

# Bachelor of Science majors – Sample course plans

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## Introduction

This guide is a tool for staff and students to use when planning a Bachelor of Science. The guide shows multiple options for each of the Bachelor of Science majors with different focuses within the major and subjects that complement the major. The guide can be used to determine first semester subjects according to a student's secondary qualifications and map pre-requisite subjects that lead to a major.

### Key terms

**Major core** – a compulsory subject in a major.

**Major selective** - subjects within the major which are selected from a list. These may be from a core or elective list, but do not include any subject that is compulsory.

**Major core pre-requisite** – a pre-requisite for a compulsory subject in a major.

**Major selective pre-requisite** - – a pre-requisite for a selective subject in a major.

**Focus** – used to describe a set of elective subjects within a major that focus on a particular aspect of that discipline.

**Complementary sequence** – a recommended sequence of subjects taken outside of the major and subjects leading to the major.

### Key

MAJOR CORE	MAJOR SELECTIVE
MAJOR CORE PREREQUISITE	MAJOR SELECTIVE PREREQUISITE
RECOMMENDED	BREADTH

## 1. Agricultural Science

Agricultural Science major					
First Year	Semester 1	BIOL10004 Biology of Cells and Organisms	Science Elective	Science Elective	Breadth
	Semester 2	BIOL10005 Genetics & The Evolution of Life	Science Elective	Science Elective	Breadth
Second Year	Semester 1	DASC20010 Animal Physiology and Growth	AGRI20026 Plant Growth Processes	Science Elective	Breadth
	Semester 2	DASC20013 Topics in Animal Health	Science Elective	Science Elective	Breadth/Science
Third Year	Semester 1	AGRI30030 Livestock Production Systems	AGRI30032 Plant Health and Improvement	Science Elective	Breadth
	Semester 2	AGRI30003 Agricultural Systems Analysis	AGRI30031 Crop Production and Management	Science Elective	Breadth/Science

Mid-year intake					
First Year	Semester 2	BIOL10005 Genetics & The Evolution of Life	Science Elective	Science Elective	Breadth
	Semester 1	BIOL10004 Biology of Cells and Organisms	Science Elective	Science Elective	Breadth
Second Year	Semester 2	DASC20013 Topics in Animal Health	Science Elective	Science Elective	Breadth
	Semester 1	DASC20010 Animal Physiology and Growth	AGRI20026 Plant Growth Processes	Science Elective	Breadth/Science
Third Year	Semester 2	AGRI30003 Agricultural Systems Analysis	AGRI30031 Crop Production and Management	Science Elective	Breadth
	Semester 1	AGRI30030 Livestock Production Systems	AGRI30032 Plant Health and Improvement	Science Elective	Breadth/Science

**\*These sample study plans assume that students have undertaken VCE Units 3/4 Chemistry, or equivalent. If students have not completed this previously, they may first need to enrol in CHEM10007 Fundamentals of Chemistry in their first semester**

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MAJOR CORE PREREQUISITE	MAJOR SELECTIVE PREREQUISITE
RECOMMENDED	BREADTH

## 2. Animal Health & Disease

Veterinary Bioscience specialisation					
First Year	Semester 1	CHEM10003 Chemistry 1	BIOL10004 Biology of Cells and Organisms	PHYC10005 Physics 1: Fundamentals	Breadth
	Semester 2	CHEM10004 Chemistry 2	BIOL10005 Genetics & The Evolution of Life	Science Elective	Breadth
Second Year	Semester 1	VETS20014 Foundations of Animal Health 1	BCMB20002 Biochemistry and Molecular Biology	Science Elective	Breadth
	Semester 2	VETS20015 Foundations of Animal Health 2	Science Elective	Science Elective	Breadth/Science
Third Year	Semester 1	VETS30015 Veterinary Bioscience: Cells to Systems	VETS30016 Veterinary Bioscience: Digestive System	VETS30017 Veterinary Bioscience: Metab & Excretion	Breadth
	Semester 2	VETS30014 Veterinary Bioscience: Cardiovasc System	VETS30018 Veterinary Bioscience:Respiratory System	VETS30013 Animal Health in Production Systems	Breadth/Science

Animal Disease Biotechnology specialisation					
First Year	Semester 1	CHEM10003 Chemistry 1	BIOL10004 Biology of Cells and Organisms	Science Elective	Breadth
	Semester 2	CHEM10004 Chemistry 2	BIOL10005 Genetics & The Evolution of Life	Science Elective	Breadth
Second Year	Semester 1	VETS20014 Foundations of Animal Health 1	BCMB20002 Biochemistry and Molecular Biology	MIIM20001 Principles of Microbiology & Immunology	Breadth
	Semester 2	MIIM20002 Microbes, Infections and Responses	VETS20015 Foundations of Animal Health 2	Science Elective	Breadth/Science
Third Year	Semester 1	VETS30011 Animal Disease Biotechnology 1	VETS30015 Veterinary Bioscience: Cells to Systems	Science Elective	Breadth
	Semester 2	VETS30012 Animal Disease Biotechnology 2	MIIM30014 Medical Microbiology: Virology	Science Elective	Breadth/Science

Mid-year intake - Veterinary Bioscience specialisation					
First Year	Semester 2	CHEM10003 Chemistry 1	BIOL10005 Genetics & The Evolution of Life	Science Elective	Breadth
	Semester 1	CHEM10004 Chemistry 2 (summer)	BIOL10004 Biology of Cells and Organisms	Science Elective	Breadth
Second Year	Semester 2	BCMB20002 Biochemistry and Molecular Biology	Science Elective		Breadth
	Semester 1	VETS20014 Foundations of Animal Health 1	Science Elective		Breadth/Science
Third Year	Semester 2	VETS20015 Foundations of Animal Health 2	Science Elective		Breadth
	Semester 1	VETS30015 Veterinary Bioscience: Cells to Systems	VETS30016 Veterinary Bioscience: Digestive System	VETS30017 Veterinary Bioscience: Metab & Excretion	Breadth/Science
Fourth Year Year	Semester 2	VETS30014 Veterinary Bioscience: Cardiovasc System	VETS30018 Veterinary Bioscience:Respiratory System	VETS30013 Animal Health in Production Systems	

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MAJOR CORE PREREQUISITE	MAJOR SELECTIVE PREREQUISITE
RECOMMENDED	BREADTH

Mid-year intake - Animal Disease Biotechnology specialisation					
First Year	Semester 2	CHEM10003 Chemistry 1	BIOL10005 Genetics & The Evolution of Life	Science Elective	Breadth
	Summer Term	CHEM10004 Chemistry 2			
	Semester 1	BIOL10004 Biology of Cells and Organisms	PHYC10005 Physics 1: Fundamentals	Breadth	
Second Year	Semester 2	BCMB20002 Biochemistry and Molecular Biology	ECOL20003 Ecology	Science Elective	Breadth
	Semester 1	VETS20014 Foundations of Animal Health 1	Science Elective	Breadth/Science	
Third Year	Semester 2	VETS20015 Foundations of Animal Health 2	ZOOL30006 Animal Behaviour	Science Elective	Breadth
	Semester 1	VETS30015 Veterinary Bioscience: Cells to Systems	VETS30011 Animal Disease Biotechnology 1	Science Elective	Breadth/Science
Fourth Year	Semester 2	VETS30012 Animal Disease Biotechnology 2			

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MAJOR CORE PREREQUISITE	MAJOR SELECTIVE PREREQUISITE
RECOMMENDED	BREADTH

### 3. Animal Science & Management

Animal Science and Management major					
First Year	Semester 1	BIOL10004 Biology of Cells and Organisms	Science Elective	Science Elective	Breadth
	Semester 2	BIOL10005 Genetics & The Evolution of Life	Science Elective	Science Elective	Breadth
Second Year	Semester 1	DASC20010 Animal Physiology and Growth	AGRI20026 Plant Growth Processes	Science Elective	Breadth
	Semester 2	ZOOL20006 Comparative Animal Physiology	EVSC20002 Soil and Water Resources	Science Elective	Breadth/Science
Third Year	Semester 1	DASC30005 Applied Animal Behaviour	Science Elective	Science Elective	Breadth
	Semester 2	DASC30013 Animal Systems Analysis	DASC30015 Animal Welfare and Ethics	DASC30006 Applied Animal Reproduction & Genetics	Breadth/Science

Mid-year intake					
First Year	Semester 2	BIOL10005 Genetics & The Evolution of Life	Science Elective	Science Elective	Breadth
	Semester 1	BIOL10004 Biology of Cells and Organisms	Science Elective	Science Elective	Breadth
Second Year	Semester 2	DASC20010 Applied Animal Physiology	Science Elective	Science Elective	Breadth
	Semester 1	Science Elective	Science Elective	Science Elective	Breadth/Science
Third Year	Semester 2	DASC30013 Animal Systems Analysis	DASC30015 Animal Welfare and Ethics	AGRI30029 Ecology & Management of Grazing Systems	Breadth
	Semester 1	DASC30005 Applied Animal Behaviour	Science Elective	Science Elective	Breadth/Science

**\*These sample study plans assume that students have undertaken VCE Units 3/4 Chemistry, or equivalent. If students have not completed this previously, they may first need to enrol in CHEM10007 Fundamentals of Chemistry in their first semester**

MAJOR CORE	MAJOR SELECTIVE
MAJOR CORE PREREQUISITE	MAJOR SELECTIVE PREREQUISITE
RECOMMENDED	BREADTH

## 4. Biochemistry & Molecular Biology

Biochemistry and Molecular Biology major					
First Year	Semester 1	CHEM10003 Chemistry 1	Science Elective	Science Elective	Breadth
	Semester 2	CHEM10004 Chemistry 2	Science Elective	Science Elective	Breadth/Science Elective
Second Year	Semester 1	BCMB20005 Techniques in Molecular Science	Science Elective	Science Elective	Breadth
	Semester 2	BCMB20002 Biochemistry and Molecular Biology	Science Elective	Science Elective	Breadth
Third Year	Semester 1	BCMB30002 Functional Genomics and Bioinformatics	BCMB30010 Advanced Techniques in Molecular Science	Science Elective	Breadth/Science Elective
	Semester 2	BCMB30001 Protein Structure and Function	BCMB30004 Cell Signalling and Neurochemistry	Science Elective	Breadth

MID YEAR					
First Year	Semester 2	Science Elective	Science Elective	Science Elective	Breadth
	Semester 1	CHEM10003 Chemistry 1	Science Elective	Science Elective	Breadth/Science Elective
Second Year	Semester 2	CHEM10004 Chemistry 2	Science Elective	Science Elective	Breadth
	Semester 1	BCMB20002 Biochemistry and Molecular Biology	BCMB20005 Techniques in Molecular Science	Science Elective	Breadth
Third Year	Semester 2	BCMB30010 Advanced Techniques in Molecular Science	BCMB30001 Protein Structure and Function	Science Elective	Breadth/Science Elective
	Semester 1	BCMB30002 Functional Genomics and Bioinformatics	BCMB30003 Molecular Aspects of Cell Biology	Science Elective	Breadth

**\*These sample study plans assume that students have undertaken VCE Units 3/4 Chemistry, or equivalent. If students have not completed this previously, they may first need to enrol in CHEM10007 Fundamentals of Chemistry in their first semester.**

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MAJOR CORE PREREQUISITE	MAJOR SELECTIVE PREREQUISITE
RECOMMENDED	BREADTH

## 5. Bioengineering Systems

Bioengineering Systems Major					
First Year	Semester 1	MAST10006 Calculus 2	BIOL10004 Biology of Cells and Organisms*	ENGR10004 Engineering Systems Design 1	Breadth
	Semester 2	MAST10007 Linear Algebra	ENGR10003 Engineering Systems Design 2	CHEM10003 Chemistry 1*	Breadth
Second Year	Semester 1	BMEN20001 Biomechanical Physics & Computation	MAST20029 Engineering Mathematics	Science Elective	Breadth
	Semester 2	Science Elective	Science Elective	Science Elective	Breadth
Third Year	Semester 1	BMEN30005 Introduction to Biomechanics	BMEN30006 Circuits and Systems	Science Elective	Breadth/Science
	Semester 2	BMEN30007 Biotransport Processes	BMEN30008 Biosystems Design	Science Elective	Breadth/Science

\*CHEM10003 Chemistry 1 and BIOL10004 Biology of Cells and Organisms is a pre-requisite for Soft Matter Engineering BMEN90012, which from 2018 will be a core subject in the Masters of Engineering (Biomedical/ with Business)

Mid-year Intake					
First Year	Semester 2	MAST10006 Calculus 2	BIOL10004 Genetics and the Evolution of Life	ENGR10003 Engineering Systems Design 2	Breadth
	Semester 1	MAST10007 Linear Algebra	CHEM10003 Chemistry 1*	ENGR10004 Engineering Systems Design 1	BIOL10004 Biology of Cells and Organisms*
Second Year	Semester 2	MAST20029 Engineering Mathematics	Science Elective	Breadth	Breadth
	Semester 1	BMEN30006 Circuits and Systems	BMEN20001 Biomechanical Physics & Computation	Science Elective	Breadth
Third Year	Semester 2	BMEN30007 Biotransport Processes	BMEN30008 Biosystems Design	Science Elective	Breadth
	Semester 1	BMEN30005 Introduction to Biomechanics	Science Elective	Science Elective	Breadth/Science

**\*These sample study plans assume that students have achieved a study score of at least 29 in VCE Specialist Mathematics 3/4, or equivalent. If students have not completed this previously, they may first need to enrol in MAST10005 Calculus 1 in their first semester**

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## 6. Biotechnology

Agrifood Biotechnology specialisation					
First Year	Semester 1	BIOL10004 Biology of Cells and Organisms	CHEM10003 Chemistry 1	Science Elective	Breadth
	Semester 2	CHEM10004 Chemistry 2	Science Elective	Science Elective	Breadth
Second Year	Semester 1	BCMB20002 Biochemistry and Molecular Biology	BCMB20005 Techniques in Molecular Science	FOOD20003 Food Chemistry, Biology and Nutrition	Breadth/Science Elective
	Semester 2	Science Elective	Science Elective	Science Elective	Breadth
Third Year	Semester 1	BTCH30001 Methods in Agrifood Biotechnology	BTCH30002 Trends & Issues in Agrifood Biotechnology	BCMB30002 Functional Genomics and Bioinformatics	Breadth/Science Elective
	Semester 2	FOOD30010 Functional Foods	Science Elective	Science Elective	Breadth

