor	Major 2/Minor	Major 2/Minor	Major 2/Minor

**Bachelor of Science; Anatomy and Histology major**

YEAR 1		YEAR 2		YEAR 3	
Human Biology	Chemistry 1A	Principles of Histology	Concepts in Neuroanatomy	Interdisciplinary project	Cranial and Cervical Anatomy
OLE	Elective	Elective	Elective	Visceral Anatomy	Functional Systems Histology
Mathematics	Mathematics	OLE	Elective	Major 2/Elective	Major 2/Elective
Major 2/Minor	Major 2/Minor	Major 2/Minor	Major 2/Minor	Major 2/Minor	Major 2/Minor

**Bachelor of Science; Animal Health, Disease and Welfare major**

YEAR 1		YEAR 2		YEAR 3	
Life and Evolution	From Molecules to Ecosystem	Immunobiology or Microbiology or Microbes, Infection and Immunity (s2)	Introductory Veterinary Pathogenesis	Agents of Disease	Animal Behaviour and Welfare Science
OLE	Elective	Elective	Elective	Animal Health and Disease	Laboratory Disease Investigation
Mathematics	Mathematics	OLE	Elective	Major 2/Elective	Major 2/Elective
Major 2/Minor	Major 2/Minor	Major 2/Minor	Major 2/Minor	Major 2/Minor	Major 2/Minor

**Bachelor of Science; Animal Production major**

YEAR 1		YEAR 2		YEAR 3	
Life and Evolution or Concepts of Animal Management (s2)	From Molecules to Ecosystems	Genetics and Genomics	Animal Nutrition	Animal Reproduction or Aquaculture or Intensive Farming Systems (s2) or Livestock Production Systems (s2) or New and Emerging Tech in Animal Science	Animal Behaviour and Welfare Science
OLE	Elective	Elective	Elective	(options as above)	Production Systems Analysis or Interdisciplinary Project
Mathematics	Mathematics	OLE	Elective	Major 2/Elective	Major 2/Elective
Major 2/Minor	Major 2/Minor	Major 2/Minor	Major 2/Minor	Major 2/Minor	Major 2/Minor

### Bachelor of Science; Applied Medical Science major

YEAR 1		YEAR 2		YEAR 3	
Chemistry 1A	From Molecules to Ecosystems	Biochemistry and Molecular Biology	Microbes, Infection and Immunity	Cancer	Diagnostics and Biomarkers
OLE	Elective	Elective	Elective	Interrogating Biomedical and Health Data	Clinical Science or Science Interdisciplinary Project
Mathematics	Mathematics	OLE	Elective	Major 2/Elective	Major 2/Elective
Major 2/Minor	Major 2/Minor	Major 2/Minor	Major 2/Minor	Major 2/Minor	Major 2/Minor

### Bachelor of Science; Biochemistry And Molecular Biology Major

YEAR 1		YEAR 2		YEAR 3	
Chemistry 1A	From Molecules to Ecosystems	Biochemistry and Molecular Biology	Proteins in Cells	Gene and Genome Regulation	Interdisciplinary Project
OLE	Elective	Elective	Elective	Protein Function and Engineering	Biochemistry of Human Disease or Beyond the Genome or Drug Design and Development <sup>#</sup>
Mathematics	Mathematics	OLE	Elective	Major 2/Elective	Major 2/Elective
Major 2/Minor	Major 2/Minor	Major 2/Minor	Major 2/Minor	Major 2/Minor	Major 2/Minor

<sup>#</sup> Drug Design and Development is offered in Semester 1 (not as represented in table)

### Bachelor of Science; Biology Major

YEAR 1		YEAR 2		YEAR 3	
Life and Evolution or Human Biology	From Molecules to Ecosystems	Botany or Zoology	Biology and Experimental Design and Analysis	Field units <sup>^</sup>	Interdisciplinary project
OLE	Elective	Breadth units <sup>*</sup>	Elective	Selective units <sup>~</sup>	Elective
Mathematics	Mathematics	OLE	Elective	Major 2/Elective	Major 2/Elective
Major 2/Minor	Major 2/Minor	Major 2/Minor	Major 2/Minor	Major 2/Minor	Major 2/Minor

<sup>\*</sup> Breadth units: Comparative Primate Anatomy or Introductory Immunology or Genetics and Genomics or Microbiology or Zoology or Botany or Australian Wildlife or Cells or Entomology or Plants and Environment

<sup>^</sup> Field units: Ecology or Marine Field Ecology or Terrestrial Field Ecology or Tropical Wildlife Biology or Coral Reef Biology

<sup>~</sup> Selective units: Marine Biology or Gene and Technology Genomics or Developmental Genetics or Animal Ecological Physiology or Animal Behaviour or Applied Molecular Plant Biology or Applied Plant Function or Applied Entomology

### Plant Science minor

YEAR 1		YEAR 2		YEAR 3	
Life and Evolution	From Molecules to Ecosystems	Botany	Plants and Environment	Applied Plant Function	Terrestrial Plant Ecology* or Plant Protection or Molecular Plant Biology