Biomedical Biotechnology specialisation (Biochemistry stream)					
First Year	Semester 1	CHEM10003 Chemistry 1	Science Elective	Science Elective	Breadth
	Semester 2	CHEM10004 Chemistry 2	Science Elective	Science Elective	Breadth
Second Year	Semester 1	BCMB20002 Biochemistry and Molecular Biology	BCMB20005 Techniques in Molecular Science	Science Elective	Breadth/Science Elective
	Semester 2	Science Elective	Science Elective	Science Elective	Breadth
Third Year	Semester 1	BTCH30003 Biotechnology in Practice	BCMB30002 Functional Genomics and Bioinformatics	BCMB30010 Advanced Techniques in Molecular Science	Breadth/Science Elective
	Semester 2	BCMB30001 Protein Structure and Function	Science Elective	Science Elective	Breadth

Biomedical Biotechnology specialisation (Pharmacology stream)					
First Year	Semester 1	BIOL10004 Biology of Cells and Organisms	CHEM10003 Chemistry 1	Science Elective	Breadth
	Semester 2	BIOL10005 Genetics & the Evolution of Life	Science Elective	Science Elective	Breadth
Second Year	Semester 1	Science Elective	Science Elective	Science Elective	Breadth/Science Elective
	Semester 2	PHRM20001 Pharmacology: How Drugs Work	Science Elective	Science Elective	Breadth
Third Year	Semester 1	BTCH30003 Biotechnology in Practice	PHRM30008 Drugs: From Discovery to Market	Science Elective	Breadth/Science Elective
	Semester 2	PHRM30009 Drugs in Biomedical Experiments	PHRM30003 Drug Treatment of Disease	Science Elective	Breadth

MAJOR CORE	MAJOR SELECTIVE
MAJOR CORE PREREQUISITE	MAJOR SELECTIVE PREREQUISITE
RECOMMENDED	BREADTH

### Chemical Biotechnology

First Year	Semester 1	CHEM10003 Chemistry 1	Science Elective	Science Elective	Breadth
	Semester 2	CHEM10004 Chemistry 2	Science Elective	Science Elective	Breadth
Second Year	Semester 1	CHEM20018 Chemistry: Reactions and Synthesis	CHEM20011 Environmental Chemistry (selective)	Science Elective	Breadth/Science Elective
	Semester 2	CHEM20020 Chemistry: Structure and Properties	Science Elective	Science Elective	Breadth
Third Year	Semester 1	BTCH30003 Biotechnology in Practice	CHEM30016 Reactivity and Mechanism	Science Elective	Breadth/Science Elective
	Semester 2	CHEM30012 Analytical & Environmental Chemistry	CHEM30014 Specialised Topics in Chemistry B	Science Elective	Breadth

### Molecular Biotechnology specialisation (Cell and Developmental Biology stream)

First Year	Semester 1	BIOL10004 Biology of Cells and Organisms	Science Elective	Science Elective	Breadth
	Semester 2	BIOL10005 Genetics & the Evolution of Life	Science Elective	Science Elective	Breadth
Second Year	Semester 1	CEDB20003 Fundamentals of Cell Biology (CORE SELECTIVE)	GENE20001 Principles of Genetics	Science Elective	Breadth/Science Elective
	Semester 2	GENE20002 Genes and Genomes	Science Elective	Science Elective	Breadth
Third Year	Semester 1	BTCH30003 Biotechnology in Practice	CEDB30002 Concepts in Cell & Developmental Biology	GENE30002 Genes: Organisation and Function	Breadth/Science Elective
	Semester 2	BIOL30001 Reproductive Physiology	Science Elective	Science Elective	Breadth

### Molecular Biotechnology specialisation (Cell and Developmental Biology stream) (Mid-year entry)

First Year	Semester 2	BIOL10005 Genetics & the Evolution of Life	MAST10010 Data Analysis 1 (or CHEM1, PHYC1, PSYC1)	Science Elective	Breadth
	Semester 1	BIOL10004 Biology of Cells and Organisms	Science Elective	Science Elective	Breadth
Second Year	Semester 2	GENE20002 Genes and Genomes	Science Elective	Science Elective	Breadth/Science Elective
	Semester 1	GENE20001 Principles of Genetics	PHYS20009 Research-Based Physiology	Science Elective	Breadth
Third Year	Semester 2	BIOL30002 Experimental Reproductive Physiology	CEDB30003 Developmental Biology	Science Elective	Breadth/Science Elective
	Semester 1	BTCH30003 Biotechnology in Practice	CEDB30002 Concepts in Cell & Developmental Biology	Science Elective	Breadth

MAJOR CORE	MAJOR SELECTIVE
MAJOR CORE PREREQUISITE	MAJOR SELECTIVE PREREQUISITE
RECOMMENDED	BREADTH

Molecular Biotechnology specialisation (Genetics stream) (Mid-year entry)					
First Year	Semester 2	BIOL10005 Genetics & the Evolution of Life	Science Elective	Science Elective	Breadth
	Semester 1	BIOL10004 Biology of Cells and Organisms	Science Elective	Science Elective	Breadth
Second Year	Semester 2	GENE20003 Experiments in Genetics	GENE20002 Genes and Genomes	Science Elective	Breadth
	Semester 1	GENE20001 Principles of Genetics	Science Elective	Science Elective	Breadth
Third Year	Semester 2	GENE30004 Genetics Analysis	Science Elective	Science Elective	Breadth/Science Elective
	Semester 1	BTCH30003 Biotechnology in Practice	GENE30002 Genes: Organisation and Function	GENE30001 Evolutionary Genetics and Genomics	Breadth/Science Elective

Agrifood Biotechnology specialisation (Mid-year entry)					
First Year	Semester 2	CHEM10003 Chemistry 1	Science Elective	Science Elective	Breadth
	Semester 1	BIOL10004 Biology of Cells and Organisms		Science Elective	Breadth
	Summer	CHEM10004 Chemistry 2			
Second Year	Semester 2	Science Elective	BCMB20002 Biochemistry and Molecular Biology	Science Elective	Breadth
	Semester 1	FOOD20003 Food Chemistry, Biology and Nutrition	Science Elective	Science Elective	Breadth
Third Year	Semester 2	FOOD30010 Functional Foods	Science Elective	Science Elective	Breadth/Science Elective
	Semester 1	BTCH30001 Methods in Agrifood Biotechnology	BTCH30002 Trends and Issues in Agrifood Technology	BCMB30002 Functional Genomics and Bioinformatics	Breadth/Science Elective

Biomedical Biotechnology specialisation (Biochemistry stream) (Mid-year entry)					
First Year	Semester 2	CHEM10003 Chemistry 1	Science Elective	Science Elective	Breadth
	Semester 1		Science Elective	Science Elective	Breadth
		CHEM10004 Chemistry 2			
Second Year	Semester 2	BCMB20002 Biochemistry and Molecular Biology	Science Elective	Science Elective	Breadth
	Semester 1	BCMB20005 Techniques in Molecular Science	Science Elective	Science Elective	Breadth
Third Year	Semester 2	BCMB30001 Protein Structure and Function	BCMB30010 Advanced Techniques in Molecular Science	Science Elective	Breadth/Science Elective
	Semester 1	BTCH30003 Biotechnology in Practice	BCMB30002 Functional Genomics and Bioinformatics	Science Elective	Breadth/Science Elective

MAJOR CORE	MAJOR SELECTIVE
MAJOR CORE PREREQUISITE	MAJOR SELECTIVE PREREQUISITE
RECOMMENDED	BREADTH

Biomedical Biotechnology specialisation (Microbiology and Immunology Stream) (Mid-year entry)					
First Year	Semester 2	BIOL10005 Genetics and the Evolution of Life	Science Elective	Science Elective	Breadth
	Semester 1	BIOL10004 Biology of Cells and Organisms	Science Elective	Science Elective	Breadth
Second Year	Semester 2	Science Elective	Science Elective	Science Elective	Breadth
	Semester 1	MIIM20001 Principles of Microbiology and Immunology	Science Elective	Breadth	
Third Year	Semester 2	MIIM20002 Microbes, Infections and Responses	Science Elective	Breadth/Science Elective	
	Semester 1	BTCH30003 Biotechnology in Practice	MIIM30002 Principles of Immunology	MIIM30011 Medical Microbiology: Bacteriology	
Fourth Year	Semester 2	MIIM30015 Techniques in Immunology	Science Elective	Breadth/Science Elective	

Biomedical Biotechnology specialisation (Pharmacology stream) (Mid-year entry)					
First Year	Semester 2	CHEM10003 Chemistry 1	BIOL10005 Genetics and the Evolution of Life	Science Elective	Breadth
	Semester 1	BIOL10004 Biology of Cells and Organisms	Science Elective	Science Elective	Breadth
Second Year	Semester 2	PHRM20001 Pharmacology: How Drugs Work	Science Elective	Science Elective	Breadth
	Semester 1	Science Elective	Science Elective	Science Elective	Breadth
Third Year	Semester 2	PHRM30009 Drugs in Biomedical Experiments	PHRM30003 Drug Treatment of Disease	Science Elective	Breadth/Science Elective
	Semester 1	BTCH30003 Biotechnology in Practice	PHRM30008 Drugs: From Discovery to Market	Science Elective	Breadth/Science Elective

Chemical Biotechnology specialisation (Mid-year entry)					
First Year	Semester 2	Science Elective	Science Elective	Science Elective	Breadth
	Semester 1	CHEM10003 Chemistry 1		Science Elective	Breadth
Second Year	Summer	CHEM10004 Chemistry 2			
	Semester 2	CHEM20020 Chemistry: Structure and Properties	CHEM20019 Practical Chemistry 2	Science Elective	Breadth
	Semester 1	CHEM20018 Chemistry: Reactions and Synthesis	CHEM20011 Environmental Chemistry	Science Elective	Breadth
Third Year	Semester 2	CHEM30012 Analytical and Environmental Chemistry	Science Elective	Science Elective	Breadth/Science Elective
	Semester 1	BTCH30003 Biotechnology in Practice	CHEM30016 Reactivity and Mechanism	CHEM30017 Specialised Topics in Chemistry A	Breadth/Science Elective

MAJOR CORE	MAJOR SELECTIVE
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RECOMMENDED	BREADTH

## 7. Cell & Developmental Biology

Reproduction and Development					
First Year	Semester 1	BIOL10004 Biology of Cells and Organisms	CHEM10003 Chemistry 1	Science Elective	Breadth
	Semester 2	BIOL10005 Genetics & The Evolution of Life	CHEM10004 Chemistry 2	Science Elective	Breadth/Science Elective
Second Year	Semester 1	CEDB20003 Fundamentals of Cell Biology	GENE20001 Principles of Genetics	Science Elective	Breadth
	Semester 2	BCMB20002 Biochemistry and Molecular Biology	Science Elective	Science Elective	Breadth
Third Year	Semester 1	CEDB30002 Concepts in Cell & Developmental Biology	BCMB30003 Molecular Aspects of Cell Biology	Science Elective	Breadth/Science Elective
	Semester 2	CEDB30003 Developmental Biology	BIOL30001 Reproductive Physiology	Science Elective	Breadth

Animal Cell Biology					
First Year	Semester 1	BIOL10004 Biology of Cells and Organisms	CHEM10003 Chemistry 1	Science Elective	Breadth
	Semester 2	BIOL10005 Genetics & The Evolution of Life	CHEM10004 Chemistry 2	Science Elective	Breadth/Science Elective
Second Year	Semester 1	CEDB20003 Fundamentals of Cell Biology	BCMB20005 Techniques in Molecular Science (recommended)	Science Elective	Breadth
	Semester 2	BCMB20002 Biochemistry and Molecular Biology	ZOOL20006 Comparative Animal Physiology	Science Elective	Breadth
Third Year	Semester 1	CEDB30002 Concepts in Cell & Developmental Biology	BCMB30003 Molecular Aspects of Cell Biology	MIIM30002 Principles of Immunology	Breadth/Science Elective
	Semester 2	CEDB30003 Developmental Biology	Science Elective	Science Elective	Breadth

Plant Cell Biology & Development					
First Year	Semester 1	BIOL10004 Biology of Cells and Organisms	Science Elective	Science Elective	Breadth
	Semester 2	BIOL10005 Genetics & The Evolution of Life	Science Elective	Science Elective	Breadth/Science Elective
Second Year	Semester 1	CEDB20003 Fundamentals of Cell Biology	BOTA20001 Green Planet: Plants and the Environment	Science Elective	Breadth
	Semester 2	Science Elective	Science Elective	Science Elective	Breadth
Third Year	Semester 1	CEDB30002 Concepts in Cell & Developmental Biology	BOTA30003 Environmental Plant Physiology	Science Elective	Breadth/Science Elective
	Semester 2	BOTA30005 Plant Molecular Biology & Biotechnology	CEDB30004 Stem Cells in Development & Regeneration	Science Elective	Breadth

MAJOR CORE	MAJOR SELECTIVE
MAJOR CORE PREREQUISITE	MAJOR SELECTIVE PREREQUISITE
RECOMMENDED	BREADTH

MID YEAR - Reproduction and Development					
First Year	Semester 2	BIOL10005 Genetics & The Evolution of Life	Science Elective	Science Elective	Breadth
	Semester 1	BIOL10004 Biology of Cells and Organisms	CHEM10003 Chemistry 1	Science Elective	Breadth
Second Year	Semester 2	CHEM10004 Chemistry 2	Science Elective	Science Elective	Breadth/Science Elective
	Semester 1	CEDB20003 Fundamentals of Cell Biology	BOTA20001 Green Planet: Plants and the Environment	GENE20001 Principles of Genetics	BCMB20002 Biochemistry and Molecular Biology
Third Year	Semester 2	CEDB30003 Developmental Biology	BIOL30001 Reproductive Physiology	Science Elective	Breadth
	Semester 1	CEDB30002 Concepts in Cell & Developmental Biology	BCMB30003 Molecular Aspects of Cell Biology	Breadth	Breadth/Science Elective

**\*These sample study plans assume that students have undertaken VCE Units 3/4 Chemistry, or equivalent. If students have not completed this previously, they may first need to enrol in CHEM10007 Fundamentals of Chemistry in their first semester.**

MAJOR CORE	MAJOR SELECTIVE
MAJOR CORE PREREQUISITE	MAJOR SELECTIVE PREREQUISITE
RECOMMENDED	BREADTH

## 8. Chemical Systems

Chemical Systems Major					
First Year	Semester 1	MAST10006 Calculus 2	CHEM10003 Chemistry 1	ENGR10004 Engineering Systems Design 1	Breadth
	Semester 2	MAST10007 Linear Algebra	CHEM10004 Chemistry 2	Science Elective	Breadth
Second Year	Semester 1	MAST20029 Engineering Mathematics	CHEM20018 Chemistry: Reactions and Synthesis	Science Elective	Breadth
	Semester 2	CHEN20009 Transport Processes	CHEN20011 Chemical Process Analysis	CHEN20010 Material and Energy Balances	Breadth/Science
Third Year	Semester 1	CHEN30001 Reactor Engineering	CHEN30005 Heat and Mass Transport Processes	Science Elective	Breadth
	Semester 2	CHEN30015 Process Engineering Case Studies	ENGR30002 Fluid Mechanics	Science Elective	Breadth/Science

Mid-year Intake					
First Year	Semester 2	MAST10006 Calculus 2	CHEM10003 Chemistry 1	Science Elective	Breadth
	Summer Term	CHEM10004 Chemistry 2			
	Semester 1	MAST10007 Linear Algebra			
Second Year	Semester 2	CHEN20010 Material and Energy Balances	CHEN20009 Transport Processes	CHEN20011 Chemical Processes Analysis	Breadth
	Semester 1	CHEN30001 Reactor Engineering	CHEN20018 Chemistry: Reactions and Synthesis	MAST20029 Engineering Mathematics	Breadth/Science
Third Year	Semester 2	CHEN30015 Process Engineering Case Studies	CHEN30005 Heat & Mass Transport Processes	Science Elective	Breadth
	Semester 1	ENGR30002 Fluid Mechanics	Science Elective	Science Elective	Breadth/Science

\*These sample study plans assume that students have achieved a study score of at least 29 in VCE Specialist Mathematics 3/4 and VCE Units 3/4 Chemistry, or equivalent. If students have not completed this previously, they may first need to enrol in MAST10005 Calculus 1 and/or CHEM10007 Fundamentals of Chemistry in their first semester

MAJOR CORE	MAJOR SELECTIVE
MAJOR CORE PREREQUISITE	MAJOR SELECTIVE PREREQUISITE
RECOMMENDED	BREADTH

## 9. Chemistry

Chemistry Major, Chemistry specialisation					
First Year	Semester 1	CHEM10003 Chemistry 1	Science Elective	Science Elective	Breadth
	Semester 2	CHEM10004 Chemistry 2	Science Elective	Science Elective	Breadth
Second Year	Semester 1	CHEM20018 Chemistry: Reactions and Synthesis	Science Elective	Science Elective	Breadth
	Semester 2	CHEM20020 Chemistry: Structures and Properties	CHEM20019 Practical Chemistry 2	Science Elective	Breadth/Science Elective
Third Year	Semester 1	CHEM30016 Reactivity and Mechanism	CHEM30015 Advanced Practical Chemistry	Science Elective	Breadth
	Semester 2	CHEM30014 Specialised Topics in Chemistry B	CHEM30012 Analytical and Environmental Chemistry	Science Elective	Breadth/Science Elective

Chemistry Major, Medicinal Chemistry specialisation					
First Year	Semester 1	CHEM10003 Chemistry 1	BIOL10004 Biology of Cells and Organisms	Science Elective	Breadth
	Semester 2	CHEM10004 Chemistry 2	BIOL10005 Genetics and the Evolution of Life	Science Elective	Breadth
Second Year	Semester 1	CHEM20018 Chemistry: Reactions and Synthesis	Science Elective	Science Elective	Breadth
	Semester 2	CHEM20020 Chemistry: Structures and Properties	CHEM20019 Practical Chemistry 2	PHRM20001 Pharmacology: How Drugs Work	Breadth/Science Elective
Third Year	Semester 1	CHEM30016 Reactivity and Mechanism	CHEM30015 Advanced Practical Chemistry	PHRM30008 Drugs: From Discovery to Market	Breadth
	Semester 2	Science Elective	Science Elective	PHRM30009 Drugs in Biomedical Experiments	Breadth/Science Elective

Chemistry Major, Chemistry specialisation (mid-year entry)					
First Year	Semester 2	CHEM10003 Chemistry 1	Science Elective	Science Elective	Breadth
	Summer	CHEM10004 Chemistry 2			
	Semester 1	Science Elective	Science Elective	Breadth	
Second Year	Semester 2	CHEM20020 Chemistry: Structures and Properties	CHEM20019 Practical Chemistry 2	Science Elective	Breadth
	Semester 1	CHEM20018 Chemistry: Reactions and Synthesis	CHEM20011 Environmental Chemistry	Science Elective	Breadth/Science Elective
Third Year	Semester 2	CHEM30012 Analytical and Environmental Chemistry	Science Elective	Science Elective	Breadth
	Semester 1	CHEM30016 Reactivity and Mechanism	CHEM30015 Advanced Practical Chemistry	CHEM30017 Specialised Topics in Chemistry A	Breadth/Science Elective

MAJOR CORE	MAJOR SELECTIVE
MAJOR CORE PREREQUISITE	MAJOR SELECTIVE PREREQUISITE
RECOMMENDED	BREADTH



Chemistry Major, Medicinal Chemistry specialisation (mid-year entry)					
First Year	Semester 2	CHEM10003 Chemistry 1	BIOL10005 Genetics and the Evolution of Life	Science Elective	Breadth
	Summer	CHEM10004 Chemistry 2			
	Semester 1		BIOL10004 Biology of Cells and Organisms	Science Elective	Breadth
Second Year	Semester 2	CHEM20020 Chemistry: Structures and Properties	CHEM20019 Practical Chemistry 2	PHRM20001 Pharmacology: How Drugs Work	Breadth
	Semester 1	CHEM20018 Chemistry: Reactions and Synthesis	Science Elective	Science Elective	Breadth/Science Elective
Third Year	Semester 2	PHRM30009 Drugs in Biomedical Experiments	Science Elective	Science Elective	Breadth
	Semester 1	CHEM30016 Reactivity and Mechanism	CHEM30015 Advanced Practical Chemistry	PHRM30008 Drugs: From Discovery to Market	Breadth/Science Elective

**\*These sample study plans assume that students have undertaken VCE Units 3/4 Chemistry, or equivalent. If students have not completed this previously, they may first need to enrol in CHEM10007 Fundamentals of Chemistry in their first semester**

MAJOR CORE	MAJOR SELECTIVE
MAJOR CORE PREREQUISITE	MAJOR SELECTIVE PREREQUISITE
RECOMMENDED	BREADTH

## 10. Civil Systems

Civil Systems Major					
First Year	Semester 1	MAST10006 Calculus 2	ENGR10004 Engineering Systems Design 1	Science Elective	Breadth
	Semester 2	MAST10007 Linear Algebra	ENGR10003 Engineering Systems Design 2	Science Elective	Breadth
Second Year	Semester 1	ENGR20004 Engineering Mechanics	MAST20029 Engineering Mathematics	Science Elective	Breadth
	Semester 2	ENEN20002 Earth Processes for Engineering	ENGR20003 Engineering Materials	Science Elective	Breadth/Science Elective
Third Year	Semester 1	CVEN30008 Engineering Risk Analysis	ENGR30002 Fluid Mechanics	Science Elective	Breadth
	Semester 2	CVEN30010 Systems Modelling and Design	CVEN30009 Structural Theory and Design	Science Elective	Breadth/Science Elective

Mid-year Intake					
First Year	Semester 2	MAST10006 Calculus 2	ENGR10003 Engineering Systems Design 2	Science Elective	Breadth
	Semester 1	MAST10007 Linear Algebra	ENGR10004 Engineering Systems Design 1	Science Elective	Breadth
Second Year	Semester 2	MAST20029 Engineering Mathematics	ENGR20003 Engineering Materials	Science Elective	Breadth
	Semester 1	ENGR30002 Fluid Mechanics	ENGR20004 Engineering Mechanics	ENEN20002 Earth Processes for Engineering	Breadth/Science Elective
Third Year	Semester 2	CVEN30010 Systems Modelling and Design	CVEN30009 Structural Theory and Design	Science Elective	Breadth
	Semester 1	CVEN30008 Engineering Risk Analysis	Science Elective	Science Elective	Breadth/Science Elective

**\*These sample study plans assume that students have achieved a study score of at least 29 in VCE Specialist Mathematics 3/4, or equivalent. If students have not completed this previously, they may first need to enrol in MAST10005 Calculus 1 in their first semester**

MAJOR CORE	MAJOR SELECTIVE
MAJOR CORE PREREQUISITE	MAJOR SELECTIVE PREREQUISITE
RECOMMENDED	BREADTH

## 11. Climate & Weather

Climate and Weather Major					
First Year	Semester 1	EVSC10001 The Global Environment	MAST10006 Calculus 2	Science Elective	Breadth
	Semester 2	ATOC10001 Wonders of the Weather	MAST10007 Linear Algebra	Science Elective	Breadth
Second Year	Semester 1	ATOC20001 Weather and Climate Systems	MAST20009 Vector Calculus	Science Elective	Breadth
	Semester 2	ERTH20003 Past Climates: Icehouse to Greenhouse	Science Elective	Science Elective	Breadth
Third Year	Semester 1	ATOC30004 Dynamical Meteorology and Oceanography	ATOC30008 Atmospheric Processes and Composition	Science Elective	Breadth or science elective
	Semester 2	ATOC30006 Modern and Future Climate	ATOC30003 Atmosphere Ocean Interaction	Science Elective	Breadth or science elective

Climate and Weather Major (mid-year entry)					
First Year	Semester 2	ATOC10001 Wonders of the Weather	MAST10006 Calculus 2	Science Elective	Breadth
	Semester 1	EVSC10001 The Global Environment	MAST10007 Linear Algebra	ATOC20001 Weather and Climate Systems	Breadth
Second Year	Semester 2	MAST20009 Vector Calculus	ERTH20003 Past Climates: Icehouse to Greenhouse	Science Elective	Breadth
	Semester 1	ATOC30004 Dynamical Meteorology and Oceanography	ATOC30008 Atmospheric Processes and Composition	Science Elective	Breadth
Third Year	Semester 2	ATOC30006 Modern and Future Climate	ATOC30003 Atmosphere Ocean Interaction	Science Elective	Breadth or science elective
	Semester 1	Science Elective	Science Elective	Science Elective	Breadth or science elective

**\*These sample study plans assume that students have achieved a study score of at least 29 in VCE Specialist Mathematics 3/4, or equivalent. If students have not completed this previously, they may first need to enrol in MAST10005 Calculus 1 in their first semester**

MAJOR CORE	MAJOR SELECTIVE
MAJOR CORE PREREQUISITE	MAJOR SELECTIVE PREREQUISITE
RECOMMENDED	BREADTH

## 12. Computational Biology

Computational Biology major					
First Year	Semester 1	MAST10006 Calculus 2	CHEM10009 Chemistry for Biosciences	COMP10001 Foundations of Computing	Breadth or Science Elective
	Semester 2	BIOL10005 Genetics and the Evolution of Life	MAST10010 Data Analysis 1*	COMP10002 Foundations of Algorithms	MAST10007 Linear Algebra
Second Year	Semester 1	GENE20001 Principles of Genetics	COMP20008 Elements of Data Processing	Science Elective	Breadth
	Semester 2	BCMB20002 Biochemistry and Molecular Biology	Science Elective	Breadth or Science Elective	Breadth
Third Year	Semester 1	MAST30032 Biological Modelling and Simulation	CEDB30002 Concepts in Cell and Developmental Biology	Science Elective	Breadth
	Semester 2	BIOL30003 Case Studies in Computational Biology	MAST30033 Statistical Genomics	Science Elective	Breadth

Computational Biology major (mid-year entry)					
First Year	Semester 2	COMP10001 Foundations of Computing	BIOL10005 Genetics and the Evolution of Life	MAST10006 Calculus 2	Breadth
	Semester 1	COMP10002 Foundations of Algorithms	MAST10007 Linear Algebra	CHEM10009 Chemistry for Biosciences	
Second Year	Semester 2	BCMB20002 Biochemistry and Molecular Biology	MAST10010 Data Analysis 1*	Breadth or Science Elective	Breadth
	Semester 1	COMP20008 Elements of Data Processing	GENE20001 Principles of Genetics	Breadth or Science Elective	
Third Year	Semester 2	Science Elective	Breadth	Breadth	
	Semester 1	MAST30032 Biological Modelling and Simulation	CEDB30002 Concepts in Cell and Developmental Biology	Science Elective	
Fourth Year	Semester 2	BIOL30003 Case Studies in Computational Biology	MAST30033 Statistical Genomics	Science Elective	

**\*These sample study plans assume that students have achieved a study score of at least 29 in VCE Specialist Mathematics 3/4 and a study score of at least 35 VCE Units 3/4 Chemistry, or equivalent. If students have not completed this previously, they may first need to enrol in CHEM10007 Fundamentals of Chemistry or CHEM10003 Chemistry 1, and MAST10005 Calculus 1 in their first semester**