\*Offered as July Intensive

### Bachelor of Science; Cell and Developmental Biology major

YEAR 1		YEAR 2		YEAR 3	
Chemistry 1A or Life and Evolution	From Molecules to Ecosystems	Cells	Proteins in Cells or Genetics and Genomics	Reproduction, Development and Disease	Cells and Development: Theory or Practical
OLE	Elective	Elective	Elective	Interdisciplinary Project	Developmental Biology
Mathematics	Mathematics	OLE	Elective	Major 2/Elective	Major 2/Elective
Major 2/Minor	Major 2/Minor	Major 2/Minor	Major 2/Minor	Major 2/Minor	Major 2/Minor

### Bachelor of Science; Chemistry major

YEAR 1		YEAR 2		YEAR 3	
Chemistry 1A	Chemistry 1B	Molecular Stability and Reactivity	Chemistry selective**	Chemistry selective*	Chemistry selective*
OLE	Elective	Elective	Elective	Chemistry selective*	Interdisciplinary project
Mathematics	Mathematics	OLE	Elective	Major 2/Elective	Major 2/Elective
Major 2/Minor	Major 2/Minor	Major 2/Minor	Major 2/Minor	Major 2/Minor	Major 2/Minor

\*\*Chemistry selective units of study: Sustainable Chemical Manufacture or Chemistry of Biological Molecules or Chemical Physics

\* Chemistry selective units of study: Biomolecules: Properties and Reactions or Organic Structure and Reactivity or Materials Chemistry or Catalysis and Sustainable Processes or Metal Complexes: Medicine and Materials or Synthetic Medicinal Chemistry or Membranes, Self-Assembly and Surfaces or Molecular Spectroscopy and Quantum Theory

### Bachelor of Science; Computer Science major

YEAR 1		YEAR 2		YEAR 3	
Introduction to Programming	Object-Oriented Programming	Data Structures & Algorithms	Programming Languages, Logic and Models	Algorithm Design	Computer Science Project
OLE	Mathematics	Systems Programming	Elective	Computer Science selective units*	Elective
Elective	Mathematics	OLE	Elective	Major 2/Elective	Major 2/Elective
Major 2/Minor	Major 2/Minor	Major 2/Minor	Major 2/Minor	Major 2/Minor	Major 2/Minor

\* Computer Science selective units: Distributed Systems; Introduction to Artificial Intelligence; Graphics and Multimedia; Operating Systems Internals



**Bachelor of Science; Data Science major**

YEAR 1		YEAR 2		YEAR 3	
Foundations of Data Science or Maths (3cp)*	Informatics: Data and Computation	Data Science: Big Data and Data Diversity	Data Analytics: Learning from Data	Data methodology unit <sup>#</sup>	Data methodology or application** unit
OLE	Science	Elective	Data Selective <sup>^</sup>	Elective	Data Science Capstone
Elective	Mathematics	OLE	Elective	Major 2/Elective	Major 2/Elective
Major 2/Minor	Major 2/Minor	Major 2/Minor	Major 2/Minor	Major 2/Minor	Major 2/Minor

\* Maths 3cp units cover: statistics; computations; mathematics.

<sup>^</sup> Data selective: Data Structures and Algorithms; Computational Modelling; Probability and Estimation Theory; Probability and Statistical Models; Actuarial Data Analytics; Genetics and Genomics; Molecular Systems Biology

<sup>#</sup> Data methodology: Data Science Platforms; Human-in-the-Loop Data Analytics; Introduction to Artificial Intelligence; Algorithm Design; Stochastic Processes; Applied Linear Models; Statistical Inference; Time Series; Statistical Consulting

<sup>\*\*</sup> Application unit: Environmental GIS; Statistics in the Natural Sciences; Interrogating Biomedical and Health Data; Applied Genomics; Beyond the Genome

**Bachelor of Science; Ecology and Evolutionary Biology major**

YEAR 1		YEAR 2		YEAR 3	
Life and Evolution	From Molecules and Ecosystems	Elective	Ecology and Conservation	Evolutionary Biology	Ecology
OLE	Elective	Elective	Biology Experimental Design and Analysis	Selective unit <sup>*</sup>	Interdisciplinary project
Mathematics	Mathematics	OLE	Elective	Major 2/Elective	Major 2/Elective
Major 2/Minor	Major 2/Minor	Major 2/Minor	Major 2/Minor	Major 2/Minor	Major 2/Minor

\* Selective: Evolutions of the Australian Biota; Marine Field Ecology; terrestrial Field Ecology; Animal Ecological Physiology; Animal Behaviour

**Wildlife Conservation minor**

YEAR 1		YEAR 2 (s2)		YEAR 3	
Life and Evolution	From Molecules to Ecosystems	Ecology and Conservation	Biology Experimental Design and Analysis	Wildlife Conservation	Ecology