MAJOR CORE	MAJOR SELECTIVE
MAJOR CORE PREREQUISITE	MAJOR SELECTIVE PREREQUISITE
RECOMMENDED	BREADTH

## 13. Computing & Software Systems

Computing and Software Systems Major					
First Year	Semester 1	COMP10001 Foundations of Computing	MAST10006 Calculus 2	Science elective	Breadth
	Semester 2	COMP10002 Foundations of Algorithms	MAST10007 Linear Algebra	Science elective	Breadth
Second Year	Semester 1	COMP20007 Design of Algorithms	Science elective	Science elective	Breadth
	Semester 2	INFO20003 Database Systems	SWEN20003 Object Oriented Software Development	Science elective	Breadth
Third Year	Semester 1	SWEN30006 Software Modelling and Design	COMP30023 Computer Systems	Science elective	Breadth/Science
	Semester 2	COMP30022 IT Project	COMP30026 Models of Computation	Science elective	Breadth/Science

Mid-year Intake					
First Year	Semester 2	COMP10001 Foundations of Computing	MAST10005 Calculus 1	Science elective	Breadth
	Semester 1	COMP10002 Foundations of Algorithms	MAST10006 Calculus 2	Science elective	Breadth
Second Year	Semester 2	SWEN20003 Object Oriented Software Development	INFO20003 Database Systems	COMP20003 Algorithms and Data Structures	Breadth
	Semester 1	SWEN30006 Software Modelling and Design	Science elective	Science elective	Science/Breadth
Third Year	Semester 2	COMP30022 IT Project	COMP30026 Models of Computation	Science elective	Breadth
	Semester 1	COMP30023 Computer Systems	Science elective	Science elective	Science/Breadth

**\*These sample study plans assume that students have achieved a study score of at least 29 in VCE Specialist Mathematics 3/4, or equivalent. If students have not completed this previously, they may first need to enrol in MAST10005 Calculus 1 in their first semester**

MAJOR CORE	MAJOR SELECTIVE
MAJOR CORE PREREQUISITE	MAJOR SELECTIVE PREREQUISITE
RECOMMENDED	BREADTH

## 14. Data Science

Data Science major					
First Year	Semester 1	MAST10006 Calculus 2	COMP10001 Foundations of Computing	Science Elective	Breadth
	Semester 2	MAST10007 Linear Algebra	COMP10002 Foundations of Algorithms	Science Elective	Breadth
Second Year	Semester 1	MAST20004 Probability	COMP20008 Elements of Data Processing	Science Elective	Breadth or Science Elective
	Semester 2	MAST20005 Statistics	Science Elective	Science Elective	Breadth
Third Year	Semester 1	MAST30025 Linear Statistical Models	COMP30027 Machine Learning	Science Elective	Breadth or Science Elective
	Semester 2	MAST30027 Modern Applied Statistics	MAST30034 Applied Data Science	Science Elective	Breadth

Data Science major (mid-year)					
First Year	Semester 2	MAST10006 Calculus 2	COMP10001 Foundations of Computing	Science Elective	Breadth
	Semester 1	MAST10007 Linear Algebra	COMP10002 Foundations of Algorithms	Science Elective	Breadth
Second Year	Semester 2	Science Elective	Science Elective	Science Elective	Breadth or Science Elective
	Semester 1	MAST20004 Probability	COMP20008 Elements of Data Processing	Breadth	
Third Year	Semester 2	MAST20005 Statistics	Science Elective	Breadth	
	Semester 1	MAST30025 Linear Statistical Models	COMP30027 Machine Learning	Breadth or Science Elective	
Fourth Year	Semester 2	MAST30027 Modern Applied Statistics	MAST30034 Applied Data Science	Science Elective	

**\*These sample study plans assume that students have achieved a study score of at least 29 in VCE Specialist Mathematics 3/4, or equivalent. If students have not completed this previously, they may first need to enrol in MAST10005 Calculus 1 in their first semester.**

MAJOR CORE	MAJOR SELECTIVE
MAJOR CORE PREREQUISITE	MAJOR SELECTIVE PREREQUISITE
RECOMMENDED	BREADTH

## 15. Ecology & Evolutionary Biology

Ecology and Evolutionary Biology major (Zoology focus)					
First Year	Semester 1	BIOL10004 Biology of Cells and Organisms	Science Elective	Science Elective	Breadth
	Semester 2	Science Elective	Science Elective	Science Elective	Breadth
Second Year	Semester 1	Science Elective	Science Elective	Science Elective	Breadth/Science Elective
	Semester 2	ECOL20003 Ecology	ZOOL20006 Comparative Animal Physiology	Science Elective	Breadth
Third Year	Semester 1	ECOL30006 Ecology in Changing Environments	ZOOL30006 Animal Behaviour	ZOOL30004 Evolution and the Human Condition	Breadth/Science Elective
	Semester 2	ZOOL30009 Field Biology of Australian Wildlife	Science Elective	Science Elective	Breadth

Ecology and Evolutionary Biology major (Environmental Science focus)					
First Year	Semester 1	BIOL10004 Biology of Cells and Organisms	MAST10005 Calculus 1	Science Elective	Breadth
	Semester 2	BIOL10005 Genetics & the Evolution of Life	Science Elective	Science Elective	Breadth
Second Year	Semester 1	Science Elective	Science Elective	Science Elective	Breadth/Science Elective
	Semester 2	ECOL20003 Ecology	BOTA20002 Plant Biodiversity	Science Elective	Breadth
Third Year	Semester 1	ECOL30006 Ecology in Changing Environments	GEOG30022 River Ecology & Ecosystem Management (quota)	EVSC30003 Environmental Risk Assessment	Breadth/Science Elective
	Semester 2	BOTA30002 Plant Evolution	Science Elective	Science Elective	Breadth

Ecology and Evolutionary Biology major (Mid-year entry)					
First Year	Semester 2	BIOL10005 Genetics & the Evolution of Life	MAST10005 Calculus 1	Science Elective	Breadth
	Semester 1	BIOL10004 Biology of Cells and Organisms	Science Elective	Science Elective	Breadth
Second Year	Semester 2	ECOL20003 Ecology	BOTA20002 Plant Biodiversity	Science Elective	Breadth/Science Elective
	Semester 1	ZOOL20005 Animal Structure and Function	Science Elective	Science Elective	Breadth
Third Year	Semester 2	BOTA30002 Plant Evolution	ZOOL30009 Field Biology of Australian Wildlife	Science Elective	Breadth/Science Elective
	Semester 1	ECOL30006 Ecology in Changing Environments	EVSC30003 Environmental Risk Assessment	Science Elective	Breadth

MAJOR CORE	MAJOR SELECTIVE
MAJOR CORE PREREQUISITE	MAJOR SELECTIVE PREREQUISITE
RECOMMENDED	BREADTH

## 16. Electrical Systems

Electrical Systems Major					
First Year	Semester 1	MAST10006 Calculus 2	PHYC10003 Physics 1	ENGR10004 Engineering Systems Design 1	Breadth
	Semester 2	MAST10007 Linear Algebra	PHYC10004 Physics 2: Physical Science & Technology	ENGR10003 Engineering Systems Design 2	Breadth
Second Year	Semester 1	MAST20029 Engineering Mathematics	BMEN20001 Biochemical Physics & Computation	Science Elective	Breadth
	Semester 2	ELEN20005 Foundations of Electrical Networks	Science Elective	Science Elective	Breadth/Science Elective
Third Year	Semester 1	ELEN30009 Electrical Network Analysis and Design	ELEN30010 Digital System Design	Science Elective	Breadth
	Semester 2	ELEN30011 Electrical Device Modelling	ELEN30012 Signals and Systems	Science Elective	Breadth/Science Elective

Mid-year Intake					
First Year	Semester 2	MAST10006 Calculus 2	PHYC10004 Physics 2: Physical Science & Technology	ENGR10003 Engineering Systems Design 2	Breadth
	Semester 1	MAST10007 Linear Algebra	PHYC10003 Physics 1	ENGR10004 Engineering Systems Design 1	Breadth
Second Year	Semester 2	MAST20029 Engineering Mathematics	ELEN20005 Foundations of Electrical Networks	Science Elective	Breadth
	Semester 1	BMEN20001 Biochemical Physics & Computation	Science Elective	Science Elective	Breadth/Science Elective
Third Year	Semester 2	ELEN30011 Electrical Device Modelling	ELEN30012 Signals and Systems	Science Elective	Breadth
	Semester 1	ELEN30009 Electrical Network Analysis and Design	ELEN30010 Digital System Design	Science Elective	Breadth/Science Elective

**\*These sample study plans assume that students have achieved a study score of at least 29 in VCE Specialist Mathematics 3/4 and VCE Units 3/4 Physics, or equivalent. If students have not completed this previously, they may first need to enrol in MAST10005 Calculus 1 and/or PHYC10005 Physics 1: Fundamentals in their first semester**

MAJOR CORE	MAJOR SELECTIVE
MAJOR CORE PREREQUISITE	MAJOR SELECTIVE PREREQUISITE
RECOMMENDED	BREADTH



## 17. Environmental Engineering Systems

Environmental Engineering Systems					
First Year	Semester 1	MAST10006 Calculus 2	ENGR10004 Engineering Systems Design 1	BIOL10004 Biology of Cells and Organisms	Breadth
	Semester 2	MAST10007 Linear Algebra	ENGR10003 Engineering Systems Design 2	BIOL10005 Genetics & The Evolution of Life	Breadth
Second Year	Semester 1	MAST20029 Engineering Mathematics	MAST20031 Analysis of Biological Data	Science elective	Breadth/Science elective
	Semester 2	ENEN20002 Earth Processes for Engineering	Science elective	Science elective	Breadth
Third Year	Semester 1	ENGR30002 Fluid Mechanics	Science elective	Science elective	Breadth
	Semester 2	BMEN30007 Biotransport Processes	ENEN30001 Environmental Eng Systems Capstone	CVEN30010 Systems Modelling and Design	Breadth/Science elective

Mid-Year entry					
First Year	Semester 2	MAST10006 Calculus 2	ENGR10003 Engineering Systems Design 2	BIOL10005 Genetics & The Evolution of Life	Breadth
	Semester 1	MAST10007 Linear Algebra	ENGR10004 Engineering Systems Design 1	BIOL10004 Biology of Cells and Organisms	Breadth
Second Year	Semester 2	ENEN20002 Earth Processes for Engineering	MAST20029 Engineering Mathematics	Science elective	Breadth
	Semester 1	MAST20031 Analysis of Biological Data	ENGR30002 Fluid Mechanics	Science elective	Breadth/Science elective
Third Year	Semester 2	BMEN30007 Biotransport Processes	ENEN30001 Environmental Eng Systems Capstone	CVEN30008 Engineering Risk Analysis	Breadth
	Semester 1	Science elective	Science elective	Science elective	Breadth/Science elective

**\*These sample study plans assume that students have achieved a study score of at least 29 in VCE Specialist Mathematics 3/4, or equivalent. If students have not completed this previously, they may first need to enrol in MAST10005 Calculus 1 in their first semester**

MAJOR CORE	MAJOR SELECTIVE
MAJOR CORE PREREQUISITE	MAJOR SELECTIVE PREREQUISITE
RECOMMENDED	BREADTH

## 18. Environmental Science

Environmental Science major (Professional tools for environmental monitoring focus)					
First Year	Semester 1	MAST10010 Data Analysis 1	CHEM10003 Chemistry 1	EVSC10001 The Global Environment	Breadth
	Semester 2	ERTH10002 Understanding Planet Earth	Science Elective	Science Elective	Breadth
Second Year	Semester 1	GEOL20003 Earth Composition, Minerals and Magmas	Science Elective	Science Elective	Breadth/Science Elective
	Semester 2	Science Elective	Science Elective	Science Elective	Breadth
Third Year	Semester 1	EVSC30003 Environmental Risk Assessment	GEOM30009 Imaging the Environment	ERTH30001 Hydrogeology/Environmental Geochemistry	Breadth/Science Elective
	Semester 2	EVSC30002 Problem Solving in Environmental Science	Science Elective	Science Elective	Breadth

Environmental Science major (Chemistry in the Environment focus)					
First Year	Semester 1	MAST10010 Data Analysis 1	CHEM10003 Chemistry 1	EVSC10001 The Global Environment	Breadth
	Semester 2	ERTH10002 Understanding Planet Earth	BIOL10001 Biology of Australian Flora & Fauna	Science Elective	Breadth
Second Year	Semester 1	CHEM20011 Environmental Chemistry	Science Elective	Science Elective	Breadth/Science Elective
	Semester 2	Science Elective	Science Elective	Science Elective	Breadth
Third Year	Semester 1	EVSC30003 Environmental Risk Assessment	GEOL30007 Geomicrobiology and Biogeochemistry	Science Elective	Breadth/Science Elective
	Semester 2	EVSC30002 Problem Solving in Environmental Science	CHEM30012 Analytical & Environmental Chemistry	Science Elective	Breadth

Environmental Science major (Landscape ecosystem management focus)					
First Year	Semester 1	MAST10010 Data Analysis 1	BIOL10004 Biology of Cells and Organisms	Science Elective	Breadth
	Semester 2	Science Elective	Science Elective	Science Elective	Breadth
Second Year	Semester 1	BOTA20001 Green Planet: Plants and the Environment	Science Elective	Science Elective	Breadth/Science Elective
	Semester 2	ECOL20003 Ecology	Science Elective	Science Elective	Breadth
Third Year	Semester 1	EVSC30003 Environmental Risk Assessment	EVSC30006 Ecology of Urban Landscapes	Science Elective	Breadth/Science Elective
	Semester 2	EVSC30002 Problem Solving in Environmental Science	BOTA30004 Vegetation Management and Conservation	Science Elective	Breadth

MAJOR CORE	MAJOR SELECTIVE
MAJOR CORE PREREQUISITE	MAJOR SELECTIVE PREREQUISITE
RECOMMENDED	BREADTH

Environmental Science major (Aquatic ecosystem management focus)					
First Year	Semester 1	MAST10010 Data Analysis 1	BIOL10004 Biology of Cells and Organisms	Science Elective	Breadth
	Semester 2	Science Elective	Science Elective	Science Elective	Breadth
Second Year	Semester 1	EVSC20004 Blue Planet-Intro to Marine Environments	Science Elective	Science Elective	Breadth/Science Elective
	Semester 2	ECOL20003 Ecology	Science Elective	Science Elective	Breadth
Third Year	Semester 1	EVSC30003 Environmental Risk Assessment	GEOG30022 River Ecology & Ecosystem Management	ECOL30007 Marine Ecosystems: Ecology & Management	Breadth/Science Elective
	Semester 2	EVSC30002 Problem Solving in Environmental Science	Science Elective	Science Elective	Breadth

Environmental Science major (Aquatic ecosystem management focus) (Mid-year entry)					
First Year	Semester 2	BIOL10005 Genetics & The Evolution of Life	Science Elective	Science Elective	Breadth
	Semester 1	MAST10010 Data Analysis 1	Science Elective	Science Elective	Breadth
Second Year	Semester 2	ECOL20003 Ecology	Science Elective	Science Elective	Breadth/Science Elective
	Semester 1	EVSC20004 Blue Planet-Intro to Marine Environments	Science Elective	Science Elective	Breadth
Third Year	Semester 2	EVSC30002 Problem Solving in Environmental Science	Science Elective	Science Elective	Breadth/Science Elective
	Semester 1	EVSC30003 Environmental Risk Assessment	GEOG30022 River Ecology & Ecosystem Management	ECOL30007 Marine Ecosystems: Ecology & Management	Breadth

**\*These sample study plans assume that students have undertaken VCE Units 3/4 Chemistry, or equivalent. If students have not completed this previously, they may first need to enrol in CHEM10007 Fundamentals of Chemistry in their first semester**

MAJOR CORE	MAJOR SELECTIVE
MAJOR CORE PREREQUISITE	MAJOR SELECTIVE PREREQUISITE
RECOMMENDED	BREADTH

## 19. Food Science

Food Science					
First Year	Semester 1	CHEM10003 Chemistry 1	BIOL10004 Biology of Cells and Organisms	Science Elective	Breadth
	Semester 2	CHEM10004 Chemistry 2	BIOL10005 Genetics & The Evolution of Life	Science Elective	Breadth
Second Year	Semester 1	FOOD20003 Food Chemistry, Biology and Nutrition	Science Elective	Science Elective	Breadth
	Semester 2	FOOD20006 Food Microbiology and Safety	Science Elective	Science Elective	Breadth / Science Elective
Third Year	Semester 1	FOOD30008 Advanced Food Analysis	FOOD30007 Food Processing & Preservation	Science Elective	Breadth
	Semester 2	FOOD30009 Food Research & Development	FOOD30010 Functional Foods	Science Elective	Breadth / Science Elective

Mid-year Entry					
First Year	Semester 2	CHEM10003 Chemistry 1	BIOL10005 Genetics & The Evolution of Life	Science Elective	Breadth
	Summer	CHEM10004 Chemistry 2			
	Semester 1	Science Elective	BIOL10004 Biology of Cells and Organisms	Science Elective	
Second Year	Semester 2	FOOD20006 Food Microbiology and Safety	Science Elective	Breadth / Science Elective	Breadth
	Semester 1	FOOD20003 Food Chemistry, Biology and Nutrition	Science Elective	Breadth	
Third Year	Semester 2	Science Elective	Science Elective	Breadth / Science Elective	
	Semester 1	FOOD30007 Food Processing & Preservation	FOOD30008 Advanced Food Analysis	Science Elective	
Fourth Year	Semester 2	FOOD30009 Food Research & Development	FOOD30010 Functional Foods	Science Elective	

**\*These sample study plans assume that students have undertaken VCE Units 3/4 Chemistry, or equivalent. If students have not completed this previously, they may first need to enrol in CHEM10007 Fundamentals of Chemistry in their first semester**

MAJOR CORE	MAJOR SELECTIVE
MAJOR CORE PREREQUISITE	MAJOR SELECTIVE PREREQUISITE
RECOMMENDED	BREADTH

## 20. Forest Science

Forest Science major					
First Year	Semester 1	BIOL10004 Biology of Cells and Organisms	ENVS10002 Reshaping Environments	Science Elective	Breadth
	Semester 2	BIOL10005 Genetics and the Evolution of Life	Science Elective	Science Elective	Breadth
Second Year	Semester 1	Science Elective	Science Elective	Science Elective	Breadth
	Semester 2	BOTA20002 Plant Biodiversity	EVSC20005 Contested Resources	ECOL20003 Ecology	Breadth
Third Year	Summer	BOTA30006 Field Botany			
	Semester 1	FRST30001 Forest Systems	Science Elective	Science Elective	Breadth or Elective
	Semester 2	EVSC30007 Integrated Landscape Analysis	BOTA30004 Vegetation Management and Conservation	Breadth or Elective	

Forest Science (mid-year entry)					
First Year	Semester 2	BIOL10005 Genetics and the Evolution of Life	MAST10010 Data Analysis 1	Science Elective	Breadth
	Semester 1	BIOL10004 Biology of Cells and Organisms	ENVS10002 Reshaping Environments	Science Elective	Breadth or Elective
Second Year	Semester 2	ECOL20003 Ecology	EVSC20005 Contested Resources	Science Elective	Breadth
	Semester 1	Science Elective	Science Elective	Science Elective	Breadth
Third Year	Semester 2	EVSC30007 Integrated Landscape Analysis	BOTA30004 Vegetation Management and Conservation	Science Elective	Breadth or Elective
	Semester 1	FRST30001 Forest Systems	EVSC30003 Environmental Risk Assessment	Science Elective	Breadth

MAJOR CORE	MAJOR SELECTIVE
MAJOR CORE PREREQUISITE	MAJOR SELECTIVE PREREQUISITE
RECOMMENDED	BREADTH

## 21. Genetics

Genetics major					
First Year	Semester 1	BIOL10004 Biology of Cells and Organisms	Science Elective	Science Elective	Breadth
	Semester 2	BIOL10005 Genetics & The Evolution of Life	Science Elective	Science Elective	Breadth
Second Year	Semester 1	GENE20001 Principles of Genetics	Science Elective	Science Elective	Breadth/Science Elective
	Semester 2	GENE20003 Experiments in Genetics	GENE20002 Genes and Genomes	BOTA20002 Plant Biodiversity	Breadth
Third Year	Semester 1	GENE30001 Evolutionary Genetics and Genomics	GENE30002 Genes: Organisation and Function	Science Elective	Breadth/Science Elective
	Semester 2	GENE30004 Genetic Analysis	BOTA30002 Plant Evolution	Science Elective	Breadth

Genetics major (Mid-year)					
First Year	Semester 2	BIOL10005 Genetics & The Evolution of Life	Science Elective	Science Elective	Breadth
	Semester 1	BIOL10004 Biology of Cells and Organisms	GENE20001 Principles of Genetics	Science Elective	Breadth
Second Year	Semester 2	GENE20002 Genes and Genomes	GENE20003 Experiments in Genetics	ECOL20003 Ecology	Breadth/Science Elective
	Semester 1	GENE30001 Evolutionary Genetics and Genomics	GENE30002 Genes: Organisation and Function	Science Elective	Breadth
Third Year	Semester 2	GENE30004 Genetic Analysis	Science Elective	Science Elective	Breadth/Science Elective
	Semester 1	BOTA30003 Environmental Plant Physiology	Science Elective	Science Elective	Breadth

MAJOR CORE	MAJOR SELECTIVE
MAJOR CORE PREREQUISITE	MAJOR SELECTIVE PREREQUISITE
RECOMMENDED	BREADTH

## 22. Geography

Geography					
First Year	Semester 1	GEOG10001 Famine: The Geography of Scarcity	Science Elective	Science Elective	Breadth
	Semester 2	ERTH10002 Understanding Planet Earth	Science Elective	Science Elective	Breadth
Second Year	Semester 1	GEOG20002 Understanding Global Landforms	Science Elective	Science Elective	Breadth
	Semester 2	GEOG20013 Health Geography	Science Elective	Science Elective	Breadth
Third Year	Semester 1	GEOG30027 Local Sites, Global Connections	GEOG30001 Coastal Landforms & Processes	Science Elective	Breadth or science discipline
	Semester 2	GEOG30024 Africa: Environment, Development, People	GEOG30021 The Disaster Resilient City	Science Elective	Breadth or science discipline

Mid-Year					
First Year	Semester 2	ERTH10002 Understanding Planet Earth	Science Elective	Science Elective	Breadth
	Semester 1	GEOG10001 Famine: The Geography of Scarcity	Science Elective	Science Elective	Breadth
Second Year	Semester 2	GEOG20013 Health Geography	Science Elective	Science Elective	Breadth
	Semester 1	GEOG20002 Understanding Global Landforms	Science Elective	Science Elective	Breadth
	Summer	GEOG30025 Biogeography and Ecology of Fire			
Third Year	Semester 2	GEOG30024 Africa: Environment, Development, People	GEOG30001 Coastal Landforms & Processes	Science Elective	Breadth or science discipline
	Semester 1	GEOG30019 Sustainable Development	Science Elective	Science Elective	Breadth or science discipline

MAJOR CORE	MAJOR SELECTIVE
MAJOR CORE PREREQUISITE	MAJOR SELECTIVE PREREQUISITE
RECOMMENDED	BREADTH

## 23. Geology

Geology Major					
First Year	Semester 1	EVSC10001 The Global Environment	Science Elective	Science Elective	Breadth
	Semester 2	ERTH10002 Understanding Planet Earth	Science Elective	Science Elective	Breadth
	Semester 1	GEOL20002 Structural and Metamorphic Geology	GEOL20003 Earth Composition, Minerals and Magmas	Science Elective	Breadth
	Semester 2	GEOL20004 Field Mapping and Sedimentary Geology	ERTH20001 Dangerous Earth	Science Elective	Breadth or Science Elective
Third Year	Semester 1	GEOL30002 Tectonics and Geodynamics	GEOL30004 Geochemistry and Petrogenesis	Science Elective	Breadth
	Semester 2	GEOL30003 Sedimentary Geology	GEOL30006 Economic Geology	Science Elective	Breadth or Elective

Mid-Year					
First Year	Semester 2	ERTH10002 Understanding Planet Earth	Science Elective	Science Elective	Breadth
	Semester 1	EVSC10001 The Global Environment	Science Elective	Science Elective	Breadth
Second Year	Semester 2	GEOL20004 Field Mapping and Sedimentary Geology	ERTH20001 Dangerous Earth	Science Elective	Breadth
	Semester 1	GEOL20002 Structural and Metamorphic Geology	GEOL20003 Earth Composition, Minerals and Magmas	Science Elective	Breadth
Third Year	Semester 2	GEOL30003 Sedimentary Geology	GEOL30006 Economic Geology	Science Elective	Breadth or Elective
	Semester 1	GEOL30002 Tectonics and Geodynamics	GEOL30004 Geochemistry and Petrogenesis	Science Elective	Breadth or Elective

MAJOR CORE	MAJOR SELECTIVE
MAJOR CORE PREREQUISITE	MAJOR SELECTIVE PREREQUISITE
RECOMMENDED	BREADTH



## 24. Human Structure & Function

Human structure and Function major					
First Year	Semester 1	BIOL10004 Biology of Cells and Organisms	Science Elective	Science Elective	Breadth
	Semester 2	BIOL10005 Genetics & The Evolution of Life	Science Elective	Science Elective	Breadth/Science Elective
Second Year	Semester 1	ANAT20006 Principles of Human Structure	Science Elective	Science Elective	Breadth
	Semester 2	Science Elective	Science Elective	Science Elective	Breadth
Third Year	Semester 1	ANAT30007 Human Locomotor Systems	NEUR30003 Principles of Neuroscience	Science Elective	Breadth/Science Elective
	Semester 2	ANAT30008 Viscera and Visceral Systems	NEUR30005 Developmental Neurobiology	Science Elective	Breadth

MID YEAR					
First Year	Semester 2	BIOL10005 Genetics & The Evolution of Life	Science Elective	Science Elective	Breadth
	Semester 1	BIOL10004 Biology of Cells and Organisms	Science Elective	Science Elective	Breadth/Science Elective
Second Year	Semester 2	ANAT20006 Principles of Human Structure	Science Elective	Science Elective	Breadth
	Semester 1	PSYC20006 Biological Psychology	Science Elective	Science Elective	Breadth
Third Year	Semester 2	ANAT30008 Viscera and Visceral Systems	PHYS30001 Cardiovascular Health: Genes & Hormones	Science Elective	Breadth/Science Elective
	Semester 1	ANAT30007 Human Locomotor Systems	NEUR30003 Principles of Neuroscience	Science Elective	Breadth

MAJOR CORE	MAJOR SELECTIVE
MAJOR CORE PREREQUISITE	MAJOR SELECTIVE PREREQUISITE
RECOMMENDED	BREADTH

## 25. Immunology

Immunology major					
First Year	Semester 1	BIOL10004 Biology of Cells and Organisms	Science Elective	Science Elective	Breadth
	Semester 2	BIOL10005 Genetics & The Evolution of Life	Science Elective	Science Elective	Breadth/Science Elective
Second Year	Semester 1	MIIM20001 Principles of Microbiology & Immunology	Science Elective	Science Elective	Breadth
	Semester 2	MIIM20002 Microbes, Infections and Responses	Science Elective	Science Elective	Breadth
Third Year	Semester 1	MIIM30002 Principles of Immunology	MIIM30011 Medical Microbiology: Bacteriology	Science Elective	Breadth/Science Elective
	Semester 2	MIIM30003 Medical and Applied Immunology	MIIM30015 Techniques in Immunology	Science Elective	Breadth