**Bachelor of Science; Environmental Science program**

YEAR 1		YEAR 2		YEAR 3	
Chemistry 1A* (or Earth, Environment & Society)	Chemistry 1A* (or Global Challenges: Food, Water, Climate)	Environmental Monitoring	Australian Wildlife Biology or Plants and Environment or Biology Experimental Design and Analysis or Applied Statistical Methods	Selective^	Environmental GIS
OLE	Elective	Soil and Water: Earth's Life Support Systems	Earth Surface Processes	Selective^	Interdisciplinary Project
Mathematics	Mathematics	OLE	Elective	Major 2/Elective	Major 2/Elective
Major 2/Minor	Major 2/Minor	Major 2/Minor	Major 2/Minor	Major 2/Minor	Major 2/Minor

\* Chemistry 1A is a core unit

^ Selective: Hydrological Modelling and Monitoring; Wildlife Conservation; Terrestrial Plant Ecology; Contemporary Field and Lab Soil Science

**Bachelor of Science; Environmental Studies major**

YEAR 1		YEAR 2		YEAR 3	
Earth, Environment and Society	Selective#	Concepts in Enviro and Agricultural Economics or Natural Hazards: a GIS approach or Environmental Politics (s2)	Environmental and Resource Management	Environmental Law and Ethics	Interdisciplinary project
OLE	Elective	Elective	Elective	Selective^	Selective^
Mathematics	Mathematics	OLE	Elective	Major 2/Elective	Major 2/Elective
Major 2/Minor	Major 2/Minor	Major 2/Minor	Major 2/Minor	Major 2/Minor	Major 2/Minor

# 1000 level selective units: From Molecules to Ecosystems; Chemistry 1A; Global Challenges: Food, Water, Climate; Introductory Geography; Life and Evolution; Principles of Economics

^ 3000 level selective units: Energy and the Environment; GIS in Coastal Management; Environmental Economics; Urban Citizenship and Sustainability; Asia and Pacific Field School

**Bachelor of Science; Financial Mathematics and Statistics major**

YEAR 1		YEAR 2		YEAR 3	
Calculus (One Variable and Multivariable)	Linear Algebra and Statistics or Data Science	Probability and Estimation Theory	Optimisation and Financial Mathematics	Stochastic Processes	Financial Derivatives
Science	Science	Elective	Data Analytics: Learning from Data	Interdisciplinary project	Elective
OLE	Elective	OLE	Elective	Major 2/Elective	Major 2/Elective
Major 2/Minor	Major 2/Minor	Major 2/Minor	Major 2/Minor	Major 2/Minor	Major 2/Minor

**Bachelor of Science; Food Science major**

YEAR 1		YEAR 2		YEAR 3	
Chemistry 1A	From Molecules to Ecosystems	Biochemistry and Molecular Biology	Principles of Food Science	Food Processing and Value Adding	Food Product Development* OR Science Interdisciplinary Project
OLE	Elective	Elective	Elective	Chemistry and Biochemistry of Foods	Food Quality and Safety
Mathematics	Mathematics	OLE	Elective	Major 2/Elective	Major 2/Elective
Major 2/Minor	Major 2/Minor	Major 2/Minor	Major 2/Minor	Major 2/Minor	Major 2/Minor

\*Offered as August Intensive

### Bachelor of Science; Genetics and Genomics major

YEAR 1		YEAR 2		YEAR 3	
Chemistry 1A or Life and Evolution or Human Biology	From Molecules to Ecosystems	Biochemistry and Molecular Biology	Genetics and Genomics	Gene Technology and Genomics	Beyond the Genome or Animal Biotechnology or Evolutionary Biology
OLE	Elective	Elective	Elective	Applied Genomics	Interdisciplinary project
Mathematics	Mathematics	OLE	Elective	Major 2/Elective	Major 2/Elective
Major 2/Minor	Major 2/Minor	Major 2/Minor	Major 2/Minor	Major 2/Minor	Major 2/Minor

### Bachelor of Science; Geography major

YEAR 1		YEAR 2		YEAR 3	
Earth Environment and Society	Introductory Geography	Selective <sup>^</sup>	Environmental and Resource Management	Integrated Geographical Practice	Selective *
OLE	Elective	Elective	Elective	Selective*	Selective*
Mathematics	Mathematics	OLE	Elective	Major 2/Elective	Major 2/Elective
Major 2/Minor	Major 2/Minor	Major 2/Minor	Major 2/Minor	Major 2/Minor	Major 2/Minor

<sup>^</sup> 2000-level Selective units: Earth Surface Processes; Natural Hazards: a GIS Approach; Oceans, Coasts and Climate Change; The Geography of Cities and Regions

\* Selective units: Coastal Environments and Processes; Urban Citizenship and Sustainability; Global Development and Livelihoods; GIS in Coastal Management; Environmental and Sedimentary Geology; Asia and Pacific Field School