MID YEAR					
First Year	Semester 2	BIOL10005 Genetics & The Evolution of Life	CHEM10003 Chemistry 1	Science Elective	Breadth
	Summer	CHEM10004 Chemistry 2			
	Semester 1	BIOL10004 Biology of Cells and Organisms	Science Elective	Science Elective	Breadth/Science Elective
Second Year	Semester 2	MIIM20001 Principles of Microbiology & Immunology	BCMB20005 Techniques in Molecular Science	Science Elective	Breadth
	Semester 1	MIIM30002 Principles of Immunology	BCMB30003 Molecular Aspects of Cell Biology	Science Elective	Breadth
Third Year	Semester 2	MIIM30003 Medical and Applied Immunology	MIIM30015 Techniques in Immunology	Science Elective	Breadth/Science Elective
	Semester 1	Science Elective	Science Elective	Breadth	

**\*These sample study plans assume that students have undertaken VCE Units 3/4 Chemistry, or equivalent. If students have not completed this previously, they may first need to enrol in CHEM10007 Fundamentals of Chemistry in their first semester**

MAJOR CORE	MAJOR SELECTIVE
MAJOR CORE PREREQUISITE	MAJOR SELECTIVE PREREQUISITE
RECOMMENDED	BREADTH

## 26. Informatics

Informatics major					
First Year	Semester 1	COMP10001 Foundations of Computing	Science Elective	Science Elective	Breadth
	Semester 2	COMP10002 Foundations of Algorithms	Science Elective	Science Elective	Breadth
Second Year	Semester 1	INFO20002 Foundations of Informatics	COMP20007 Design of Algorithms	Science Elective	Breadth
	Semester 2	INFO20003 Database Systems	Science Elective	Science Elective	Breadth
Third Year	Semester 1	INFO30004 Usability Engineering	INFO30005 Web Information Technologies	Science Elective	Breadth or Elective
	Semester 2	COMP30022 IT Project	COMP30019 Graphics and Interaction	Science Elective	Breadth or Elective

Informatics Major (Mid Year Intake)					
First Year	Semester 2	COMP10001 Foundations of Computing	Science Elective	Science Elective	Breadth
	Semester 1	COMP10002 Foundations of Algorithms	Science Elective	Science Elective	Breadth
Second Year	Semester 2	INFO20003 Database Systems	Science Elective	Science Elective	Breadth
	Semester 1	INFO20002 Foundations of Informatics	COMP20007 Design of Algorithms	Science Elective	Breadth
Third Year	Semester 2	COMP30022 IT Project	COMP30019 Graphics and Interaction	Science Elective	Breadth or Elective
	Semester 1	INFO30004 Usability Engineering	INFO30005 Web Information Technologies	Science Elective	Breadth or Elective

MAJOR CORE	MAJOR SELECTIVE
MAJOR CORE PREREQUISITE	MAJOR SELECTIVE PREREQUISITE
RECOMMENDED	BREADTH

## 27. Marine Biology

Marine Biology major					
First Year	Semester 1	BIOL10004 Biology of Cells and Organisms	Science Elective	Science Elective	Breadth
	Semester 2	BIOL10005 Genetics & the Evolution of Life	Science Elective	Science Elective	Breadth
Second Year	Semester 1	EVSC20004 Blue Planet-Intro to Marine Environments	Science Elective	Science Elective	Breadth/Science Elective
	Semester 2	ECOL20003 Ecology	Science Elective	Science Elective	Breadth
Third Year	Semester 1	ZOOL30008 Experimental Marine Biology (February)	ECOL30007 Marine Ecosystems: Ecology & Management	ECOL30006 Ecology in Changing Environments	Breadth/Science Elective
	Semester 2	BOTA30001 Marine Botany (November)	Science Elective	Science Elective	Breadth

Marine Biology major (Mid-year)					
First Year	Semester 2	BIOL10005 Genetics & the Evolution of Life	Science Elective	Science Elective	Breadth
	Semester 1	BIOL10004 Biology of Cells and Organisms	Science Elective	Science Elective	Breadth
Second Year	Semester 2	ECOL20003 Ecology	Science Elective	Science Elective	Breadth/Science Elective
	Semester 1	EVSC20004 Blue Planet-Intro to Marine Environments	Science Elective	Science Elective	Breadth
Third Year	Semester 2	BOTA30001 Marine Botany (November)	ECOL30005 Applied Ecology	Science Elective	Breadth/Science Elective
	Semester 1	ECOL30007 Marine Ecosystems: Ecology & Management	ZOOL30008 Experimental Marine Biology (February)	Science Elective	Breadth

MAJOR CORE	MAJOR SELECTIVE
MAJOR CORE PREREQUISITE	MAJOR SELECTIVE PREREQUISITE
RECOMMENDED	BREADTH

## 28. Mathematical Physics

Mathematical Physics major					
First Year	Semester 1	PHYC10003 Physics 1	MAST10006 Calculus 2	Science Elective	Breadth
	Semester 2	PHYC10004 Physics 2: Physical Science and Technology	MAST10007 Linear Algebra	Science Elective	Breadth
Second Year	Semester 1	PHYC20012 Quantum and Thermal Physics	PHYC20013 Laboratory and Computational Physics 2	MAST20026 Real Analysis	MAST20009 Vector Calculus
	Semester 2	PHYC20015 Special Relativity and Electromagnetism	MAST20030 Differential Equations	Breadth or Science Elective	Breadth
Third Year	Semester 1	PHYC30018 Quantum Physics	MAST30021 Complex Analysis	Science Elective	Breadth
	Semester 2	PHYC30017 Statistical Physics	MAST30031 Methods of Mathematical Physics	Science Elective	Breadth or Science Elective

Mid-Year Sample Course Plan (mathematical physics)					
First Year	Semester 2	PHYC10004 Physics 2: Physical Science and Technology	MAST10006 Calculus 2	Science Elective	Breadth
	Summer	MAST10007 Linear Algebra			
	Semester 1	PHYC10003 Physics 1	MAST10007 Linear Algebra	MAST20009 Vector Calculus	Breadth
Second Year	Semester 2	PHYC20015 Special Relativity and Electromagnetism	MAST20030 Differential Equations	Science Elective	Breadth
	Semester 1	PHYC20012 Quantum and Thermal Physics	PHYC20013 Laboratory and Computational Physics 2	MAST20026 Real Analysis	Breadth or Science Elective
Third Year	Semester 2	MAST30021 Complex Analysis	MAST30031 Methods of Mathematical Physics	Science Elective	Breadth
	Semester 1	PHYC30018 Quantum Physics	PHYC30016 Electrodynamics	Science Elective	

**\*These sample study plans assume that students have undertaken VCE Units 3/4 Physics and a study score of at least 29 in VCE Specialist Mathematics 3/4, or equivalent. If students have not completed this previously, they may first need to enrol in PHYC10005 Physics 1: Fundamentals and/or MAST10005 Calculus 1 in their first semester.**

MAJOR CORE	MAJOR SELECTIVE
MAJOR CORE PREREQUISITE	MAJOR SELECTIVE PREREQUISITE
RECOMMENDED	BREADTH

## 29. Mathematics & Statistics

Mathematics and Statistics major, Pure Maths specialisation					
First Year	Semester 1	MAST10006 Calculus 2	Science Elective	Science Elective	Breadth
	Semester 2	MAST10007 Linear Algebra	Science Elective	Science Elective	Breadth
Second Year	Semester 1	MAST20026 Real Analysis	Science Elective	Science Elective	Breadth
	Semester 2	MAST20022 Group Theory and Linear Algebra	MAST20009 Vector Calculus	Science Elective	Breadth
Third Year	Semester 1	MAST30021 Complex Analysis	MAST30005 Algebra	Science Elective	Breadth or Elective
	Semester 2	MAST30026 Metric and Hilbert Spaces	MAST30024 Geometry	Science Elective	Breadth or Elective

Mathematics and Statistics major, Applied Maths specialisation					
First Year	Semester 1	MAST10006 Calculus 2	COMP10001 Foundations of Computing	Science Elective	Breadth
	Semester 2	MAST10007 Linear Algebra	Science Elective	Science Elective	Breadth
Second Year	Semester 1	MAST20026 Real Analysis	MAST20009 Vector Calculus	MAST20004 Probability	Breadth
	Semester 2	MAST20030 Differential Equations	Science Elective	Science Elective	Breadth or Elective
Third Year	Semester 1	MAST30021 Complex Analysis	MAST30030 Applied Mathematical Modelling	Science Elective	Breadth
	Semester 2	MAST30028 Numerical and Symbolic Mathematics	MAST30001 Stochastic Modelling	Science Elective	Breadth or Elective

Mathematics and Statistics major, Discrete Mathematics and Operations specialisation					
First Year	Semester 1	MAST10006 Calculus 2	Science Elective	Science Elective	Breadth
	Semester 2	MAST10007 Linear Algebra	Science Elective	Science Elective	Breadth
Second Year	Semester 1	MAST20026 Real Analysis	MAST20004 Probability	Science Elective	Breadth
	Semester 2	MAST20018 Discrete Maths and Operations Research	Science Elective	Science Elective	Breadth or Elective
Third Year	Semester 1	MAST30013 Techniques in Operations Research	MAST30021 Complex Analysis	Science Elective	Breadth
	Semester 2	MAST30012 Discrete Mathematics	MAST30022 Decision Making	Science Elective	Breadth or Elective

MAJOR CORE	MAJOR SELECTIVE
MAJOR CORE PREREQUISITE	MAJOR SELECTIVE PREREQUISITE
RECOMMENDED	BREADTH

Mathematics and Statistics major, Statistics/Stochastic Processes specialisation					
First Year	Semester 1	MAST10006 Calculus 2	Science Elective	Science Elective	Breadth
	Semester 2	MAST10007 Linear Algebra	Science Elective	Science Elective	Breadth
Second Year	Semester 1	MAST20026 Real Analysis	MAST20004 Probability	Science Elective	Breadth
	Semester 2	MAST20005 Statistics	Science Elective	Science Elective	Breadth
Third Year	Semester 1	MAST30025 Linear Statistical Models	MAST30020 Probability for Inference	Science Elective	Breadth or Elective
	Semester 2	MAST30001 Stochastic Modelling	MAST30027 Modern Applied Statistics	Science Elective	Breadth or Elective

Mathematics and Statistics major, Pure Maths specialisation (mid-year entry)					
First Year	Semester 2	MAST10006 Calculus 2	Science Elective	Science Elective	Breadth
	Semester 1	MAST10007 Linear Algebra (Summer)	MAST20026 Real Analysis	Science Elective	Breadth
Second Year	Semester 2	MAST20022 Group Theory and Linear Algebra	MAST20009 Vector Calculus	Science Elective	Breadth or Elective
	Semester 1	Science Elective	Science Elective	Science Elective	Breadth
Third Year	Semester 2	MAST30021 Complex Analysis	MAST30026 Metric and Hilbert Spaces	Science Elective	Breadth or Elective
	Semester 1	MAST30011 Graph Theory	MAST30005 Algebra	Science Elective	Breadth or Elective

Mathematics and Statistics major, Applied Maths specialisation (mid-year entry)					
First Year	Semester 2	MAST10006 Calculus 2	Science Elective	Science Elective	Breadth
	Semester 1	MAST10007 Linear Algebra (summer)	Science Elective	Science Elective	Breadth
Second Year	Semester 2	MAST20026 Real Analysis	MAST20009 Vector Calculus	Science Elective	Breadth
	Semester 1	MAST20004 Probability	Science Elective	Science Elective	Breadth or Elective
Third Year	Semester 2	MAST30021 Complex Analysis	MAST30028 Numerical and Symbolic Mathematics	MAST30001 Stochastic Modelling	Breadth
	Semester 1	MAST30030 Applied Mathematical Modelling	Science Elective	Science Elective	Breadth or Elective

MAJOR CORE	MAJOR SELECTIVE
MAJOR CORE PREREQUISITE	MAJOR SELECTIVE PREREQUISITE
RECOMMENDED	BREADTH

Mathematics and Statistics major, Discrete Mathematics and Operations specialisation (mid-year entry)					
First Year	Semester 2	MAST10006 Calculus 2	Science Elective	Science Elective	Breadth
	Semester 1	MAST10007 Linear Algebra (Summer)	Science Elective	Science Elective	Breadth
Second Year	Semester 2	MAST20026 Real Analysis	MAST20018 Discrete Maths and Operations Research	Science Elective	Breadth or Elective
	Semester 1	MAST20004 Probability	Science Elective	Science Elective	Breadth
Third Year	Semester 2	MAST30012 Discrete Mathematics	MAST30021 Complex Analysis	MAST30022 Decision Making	Breadth
	Semester 1	MAST30013 Techniques in Operations Research	Science Elective	Science Elective	Breadth or Elective

Mathematics and Statistics major, Statistics/Stochastic Processes specialisation (mid-year entry)					
First Year	Semester 2	MAST10006 Calculus 2	Science Elective	Science Elective	Breadth
	Semester 1	MAST10007 Linear Algebra (Summer)	Science Elective	Science Elective	Breadth
Second Year	Semester 2	MAST20026 Real Analysis	Science Elective	Science Elective	Breadth or Elective
	Semester 1	MAST20004 Probability	Science Elective	Science Elective	Breadth
Third Year	Semester 2	MAST30001 Stochastic Modelling	MAST20005 Statistics	Science Elective	Breadth
	Semester 1	MAST30025 Linear Statistical Models	MAST30020 Probability for Inference	MAST30025 Linear Statistical Models	Breadth or Elective

**\*These sample study plans assume that students have achieved a study score of at least 29 in VCE Specialist Mathematics 3/4, or equivalent. If students have not completed this previously, they may first need to enrol in MAST10005 Calculus 1 in their first semester.**

MAJOR CORE	MAJOR SELECTIVE
MAJOR CORE PREREQUISITE	MAJOR SELECTIVE PREREQUISITE
RECOMMENDED	BREADTH



## 30. Mechanical Systems

Mechanical Systems					
First Year	Semester 1	ENGR10004 Engineering Systems Design 1	MAST10006 Calculus 2	PHYC10003 Physics 1	Breadth
	Semester 2	ENGR10003 Engineering Systems Design 2	MAST10007 Linear Algebra	Science Elective	Breadth
Second Year	Semester 1	ENGR20004 Engineering Mechanics	Science Elective	Science Elective	Breadth
	Semester 2	MAST20029 Engineering Mathematics	ELEN20005 Foundations of Electrical Networks	Science Elective	Breadth
Third Year	Semester 1	MCEN30017 Mechanics & Materials	MCEN30018 Thermodynamics and Fluid Mechanics	Science Elective	Breadth/Science
	Semester 2	MCEN30014 Mechanical Design	MCEN30020 Systems Modelling and Analysis	Science Elective	Breadth/Science