### Bachelor of Science; Geology and Geophysics major

YEAR 1		YEAR 2		YEAR 3	
Earth Environment and Society	Introduction to Geology	Volcanoes, Hot Rocks and Minerals	Fossils and Tectonics	Earth's Structure and Evolution	Field Geology*
OLE	Elective	Elective	Elective	Selective <sup>^</sup>	Interdisciplinary project
Mathematics	Mathematics	OLE	Elective	Major 2/Elective	Major 2/Elective
Major 2/Minor	Major 2/Minor	Major 2/Minor	Major 2/Minor	Major 2/Minor	Major 2/Minor

<sup>^</sup> Selective units: Environmental and Sedimentary Geology; Geophysical Methods

\*Offered as July Intensive

### Bachelor of Science; History and Philosophy of Science major

YEAR 1		YEAR 2		YEAR 3	
Bioethics	What is This Thing called Science?	The Birth of Modern Science	Elective	Interdisciplinary project	The Scientific Revolution
OLE	Elective	Science, Ethics and Society	Elective	Selective^	Selective^
Mathematics	Mathematics	OLE	Elective	Major 2/Elective	Major 2/Elective
Major 2/Minor	Major 2/Minor	Major 2/Minor	Major 2/Minor	Major 2/Minor	Major 2/Minor

^ Selective units: History and Philosophy of the Biomedical Sciences; History and Philosophy of the Physical Sciences; Psychology and Psychiatry; History and Philosophy

### Bachelor of Science; Immunology and Pathology major

YEAR 1		YEAR 2		YEAR 3	
Chemistry 1A* or Human Biology	Chemistry 1A* or From Molecules to Ecosystems	Immunobiology or Biochemistry and Molecular Biology	Microbes, Infection and Immunity	Molecular and Cellular Immunology	Selective^
OLE	Elective	Elective	Elective	Pathogenesis of Human Disease 1	Interdisciplinary project
Mathematics	Mathematics	OLE	Elective	Major 2/Elective	Major 2/Elective
Major 2/Minor	Major 2/Minor	Major 2/Minor	Major 2/Minor	Major 2/Minor	Major 2/Minor

\* Chemistry 1A is a core unit

^ Selective units: Pathogenesis of Human Disease 2; Immunology in Human Disease

### Immunology minor

YEAR 1		YEAR 2		YEAR 3	
Chemistry 1A* or Human Biology	Chemistry 1A* or From Molecules to Ecosystems	Immunobiology or Biochemistry and Molecular Biology	Microbes, Infection and Immunity	Molecular and Cellular Immunology	Immunology in Human Disease

\* Chemistry 1A is a core unit

### Pathology minor

YEAR 1		YEAR 2		YEAR 3	
Chemistry 1A* or Human Biology	Chemistry 1A* or From Molecules to Ecosystems	Immunobiology or Biochemistry and Molecular Biology	Microbes, Infection and Immunity	Pathogenesis of Human Disease 1	Pathogenesis of Human Disease 2

\* Chemistry 1A is a core unit



**Bachelor of Science; Infectious Diseases major**

YEAR 1		YEAR 2		YEAR 3	
Human Biology or Chemistry 1A	From Molecules to Ecosystems	Biochemistry and Molecular Biology or Immunobiology or Microbiology	Microbes, Infection and Immunity	Interdisciplinary project	Infectious Diseases
OLE	Elective	Elective	Elective	Selective^	Selective^
Mathematics	Mathematics	OLE	Elective	Major 2/Elective	Major 2/Elective
Major 2/Minor	Major 2/Minor	Major 2/Minor	Major 2/Minor	Major 2/Minor	Major 2/Minor

^ Selective units: Microbes in Infection; Virology; Medical and Applied Virology

**Virology minor**

YEAR 1		YEAR 2		YEAR 3	
Human Biology or Chemistry 1A	From Molecules to Ecosystems	Biochemistry and Molecular Biology or Immunobiology or Microbiology	Microbes, Infection and Immunity	Virology	Medical and Applied Virology

**Bachelor of Science; Information Systems major**

YEAR 1		YEAR 2		YEAR 3	
Introduction to Programming	Object-Oriented Programming	Analysis and Design of Web Information System	Data and Information Management	IT Evaluation	Decision Analytics and Support Systems
OLE	Elective	Elective	Information System in the Internet Age	Elective	Information Systems Project
Mathematics	Mathematics	OLE	Elective	Major 2/Elective	Major 2/Elective
Major 2/Minor	Major 2/Minor	Major 2/Minor	Major 2/Minor	Major 2/Minor	Major 2/Minor

**Bachelor of Science; Marine Science major**

YEAR 1		YEAR 2		YEAR 3	
Life and Evolution or Earth, Environment and Society	From Molecules to Ecosystems or Introduction to Geology	Ocean, Coasts and Climate Change	Biology Experimental Design and Analysis	Coastal Environments and Processes	Marine Biology
OLE	Elective	Elective	Elective	Interdisciplinary project	Selective^
Mathematics	Mathematics	OLE	Elective	Major 2/Elective	Major 2/Elective
Major 2/Minor	Major 2/Minor	Major 2/Minor	Major 2/Minor	Major 2/Minor	Major 2/Minor

^ Selective units: GIS in Coastal Management; Marine Field Ecology; Coral Reef Biology; Aquaculture

**Bachelor of Science; Mathematical Sciences Program, Data Science**

YEAR 1		YEAR 2		YEAR 3	
Advanced Statistics and Linear Algebra	Informatics: Data and Computation	Data Science: Big Data and Data Diversity	Data Analytics: Learning from Data	Data Methods	Data Application
Calculus	Elective/ Dalyell	Program selective <sup>#</sup>	Data Selective <sup>^</sup>	Program selective <sup>*</sup>	Interdisciplinary project
Science	OLE	OLE	Elective	Elective/ Dalyell	Elective
Minor	Minor	Minor	Minor	Minor	Minor

<sup>#</sup> Program selectives (all advanced): Vector Calculus and Differential Equations or Linear and Abstract Algebra or Probability and Statistical Models

<sup>^</sup> Data selective: Data Structures and Algorithms; Computational Modelling; Probability and Estimation Theory; Probability and Statistical Models; Actuarial Data Analytics

<sup>\*</sup> Program selectives: Projects in Financial Mathematics; Projects in Mathematics; Stochastic Processes; Financial Mathematics; Applied Linear Models; Statistical Inferences; Statistical Machine learning; Metric Spaces, ...

**Bachelor of Science; Mathematical Sciences Program, Financial Mathematics and Statistics**

YEAR 1		YEAR 2		YEAR 3	
Calculus (One Variable and Multivariable)	Linear Algebra and Statistics	Probability and Estimation Theory	Optimisation and Financial Mathematics	Mathematical Modelling	Financial Derivatives
Elective/ Dalyell	Informatics: Data and Computation	Program selective <sup>#</sup>	Program selective <sup>#</sup>	Interdisciplinary project	Statistical Modelling
OLE	Science	OLE	Elective	Elective	Elective/ Dalyell
Minor	Minor	Minor	Minor	Minor	Minor

<sup>#</sup> Program selectives (all advanced): Vector Calculus and Differential Equations; Linear and Abstract Algebra; Data analysis: Learning from Data

**Bachelor of Science; Mathematical Sciences Program, Mathematics**

YEAR 1		YEAR 2		YEAR 3	
Calculus (One Variable and Multivariable)	Linear Algebra and Statistics	Vector Calculus and Differential Equations	Analysis or Number Theory and Cryptography	Selective <sup>#</sup>	Selective <sup>#</sup>
Elective/ Dalyell	Informatics: Data and Computation	Linear and Abstract Algebra	OLE	Interdisciplinary project	Program selective <sup>^</sup>
OLE	Science	Data Analytics: Learning from Data (Adv) <sup>~</sup> or Probability and Statistical Models (Adv)	Elective	Elective/ Dalyell	Elective
Minor	Minor	Minor	Minor	Minor	Minor

<sup>#</sup> Selective units: Geometry and Topology; Nonlinear ODEs with Applications; Algebra and Logic; Mathematical Computing; PDEs and Waves (Semester 2)

<sup>^</sup> Program selective: Data Science capstone; Projects in Financial Mathematics; Projects in Mathematics; Stochastic Processes; Financial Mathematics; Applied Linear Models; Statistical Inferences; Statistical Machine learning; Metric Spaces, ...

### Bachelor of Science; Mathematical Sciences Program, Statistics

YEAR 1		YEAR 2		YEAR 3	
Calculus (One Variable and Multivariable)	Linear Algebra and Statistics	Probability and Estimation Theory	Data Analytics: Learning from Data or Statistical Tests	Applied Linear Models	Statistical Inference
Elective/ Dalzell	Informatics: Data and Computation	Program selective <sup>#</sup>	Program selective <sup>#</sup>	Selective <sup>*</sup>	Interdisciplinary project
OLE	Science	OLE	Elective	Elective	Elective/ Dalzell
Minor	Minor	Minor	Minor	Minor	Minor

<sup>#</sup> Program selectives (all advanced) - Semester 1: Vector Calculus and Differential Equations; Linear Abstract Algebra; Semester 2: Analysis; Number Theory and Cryptography; Optimisation and Financial Mathematics

<sup>\*</sup> 3000 level selective units: Stochastic Process; Time Series; Statistical Consulting

### Bachelor of Science; Mathematics major

YEAR 1		YEAR 2		YEAR 3	
Mathematics <sup>^</sup>	Mathematics <sup>^</sup>	Vector Calculus and Differential Equations	Analysis or Number Theory and Cryptography	Selective <sup>^</sup>	Selective <sup>^</sup>
Science	Science	Linear and Abstract Algebra	Elective	Interdisciplinary project	Elective
OLE	Elective	OLE	Elective	Major 2/Elective	Major 2/Elective
Major 2/Minor	Major 2/Minor	Major 2/Minor	Major 2/Minor	Major 2/Minor	Major 2/Minor