Mid-year intake					
First Year	Semester 2	ENGR10004 Engineering Systems Design 1	MAST10006 Calculus 2	Science Elective	Breadth
	Summer Term	ENGR10003 Engineering Systems Design 2			
	Semester 1	MAST10007 Linear Algebra	Science Elective	Breadth	
Second Year	Semester 2	ENGR20004 Engineering Mechanics	MAST20029 Engineering Mathematics	ELEN20005 Foundations of Electrical Networks	Breadth
	Semester 1	MCEN30017 Mechanics & Materials	Science Elective	Science Elective	Breadth
Third Year	Semester 2	MCEN30018 Thermodynamics and Fluid Mechanics	MCEN30017 Mechanics & Materials	MCEN30020 Systems Modelling and Analysis	Breadth/Science
	Semester 1	Science Elective	Science Elective	Science Elective	Breadth/Science

**\*These sample study plans assume that students have achieved a study score of at least 29 in VCE Specialist Mathematics 3/4, or equivalent. If students have not completed this previously, they may first need to enrol in MAST10005 Calculus 1 in their first semester**

MAJOR CORE	MAJOR SELECTIVE
MAJOR CORE PREREQUISITE	MAJOR SELECTIVE PREREQUISITE
RECOMMENDED	BREADTH

## 31. Mechatronics Systems

Mehcatronics Systems major					
First Year	Semester 1	MAST10006 Calculus 2	ENGR10004 Engineering Systems Design 1	PHYC10003 Physics 1	Breadth
	Semester 2	MAST10007 Linear Algebra	ENGR10003 Engineering Systems Design 2	PHYC10004 Physics 2: Physical Science & Technology	Breadth
Second Year	Semester 1	MAST20029 Engineering Mathematics	COMP20005 Engineering Computation	Science Elective	Breadth
	Semester 2	ELEN20005 Foundations of Electrical Networks	ENGR20004 Engineering Mechanics	Science Elective	Breadth
Third Year	Semester 1	ELEN30014 Analog and Digital Electronics Concepts	Science Elective	Science Elective	Breadth/Science
	Semester 2	ENGR30003 Numerical Programming for Engineers	MCEN30019 Mechatronic Systems Design	MCEN30020 Systems Modelling and Analysis	Breadth/Science

Mid Year - Mechatronics Major					
First Year	Semester 2	MAST10006 Calculus 2	ENGR10004 Engineering Systems Design 1	PHYC10004 Physics 2: Physical Science & Technology	Breadth
	Summer Term	ENGR10003 Engineering Systems Design 2			
	Semester 1	MAST10007 Linear Algebra	PHYC10003 Physics 1	Breadth	
Second Year	Semester 2	ELEN20005 Foundations of Electrical Networks	COMP20005 Engineering Computation	Science Elective	Breadth
	Semester 1	MAST20029 Engineering Mathematics	ENGR20004 Engineering Mechanics	Science Elective	Breadth
Third Year	Semester 2	ENGR30003 Numerical Programming for Engineers	MCEN30019 Mechatronic Systems Design	MCEN30020 Systems Modelling and Analysis	Breadth/Science
	Semester 1	ELEN30014 Analog and Digital Electronics Concepts	Science Elective	Science Elective	Breadth/Science

**\*These sample study plans assume that students have achieved a study score of at least 29 in VCE Specialist Mathematics 3/4 and VCE Units 3/4 Physics, or equivalent. If students have not completed this previously, they may first need to enrol in MAST10005 Calculus 1 and/or PHYC10005 Physics 1: Fundamentals in their first semester**

MAJOR CORE	MAJOR SELECTIVE
MAJOR CORE PREREQUISITE	MAJOR SELECTIVE PREREQUISITE
RECOMMENDED	BREADTH

## 32. Microbiology & Immunology

Microbiology specialisation					
First Year	Semester 1	BIOL10004 Biology of Cells and Organisms	CHEM10003 Chemistry 1	Science Elective	Breadth
	Semester 2	BIOL10005 Genetics & The Evolution of Life	CHEM10004 Chemistry 2	Science Elective	Breadth/Science Elective
Second Year	Semester 1	MIIM20001 Principles of Microbiology & Immunology	BCMB20002 Biochemistry and Molecular Biology	Science Elective	Breadth
	Semester 2	MIIM20002 Microbes, Infections and Responses	BCMB20005 Techniques in Molecular Science	Science Elective	Breadth
Third Year	Semester 1	MIIM30011 Medical Microbiology: Bacteriology	MIIM30016 Techniques in Microbiology	Science Elective	Breadth/Science Elective
	Semester 2	MIIM30014 Medical Microbiology: Virology	BCMB30004 Cell Signalling and Neurochemistry	Science Elective	Breadth

Infection and Immunity specialisation					
First Year	Semester 1	BIOL10004 Biology of Cells and Organisms	Science Elective	Science Elective	Breadth
	Semester 2	BIOL10005 Genetics & The Evolution of Life	Science Elective	Science Elective	Breadth/Science Elective
Second Year	Semester 1	MIIM20001 Principles of Microbiology & Immunology	Science Elective	Science Elective	Breadth
	Semester 2	MIIM20002 Microbes, Infections and Responses	Science Elective	Science Elective	Breadth
Third Year	Semester 1	MIIM30011 Medical Microbiology: Bacteriology	MIIM30002 Principles of Immunology	Science Elective	Breadth/Science Elective
	Semester 2	MIIM30014 Medical Microbiology: Virology	MIIM30015 Techniques in Immunology	Science Elective	Breadth

MID YEAR - Infection and Immunity specialisation					
First Year	Semester 2	BIOL10005 Genetics & The Evolution of Life	Science Elective	Science Elective	Breadth
	Semester 1	BIOL10004 Biology of Cells and Organisms	Science Elective	Science Elective	Breadth
Second Year	Semester 2	Science Elective	Science Elective	Science Elective	Breadth
	Semester 1	MIIM20001 Principles of Microbiology & Immunology	Science Elective	Science Elective	
Third Year	Semester 2	MIIM20002 Microbes, Infections and Responses	Science Elective	Breadth	
	Semester 1	MIIM30011 Medical Microbiology: Bacteriology	MIIM30002 Principles of Immunology	Breadth/Science Elective	
Fourth Year	Semester 2	MIIM30014 Medical Microbiology: Virology	MIIM30015 Techniques in Immunology	Breadth	

**\*These sample study plans assume that students have undertaken VCE Units 3/4 Chemistry, or equivalent. If students have not completed this previously, they may first need to enrol in CHEM10007 Fundamentals of Chemistry in their first semester**

MAJOR CORE	MAJOR SELECTIVE
MAJOR CORE PREREQUISITE	MAJOR SELECTIVE PREREQUISITE
RECOMMENDED	BREADTH

### 33. Neuroscience

Neuroscience major					
First Year	Semester 1	BIOL10004 Biology of Cells and Organisms	PSYC10003 Mind, Brain & Behaviour 1 (recommended)	Science Elective	Breadth
	Semester 2	BIOL10005 Genetics & The Evolution of Life	PSYC10004 Mind, Brain and Behaviour 2 (recommended)	Science Elective	Breadth/Science Elective
Second Year	Semester 1	PSYC20006 Biological Psychology	GENE20001 Principles of Genetics (recommended)	Science Elective	Breadth
	Semester 2	Science Elective	Science Elective	Science Elective	Breadth
Third Year	Semester 1	NEUR30003 Principles of Neuroscience	NEUR30002 Neurophysiology: Neurons and Circuits	Science Elective	Breadth/Science Elective
	Semester 2	NEUR30005 Developmental Neurobiology	NEUR30004 Sensation Movement and Complex Functions	Science Elective	Breadth

MID YEAR					
First Year	Semester 2	BIOL10005 Genetics & The Evolution of Life	PSYC10004 Mind, Brain and Behaviour 2 (recommended)	Science Elective	Breadth
	Semester 1	BIOL10004 Biology of Cells and Organisms	PSYC10003 Mind, Brain & Behaviour 1 (recommended)	Science Elective	Breadth/Science Elective
Second Year	Semester 2	PSYC20007 Cognitive Psychology	ANAT20006 Principles of Human Structure (recommended)	PHYS20008 Human Physiology (recommended)	Breadth
	Semester 1	NEUR30003 Principles of Neuroscience	NEUR30002 Neurophysiology: Neurons and Circuits	Science Elective	Breadth
Third Year	Semester 2	NEUR30005 Developmental Neurobiology	NEUR30004 Sensation Movement and Complex Functions	Science Elective	Breadth/Science Elective
	Semester 1	Science Elective	Science Elective	Science Elective	Breadth

MAJOR CORE	MAJOR SELECTIVE
MAJOR CORE PREREQUISITE	MAJOR SELECTIVE PREREQUISITE
RECOMMENDED	BREADTH

## 34. Pathology

Pathology major					
First Year	Semester 1	BIOL10004 Biology of Cells and Organisms	CHEM10003 Chemistry 1	Science Elective	Breadth
	Semester 2	BIOL10005 Genetics & The Evolution of Life	CHEM10004 Chemistry 2	Science Elective	Breadth/Science Elective
Second Year	Semester 1	BCMB20002 Biochemistry and Molecular Biology	Science Elective	Science Elective	Breadth
	Semester 2	PATH20001 Exploring Human Disease - Science	BCMB20005 Techniques in Molecular Science	Science Elective	Breadth
Third Year	Semester 1	PATH30001 Mechanisms of Human Disease	PATH30002 Techniques for Investigation of Disease	Science Elective	Breadth/Science Elective
	Semester 2	PATH30003 Frontiers in Human Disease	PATH30004 Advanced Investigation of Human Disease	Science Elective	Breadth

MID YEAR					
First Year	Semester 2	CHEM10003 Chemistry 1	BIOL10005 Genetics & The Evolution of Life	Science Elective	Breadth
	SUMMER	CHEM10004 Chemistry 2			
	Semester 1	BIOL10004 Biology of Cells and Organisms	BCMB20005 Techniques in Molecular Science	Science Elective	Breadth/Science Elective
Second Year	Semester 2	BCMB20002 Biochemistry and Molecular Biology	PATH20001 Exploring Human Disease - Science	ANAT20006 Principles of Human Structure	Breadth
	Semester 1	PATH30001 Mechanisms of Human Disease	PATH30002 Techniques for Investigation of Disease	Science Elective	Breadth
Third Year	Semester 2	PATH30003 Frontiers in Human Disease	ANAT30008 Viscera and Visceral Systems	Science Elective	
	Semester 1	Science Elective	Science Elective	Breadth/Science Elective	Breadth

MAJOR CORE	MAJOR SELECTIVE
MAJOR CORE PREREQUISITE	MAJOR SELECTIVE PREREQUISITE
RECOMMENDED	BREADTH

## 35. Pharmacology

Pharmacology major					
First Year	Semester 1	CHEM10003 Chemistry 1	BIOL10004 Biology of Cells and Organisms	Science Elective	Breadth
	Semester 2	CHEM10004 Chemistry 2	Science Elective	Science Elective	Breadth/Science Elective
Second Year	Semester 1	Science Elective	Science Elective	Science Elective	Breadth
	Semester 2	PHRM20001 Pharmacology: How Drugs Work	Science Elective	Science Elective	Breadth
Third Year	Semester 1	PHRM30008 Drugs: From Discovery to Market	BIOM30003 Biomedical Research Project	Science Elective	Breadth/Science Elective
	Semester 2	PHRM30009 Drugs in Biomedical Experiments	PHRM30003 Drug Treatment of Disease	Science Elective	Breadth

Mid-year Entry					
First Year	Semester 2	BIOL10005 Genetics and the Evolution of Life	CHEM10003 Chemistry 1	Science Elective	Breadth
	Semester 1	BIOL10004 Biology of Cells and Organisms	Science Elective	Science Elective	Breadth/Science Elective
Second Year	Semester 2	PHRM20001 Pharmacology: How Drugs Work	Science Elective	Science Elective	Breadth
	Semester 1	Science Elective	Science Elective	Science Elective	Breadth
Third Year	Semester 2	PHRM30003 Drug Treatment of Disease	PHRM30002 Drugs Affecting the Nervous System	Science Elective	Breadth/Science Elective
	Semester 1	PHRM30008 Drugs: From Discovery to Market	PHRM30009 Drugs in Biomedical Experiments	Science Elective	Breadth

**\*These sample study plans assume that students have undertaken VCE Units 3/4 Chemistry, or equivalent. If students have not completed this previously, they may first need to enrol in CHEM10007 Fundamentals of Chemistry in their first semester**

MAJOR CORE	MAJOR SELECTIVE
MAJOR CORE PREREQUISITE	MAJOR SELECTIVE PREREQUISITE
RECOMMENDED	BREADTH

## 36. Physics

Physics major, Physics specialisation					
First Year	Semester 1	PHYC10004 Physics 2: Physical Science & Technology	MAST10006 Calculus 2	Science Elective	Breadth
	Summer	MAST10007 Linear Algebra			
	Semester 2	PHYC10003 Physics 1	MAST20009 Vector Calculus		Breadth
Second Year	Semester 1	MAST20030 Differential Equations	PHYC20015 Special Relativity and Electromagnetism	Science Elective	Breadth or Elective
	Semester 2	PHYC20013 Laboratory and Computational Physics 2	PHYC20012 Quantum and Thermal Physics	Science Elective	Breadth
Third Year	Semester 1	PHYC30021 Laboratory and Computational Physics 3	PHYC30017 Statistical Physics	Science Elective	Breadth or Elective
	Semester 2	PHYC30018 Quantum Physics	PHYC30019 Astrophysics	Science Elective	Breadth