1000-level units: Data Science or Biostatistics or Statistical Thinking with Data or Linear Algebra or Applications of Calculus or Mathematical Modelling or Introduction to Linear Algebra or Introduction to Statistical Methods

Selective units: Geometry and Topology; Nonlinear ODEs with Applications; Algebra and Logic; Mathematical Computing; PDEs and Waves

### Bachelor of Science; Medicinal Chemistry major

YEAR 1		YEAR 2		YEAR 3	
Chemistry 1A	Chemistry 1B	Molecular Stability and Reactivity	Elective	Drug Design and Development	From Molecules to Therapeutics
OLE	Elective	Key Concepts in Pharmacology	Elective	Interdisciplinary project <sup>*</sup> or Biomolecules: Properties and Reactions	Interdisciplinary project <sup>*</sup> or Synthetic Medicinal Chemistry
Mathematics	Mathematics	OLE	Elective	Major 2/Elective	Major 2/Elective
Major 2/Minor	Major 2/Minor	Major 2/Minor	Major 2/Minor	Major 2/Minor	Major 2/Minor

<sup>\*</sup> The interdisciplinary project is a core unit.



**Bachelor of Science; Microbiology major**

YEAR 1		YEAR 2		YEAR 3	
Life and Evolution or Chemistry 1A	From Molecules to Ecosystems	Microbiology	Microbes, Infection and Immunity	Microbes in Infection	Interdisciplinary project
OLE	Elective	Elective	Elective	Selective <sup>^</sup>	Selective <sup>^</sup>
Mathematics	Mathematics	OLE	Elective	Major 2/Elective	Major 2/Elective
Major 2/Minor	Major 2/Minor	Major 2/Minor	Major 2/Minor	Major 2/Minor	Major 2/Minor

<sup>^</sup> Selective units: Cellular and Molecular Microbiology; Microbiology Research Skills; Virology

**Bachelor of Science/Bachelor of Advanced Studies; Nanoscience and Nanotechnology program, Physics major (coursework pathway shown for year 4)**

YEAR 1		YEAR 2		YEAR 3		YEAR 4	
Physics 1 or Physics 1A	Physics 1 (Technological)	Physics 2A	Physics 2B	Quantum, Statistical and Comp Physics	Electrodynamics and Optics	Nanoscience	Nanotechnology
Calculus of One Variable or Linear Algebra	Multivariable Calculus and Modelling	Vector Calculus and Differential Equations	Introduction to Nanoscience	Project* or Selective <sup>^</sup>	Project* or Selective <sup>^</sup>	Project A	Project B
OLE	Elective	OLE	Elective	Elective	Elective	Nano Selective <sup>#</sup>	Nano Selective <sup>#</sup>
Major 2	Major 2	Major 2	Major 2	Major 2	Major 2	Major 2	Major 2

\* The Interdisciplinary project is a core unit.

<sup>^</sup> Selective units: Condensed Matter and Particle Physics; Plasma and Astrophysics

<sup>#</sup> Nano selective: Computational Nanotechnology; Nanomaterials in Medicine; Nanotechnology in Biomedical Engineering; Advanced Chemistry; Nanotechnology in Chemical Engineering; Quantum Nanoscience

**Bachelor of Science/Bachelor of Advanced Studies; Nanoscience and Nanotechnology program, Chemistry major (Honours/Research pathway shown for year 4)**

YEAR 1		YEAR 2		YEAR 3		YEAR 4	
Chemistry 1A	Chemistry 1B	Molecular Stability and Reactivity	Chemical Structure and Stability	Chemistry selective <sup>^</sup>	Chemistry selective <sup>^</sup>	Nanoscience	Nanotechnology
Calculus of One Variable or Linear Algebra	Multivariable Calculus and Modelling	Vector Calculus and Differential Equations	Introduction to Nanoscience	Chemistry selective <sup>^</sup>	Interdisciplinary project	Honours	Honours
OLE	Elective	OLE	Elective	Elective	Elective	Honours	Honours
Major 2	Major 2	Major 2	Major 2	Major 2	Major 2	Major 2	Major 2

<sup>^</sup> Chemistry selective units of study: Biomolecules: Properties and Reactions or Organic Structure and Reactivity or Materials Chemistry or Catalysis and Sustainable Processes or Metal Complexes: Medicine and Materials or Synthetic Medicinal Chemistry or Membranes, Self-Assembly and Surfaces or Molecular Spectroscopy and Quantum Theory

### Bachelor of Science; Neuroscience program

YEAR 1		YEAR 2		YEAR 3	
Chemistry 1A	Psychology	Brain and Behavioural Psychology	Concepts of Neuroanatomy	Functional Neuroanatomy	Neuropharmacology
OLE	Elective	Key Concepts in Physiology	OLE	Neural Information Processing	Behavioural and Cognitive Neuroscience Project
Mathematics	Mathematics	Key Concepts in Pharmacology	Elective	Major 2/Elective	Major 2/Elective
Major 2/Minor	Major 2/Minor	Major 2/Minor	Major 2/Minor	Major 2/Minor	Major 2/Minor

### Bachelor of Science; Neuroscience major

YEAR 1		YEAR 2		YEAR 3	
Chemistry 1A	Psychology	Brain and Behavioural Psychology	Concepts of Neuroanatomy	Functional Neuroanatomy	Neuropharmacology
OLE	Elective	Elective	Elective	Neural Information Processing	Behavioural and Cognitive Neuroscience (project)
Mathematics	Mathematics	OLE	Elective	Major 2/Elective	Major 2/Elective
Major 2/Minor	Major 2/Minor	Major 2/Minor	Major 2/Minor	Major 2/Minor	Major 2/Minor

### Bachelor of Science; Nutrition Science major

YEAR 1		YEAR 2		YEAR 3	
Chemistry 1A	From Molecules to Ecosystems	Biochemistry and Molecular Biology	Proteins in Cells	Introductory Nutrition and Metabolism	Metabolic Cybernetics (project)
OLE	Elective	Elective	Elective	Food Processing and Value Adding	Selective <sup>^</sup>
Mathematics	Mathematics	OLE	Elective	Major 2/Elective	Major 2/Elective
Major 2/Minor	Major 2/Minor	Major 2/Minor	Major 2/Minor	Major 2/Minor	Major 2/Minor

<sup>^</sup> Selective units: Gene and Genome Regulation; Protein Function and Engineering; Biochemistry of Human Disease

### Bachelor of Science; Pharmacology major

YEAR 1		YEAR 2		YEAR 3	
Chemistry 1A	From Molecules to Ecosystems	Key Concepts in Pharmacology	Drugs in Contemporary Society	Toxicology	Neuropharmacology
OLE	Elective	Elective	Elective	Drug Design and Development	Interdisciplinary project
Mathematics	Mathematics	OLE	Elective	Major 2/Elective	Major 2/Elective
Major 2/Minor	Major 2/Minor	Major 2/Minor	Major 2/Minor	Major 2/Minor	Major 2/Minor

### Bachelor of Science; Physics major

YEAR 1		YEAR 2		YEAR 3	
Physics 1 or 1A	Physics 1 or 1B	Physics 2A	Physics 2B	Quantum, Statistical and Comp Physics	Electrodynamics and Optics
OLE	Elective	Elective	Elective	Project* or Selective <sup>^</sup>	Project* or Selective <sup>^</sup>
Mathematics	Mathematics	OLE	Elective	Major 2/Elective	Major 2/Elective
Major 2/Minor	Major 2/Minor	Major 2/Minor	Major 2/Minor	Major 2/Minor	Major 2/Minor

\* The Interdisciplinary project is a core unit.

<sup>^</sup> Selective units: Condensed Matter and Particle Physics; Plasma and Astrophysics

### Bachelor of Science; Physiology major

YEAR 1		YEAR 2		YEAR 3	
Chemistry 1A* or Human Biology	Chemistry 1A* or From Molecules to Ecosystems	Key Concepts in Physiology	Integrative Physiology	Breadth units <sup>^</sup>	Breadth units <sup>^</sup>
OLE	Elective	Elective	Elective	Interdisciplinary Project	Specialisation <sup>#</sup>
Mathematics	Mathematics	OLE	Elective	Major 2/Elective	Major 2/Elective
Major 2/Minor	Major 2/Minor	Major 2/Minor	Major 2/Minor	Major 2/Minor	Major 2/Minor

\* Chemistry 1A is a core unit.

<sup>^</sup> Breadth: Frontiers in Cellular Physiology; Reproduction, Development and Disease; Cellular and Developmental Neuroscience; Neural Information Processing

<sup>#</sup> Specialisation units: Integrative Neuroscience; Physiology of Disease; Cells and Development: Theory

### Bachelor of Science; Plant Production major

YEAR 1		YEAR 2		YEAR 3	
Life and Evolution	From Molecules to Ecosystems	Plant Management in Agroecosystems	Plants and Environment	Plant Protection	Sustainable Plant Production (project)
OLE	Elective	Elective	Elective	Selective <sup>^</sup>	Selective <sup>^</sup>
Mathematics	Mathematics	OLE	Elective	Major 2/Elective	Major 2/Elective
Major 2/Minor	Major 2/Minor	Major 2/Minor	Major 2/Minor	Major 2/Minor	Major 2/Minor

<sup>^</sup> Selective units: Agroecosystems in Developing Countries; Applied Plant Function; Environmental GIS; Production Horticulture; Science Interdisciplinary Project

**Bachelor of Science; Psychology program**

YEAR 1		YEAR 2		YEAR 3	
Psychology	Psychology	Statistics and Research Methods for Psychology	Perception, Cognition and Intelligence	Psychology selective <sup>^</sup>	Psychology selective <sup>^</sup>
OLE	Elective	Brain and Behavioural Psychology	Personality and Social Psychology	Interdisciplinary project	Advanced Statistics for Psychology
Mathematics	Mathematics	OLE	Elective	Major 2/Elective	Major 2/Elective
Major 2/Minor	Major 2/Minor	Major 2/Minor	Major 2/Minor	Major 2/Minor	Major 2/Minor