Physics major, Chemical Physics specialisation					
First Year	Semester 1	PHYC10003 Physics 1	MAST10006 Calculus 2	CHEM10003 Chemistry 1	Breadth
	Semester 2	PHYC10004 Physics 2: Physical Science & Technology	MAST10007 Linear Algebra	CHEM10004 Chemistry 2	Breadth
Second Year	Semester 1	PHYC20012 Quantum and Thermal Physics	PHYC20013 Laboratory and Computational Physics 2	MAST20026 Real Analysis	CHEM20018 Chemistry: Reactions and Synthesis
	Semester 2	PHYC20015 Special Relativity and Electromagnetism	MAST20009 Vector Calculus	CHEM20020 Chemistry: Structure and Properties	Breadth
Third Year	Semester 1	PHYC30018 Quantum Physics	CHEM30016 Reactivity and Mechanism	Science Elective	Breadth
	Semester 2	PHYC30017 Statistical Physics	CHEM30014 Specialised Topics in Chemistry B	Science Elective	Breadth/Science Elective

Physics major, Physics specialisation (mid-year entry)					
First Year	Semester 2	PHYC10004 Physics 2: Physical Science & Technology	MAST10006 Calculus 2	Science Elective	Breadth
	Semester 1	PHYC10003 Physics 1	MAST10007 Linear Algebra	Science Elective	Breadth
Second Year	Semester 2	MAST20009 Vector Calculus	PHYC20015 Special Relativity and Electromagnetism	Science Elective	Breadth or Elective
	Semester 1	MAST20026 Real Analysis	PHYC20012 Quantum and Thermal Physics	PHYC20013 Laboratory and Computational Physics 2	Breadth
Third Year	Semester 2	PHYC30021 Laboratory and Computational Physics 3	PHYC30017 Statistical Physics	Science Elective	Breadth or Elective
	Semester 1	PHYC30018 Quantum Physics	PHYC30019 Astrophysics	Science Elective	Breadth

MAJOR CORE	MAJOR SELECTIVE
MAJOR CORE PREREQUISITE	MAJOR SELECTIVE PREREQUISITE
RECOMMENDED	BREADTH

Physics major, Chemical Physics specialisation (mid-year entry)					
First Year	Semester 2	PHYC10004 Physics 2: Physical Science & Technology	MAST10006 Calculus 2	CHEM10003 Chemistry 1	Breadth
	Summer		MAST10007 Linear Algebra	CHEM10004 Chemistry 2	
	Semester 1	PHYC10003 Physics 1	MAST20026 Real Analysis	Science Elective	
Second Year	Semester 2	PHYC20015 Special Relativity and Electromagnetism	CHEM20020 Chemistry: Structure and Properties	MAST20009 Vector Calculus	Breadth or Elective
	Semester 1	PHYC20012 Quantum and Thermal Physics	PHYC20013 Laboratory and Computational Physics 2	CHEM20018 Chemistry: Reactions and Synthesis	Breadth
Third Year	Semester 2	PHYC30017 Statistical Physics	PHYC30021 Laboratory and Computational Physics 3	Science Elective	Breadth or Elective
	Semester 1	PHYC30018 Quantum Physics	CHEM30016 Reactivity and Mechanism	Science Elective	Breadth

**\*These sample study plans assume that students have undertaken VCE Units 3/4 Physics and a study score of at least 29 in VCE Specialist Mathematics 3/4, or equivalent. If students have not completed this previously, they may first need to enrol in PHYC10005 Physics 1: Fundamentals and/or MAST10005 Calculus 1 in their first semester.**

MAJOR CORE	MAJOR SELECTIVE
MAJOR CORE PREREQUISITE	MAJOR SELECTIVE PREREQUISITE
RECOMMENDED	BREADTH



## 37. Physiology

Physiology major					
First Year	Semester 1	BIOL10004 Biology of Cells and Organisms	CHEM10007 Fundamentals of Chemistry	Science Elective	Breadth
	Semester 2	BIOL10005 Genetics and the Evolution of Life	Science Elective	Science Elective	Breadth/Science Elective
Second Year	Semester 1	PHYS20008 Human Physiology	Science Elective	Science Elective	Breadth
	Semester 2	PHYS20009 Research-Based Physiology	Science Elective	Science Elective	Breadth
Third Year	Semester 1	PHYS30005 Muscle and Exercise Physiology	PHYS30009 Experimental Physiology	Science Elective	Breadth/Science Elective
	Semester 2	PHYS30008 Frontiers in Physiology	PHYS30001 Cardiovascular Health: Genes & Hormones	Science Elective	Breadth

MID YEAR					
First Year	Semester 2	BIOL10005 Genetics and the Evolution of Life	MAST10010 Data Analysis 1	Science Elective	Breadth
	Semester 1	BIOL10004 Biology of Cells and Organisms	Science Elective	Science Elective	Breadth/Science Elective
Second Year	Semester 2	PHYS20008 Human Physiology	Science Elective	Science Elective	Breadth
	Semester 1	PHYS20009 Research-Based Physiology	Science Elective	Science Elective	Breadth
Third Year	Semester 2	PHYS30008 Frontiers in Physiology	PHYS30001 Cardiovascular Health: Genes & Hormones	Science Elective	Breadth/Science Elective
	Semester 1	NEUR30003 Principles of Neuroscience	PHYS30009 Experimental Physiology	Science Elective	Breadth

MAJOR CORE	MAJOR SELECTIVE
MAJOR CORE PREREQUISITE	MAJOR SELECTIVE PREREQUISITE
RECOMMENDED	BREADTH

## 38. Plant Science

Plant Science major					
First Year	Semester 1	BIOL10004 Biology of Cells and Organisms	Science Elective	Science Elective	Breadth
	Semester 2	BIOL10005 Genetics & The Evolution of Life	Science Elective	Science Elective	Breadth
Second Year	Semester 1	BOTA20001 Green Planet: Plants and the Environment	EVSC20004 Blue Planet-Intro to Marine Environments	Science Elective	Breadth/Science Elective
	Semester 2	BOTA20002 Plant Biodiversity	ECOL20003 Ecology	Science Elective	Breadth
Third Year	Semester 1	BOTA30006 Field Botany (January)	Science Elective	Science Elective	Breadth/Science Elective
	Semester 2	BOTA30002 Plant Evolution	BOTA30001 Marine Botany (November)	BOTA30005 Plant Molecular Biology & Biotechnology	Breadth

Plant Science major (Mid-year)					
First Year	Semester 2	BIOL10005 Genetics & The Evolution of Life	Science Elective	Science Elective	Breadth
	Semester 1	BIOL10004 Biology of Cells and Organisms	Science Elective	Science Elective	Breadth
Second Year	Semester 2	BOTA20002 Plant Biodiversity	ECOL20003 Ecology	Science Elective	Breadth/Science Elective
	Semester 1	Science Elective	Science Elective	Science Elective	Breadth
Third Year	Semester 2	BOTA30002 Plant Evolution	BOTA30004 Vegetation Management and Conservation	Science Elective	Breadth/Science Elective
	Semester 1	BOTA30003 Environmental Plant Physiology	BOTA30006 Field Botany (January)	Science Elective	Breadth

MAJOR CORE	MAJOR SELECTIVE
MAJOR CORE PREREQUISITE	MAJOR SELECTIVE PREREQUISITE
RECOMMENDED	BREADTH

## 30. Psychology

APAC accredited sequence					
First Year	Semester 1	PSYC10003 Mind, Brain & Behaviour 1	Science Elective	Science Elective	Breadth
	Semester 2	PSYC10004 Mind, Brain and Behaviour 2	Science Elective	Science Elective	Breadth/Science Elective
Second Year	Semester 1	PSYC20006 Biological Psychology	PSYC20008 Developmental Psychology	Science Elective	Breadth
	Semester 2	PSYC20007 Cognitive Psychology	PSYC20009 Personality and Social Psychology	Science Elective	Breadth
Third Year	Semester 1	PSYC30013 Research Methods for Human Inquiry	PSYC30014 The Psychopathology of Everyday Life	Science Elective	Breadth/Science Elective
	Semester 2	PSYC30021 Psychological Science: Theory & Practice	PSYC30022 Trends in Personality & Social Psychology	Science Elective	Breadth

non-APAC accredited sequence					
First Year	Semester 1	PSYC10003 Mind, Brain & Behaviour 1	Science Elective	Science Elective	Breadth
	Semester 2	PSYC10004 Mind, Brain and Behaviour 2	Science Elective	Science Elective	Breadth/Science Elective
Second Year	Semester 1	PSYC20006 Biological Psychology OR PSYC20008 Developmental Psychology	Science Elective	Science Elective	Breadth
	Semester 2	PSYC20007 Cognitive Psychology OR PSYC20009 Personality and Social Psychology	Science Elective	Science Elective	Breadth
Third Year	Semester 1	PSYC30013 Research Methods for Human Inquiry	PSYC30018 Neuroscience and the Mind	Science Elective	Breadth/Science Elective
	Semester 2	PSYC30021 Psychological Science: Theory & Practice	PSYC30020 The Integrated Brain	Science Elective	Breadth

MID YEAR - APAC accredited sequence					
First Year	Semester 2	PSYC10004 Mind, Brain and Behaviour 2	Science Elective	Science Elective	Breadth
	Semester 1	PSYC10003 Mind, Brain & Behaviour 1	Science Elective	Science Elective	Breadth/Science Elective
Second Year	Semester 2	PSYC20007 Cognitive Psychology	PSYC20009 Personality and Social Psychology	Science Elective	Breadth
	Semester 1	PSYC20006 Biological Psychology	PSYC20008 Developmental Psychology	PSYC30013 Research Methods for Human Inquiry	Breadth
Third Year	Semester 2	PSYC30021 Psychological Science: Theory & Practice	PSYC30022 Trends in Personality & Social Psychology	Science Elective	Breadth/Science Elective
	Semester 1	Science Elective	PSYC30014 The Psychopathology of Everyday Life	Science Elective	Breadth

MAJOR CORE	MAJOR SELECTIVE
MAJOR CORE PREREQUISITE	MAJOR SELECTIVE PREREQUISITE
RECOMMENDED	BREADTH

## 40. Spatial Systems

Spatial Systems major					
First Year	Semester 1	MAST10006 Calculus 2	ENVS10006 Mapping Environments	ENGR10003 Engineering Systems Design 2	Breadth
	Semester 2	MAST10007 Linear Algebra	Science Elective	Science Elective	Breadth
Second Year	Semester 1	GEOM20013 Applications of GIS	COMP20005 Engineering Computation	Science Elective	Breadth
	Semester 2	GEOM20015 Surveying and Mapping	Science Elective	Science Elective	Breadth
Third Year	Semester 1	CVEN30008 Engineering Risk Analysis	GEOM30009 Imaging the Environment	Science Elective	Breadth/Science
	Semester 2	GEOM30012 Integrated Spatial Systems	GEOM30013 Land Administration Systems	Science Elective	Breadth/Science

Mid-year intake					
First Year	Semester 2	MAST10006 Calculus 2	ENGR10003 Engineering Systems Design 2	Science Elective	Breadth
	Semester 1	MAST10007 Linear Algebra	ENVS10006 Mapping Environments	Science Elective	Breadth
Second Year	Semester 2	GEOM20015 Surveying and Mapping	COMP20005 Engineering Computation	Science Elective	Breadth
	Semester 1	GEOM20013 Applications of GIS	GEOM30009 Imaging the Environment	Science Elective	Breadth
Third Year	Semester 2	GEOM30012 Integrated Spatial Systems	GEOM30013 Land Administration Systems	Science Elective	Breadth/Science
	Semester 1	CVEN30008 Engineering Risk Analysis	Science Elective	Science Elective	Breadth/Science

**\*These sample study plans assume that students have achieved a study score of at least 29 in VCE Specialist Mathematics 3/4, or equivalent. If students have not completed this previously, they may first need to enrol in MAST10005 Calculus 1 in their first semester**

MAJOR CORE	MAJOR SELECTIVE
MAJOR CORE PREREQUISITE	MAJOR SELECTIVE PREREQUISITE
RECOMMENDED	BREADTH

## 41. Zoology

Zoology major					
First Year	Semester 1	BIOL10004 Biology of Cells and Organisms	Science Elective	Science Elective	Breadth
	Semester 2	BIOL10005 Genetics & The Evolution of Life	Science Elective	Science Elective	Breadth
Second Year	Semester 1	EVSC20004 Blue Planet-Intro to Marine Environments	Science Elective	Science Elective	Breadth/Science Elective
	Semester 2	ECOL20003 Ecology	GENE20002 Genes and Genomes	Science Elective	Breadth
Third Year	Semester 1	ZOOL30008 Experimental Marine Biology	ZOOL30006 Animal Behaviour	ECOL30007 Marine Ecosystems: Ecology & Management	Breadth/Science Elective
	Semester 2	CEDB30003 Developmental Biology	Science Elective	Science Elective	Breadth

Zoology major (Mid-year)					
First Year	Semester 2	BIOL10005 Genetics & The Evolution of Life	Science Elective	Science Elective	Breadth
	Semester 1	BIOL10004 Biology of Cells and Organisms	Science Elective	Science Elective	Breadth
Second Year	Semester 2	ZOOL20005 Animal Structure and Function	GENE20002 Genes and Genomes	Science Elective	Breadth/Science Elective
	Semester 1	GENE20001 Principles of Genetics	Science Elective	Science Elective	Breadth
Third Year	Semester 2	BIOL30002 Experimental Reproductive Physiology	CEDB30003 Developmental Biology	Science Elective	Breadth/Science Elective
	Semester 1	ZOOL30006 Animal Behaviour	GENE30001 Evolutionary Genetics and Genomics	Science Elective	Breadth

MAJOR CORE	MAJOR SELECTIVE
MAJOR CORE PREREQUISITE	MAJOR SELECTIVE PREREQUISITE
RECOMMENDED	BREADTH