<sup>^</sup> Third year selective units: Learning and Behaviour; Cognition, Language and Thought; Perceptual Systems; Behavioural and Cognitive Neuroscience; Personality and Intelligence 2; Developmental Psychology; Social Psychology; Abnormal Psychology; Applied Psychology; Psychology and Psychiatry: History and Philosophy

**Bachelor of Science; Psychological Science major**

YEAR 1		YEAR 2		YEAR 3	
Psychology	Psychology	Statistics and Research Methods for Psychology	Selective <sup>#</sup>	Selective <sup>^</sup>	Selective <sup>^</sup>
OLE	Elective	Elective	Selective <sup>#</sup>	Elective	Interdisciplinary Project
Mathematics	Mathematics	OLE	Elective	Major 2/Elective	Major 2/Elective
Major 2/Minor	Major 2/Minor	Major 2/Minor	Major 2/Minor	Major 2/Minor	Major 2/Minor

<sup>#</sup> Second year selective units: Brain and Behavioural Psychology; Perception, Cognition and Intelligence; Personality and Social Psychology

<sup>^</sup> Third year selective units: Advanced Statistics for Psychology; Learning and Behaviour; Cognition, Language and Thought; Perceptual Systems; Behavioural and Cognitive Neuroscience; Personality and Intelligence 2; Developmental Psychology; Social Psychology; Abnormal Psychology; Applied Psychology; Psychology and Psychiatry: History and Philosophy

**Bachelor of Science; Quantitative Life Sciences major**

YEAR 1		YEAR 2		YEAR 3	
Mathematics <sup>#</sup>	From Molecules to Ecosystems	Applied Statistical Methods or Molecular Systems Biology	Data Analytics: Learning from Data or Biology Experimental Design and Analysis or Cells	Statistics in the Natural Sciences or Molecular Systems Biology or Computational Systems	Interdisciplinary project
OLE	Science	Elective	Elective	Specialisation unit <sup>^</sup>	Specialisation unit <sup>^</sup>
Elective	Mathematics	OLE	Elective	Major 2/Elective	Major 2/Elective
Major 2/Minor	Major 2/Minor	Major 2/Minor	Major 2/Minor	Major 2/Minor	Major 2/Minor

<sup>#</sup> Mathematics units: Foundations of Data Science; Statistical Thinking with Data; Linear Algebra; Applications of Calculus; Mathematical Modelling; Introduction to Statistical Methods

<sup>^</sup> Specialisation units: Statistics in the Natural Sciences; Beyond the Genome; Environmental GIS; Hydrological Modelling and Monitoring; Interrogating Biomedical and Health Data Statistical Machine Learning; Computational Genomics; Gene Technology and Genomics

**Bachelor of Science; Software Development major**

YEAR 1		YEAR 2		YEAR 3	
Introduction to Programming	Object-Oriented Programming	Data Structures and Algorithms	Software Construction and Design 1	Software Construction and Design 2	Software Development Project
Elective	OLE	Elective	Agile Software Development Practices	Elective	Concurrency for Software Development
Mathematics	Mathematics	OLE	Elective	Major 2/Elective	Major 2/Elective
Major 2/Minor	Major 2/Minor	Major 2/Minor	Major 2/Minor	Major 2/Minor	Major 2/Minor

**Bachelor of Science; Soil Science and Hydrology major**

YEAR 1		YEAR 2		YEAR 3	
Life and Evolution	From Molecules to Ecosystems	Soil and Water: Earth's Life Support Systems	Earth Surface Processes	Environmental GIS	Hydrological Modelling and Monitoring
OLE	Elective	Elective	Elective	Selective <sup>^</sup>	Protecting the Soil Resource (project)
Mathematics	Mathematics	OLE	Elective	Major 2/Elective	Major 2/Elective
Major 2/Minor	Major 2/Minor	Major 2/Minor	Major 2/Minor	Major 2/Minor	Major 2/Minor

<sup>^</sup> Selective: Statistics in the Natural Sciences; Contemporary Field and Lab Soil Science; Science Interdisciplinary Project

**Bachelor of Science; Statistics major**

YEAR 1		YEAR 2		YEAR 3	
Mathematics <sup>^</sup>	Mathematics <sup>^</sup>	Probability and Estimation Theory	Data Analytics: Learning from Data or Statistical Tests	Applied Linear Models	Statistical Inference
Science	Science	Elective	Elective	Selective*	Interdisciplinary project
OLE	Elective	OLE	Elective	Major 2/Elective	Major 2/Elective
Major 2/Minor	Major 2/Minor	Major 2/Minor	Major 2/Minor	Major 2/Minor	Major 2/Minor

<sup>^</sup> 1000-level units include: calculus, statistics, linear algebra, and data science

\* Selective units: Stochastic Process; Time Series; Statistical Consulting