

PROGRAM PLAN

BACHELOR OF SCIENCE

PROGRAM OPTION:
Single 80 Unit Major

START DATE:
Semester 2 2021

LOCATION:
Callaghan and Central Coast

This Program Plan is an enrolment guide to ensure you are on track to graduate. If at any time you wish to vary from this program plan seek advice from your Academic Program Advisor to ensure you remain on track.

 [PROGRAM HANDBOOK](#)

 [COURSE HANDBOOK](#)

NAME:

STUDENT NO.:

COURSE STATUS KEY

C = Completed

En = Enrolled

NS = Not Started

YEAR	SEMESTER	COURSE	LEVEL	STATUS	SEMESTER	COURSE	LEVEL	STATUS
YEAR 1	SEMESTER 1				SEMESTER 2	STAT1070	1000	MAJOR
						Statistics for the Sciences	DIRECTED MATH*	1000 level
YEAR 2	SEMESTER 1	SCIE1001	1000	MAJOR	SEMESTER 2	SCIE2002	1000	MAJOR
		Professional Scientific Thinking				Interdisciplinary Challenges	MAJOR	1000/2000/3000 level
YEAR 3	SEMESTER 1	SCIE2001	2000	MAJOR	SEMESTER 2	SCIE3001A	2000	MAJOR
		Professional Employment Skills				Transdisciplinary Capstone: Planning and Implementing	MAJOR	2000/3000 level
YEAR 4	SEMESTER 1	SCIE3001B	2000	MAJOR	SEMESTER 2			
		Transdisciplinary Capstone: Implementing and Communicating						

Science Majors: Biodiversity and Conservation – Biological Sciences – Chemistry (Advanced Materials) – Chemistry (Medicinal and Organic) - Earth Sciences – Geography – Mathematics – Psychology – Statistics

*Students choose their MATH Directed course based on previous mathematical background. See the [Enrolling in mathematics](#) – Maths Placement Test information.

****Elective Options include:** Science Elective Pathways or any unrestricted courses offered within the university. When choosing electives students must consider that the courses for the overall program must not exceed 100 units at 1000 level and must include a minimum of 40 units at 3000 level.

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To be eligible to graduate make sure you have completed 240 units (10 units = 1 course unless otherwise specified) which meet the following criteria:

- Core courses – 70 units.
- Directed – 10 unit MATH Directed.
- Major courses – 80 units, visit the [Program Handbook](#) for more information.
- Elective courses – 80 units – chosen from the Science Elective Pathways or any unrestricted courses offered within the University. Refer to the Science Elective Pathway documents located in the [Program Handbook](#) or visit the [Course Handbook](#) to see a list of available electives.
- Students must not exceed 100 units at 1000 level in this program.
- Students must complete a minimum of 40 units at 1000 and 2000 and a minimum of 60 units at 3000 level.
- The duration of this program is 3 year full-time (40 units per semester) or part-time equivalent.
- The maximum time to complete this program is 8 years.



Some courses have assumed knowledge and/or requisites, please refer to the individual [Course Handbook](#). Please refer to the [Program Handbook](#) for specific information on program structure. If you are intending varying from this program plan please seek advice from your [Academic Program Advisor](#).

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BIODIVERSITY AND CONSERVATION MAJOR

COMPULSORY COURSES

Complete the following compulsory courses:

ENVS1001: Environmental Science Concepts & Methods
ENVS1003: Environmental Values and Ethics
ENVS3003: Conservation Biology
ENVS3004: Ecotoxicology
ENVS3005: Animal Behaviour

DIRECTED COURSES – 2000 LEVEL

Complete 20 units from:

ENVS2004: Ecology
ENVS2005: Management of Australian Flora
ENVS2006: Ecology and Management of Wildlife

DIRECTED COURSES – 3000 LEVEL

Complete 10 units from:

ENVS3009: Advanced Water Science and Resource Management
MARI3320: Ecological Methodology
SRMT3060: Restoration Ecology
SCIE3500 Research Integrated Learning

BIOLOGICAL SCIENCES MAJOR

COMPULSORY COURSES

Complete the following compulsory courses:

BIOL1001: Molecules, Cells and Organisms
BIOL1002: Organisms to Ecosystems
BIOL2001: Molecular Lab Skills for Biological Sciences
BIOL2002: Lab Skills in Biological Systems
BIOL3001: Advanced Lab Skills in Biological Sciences

Directed Pathways – choose one of the following pathways

MICROBIOLOGY

Complete the following compulsory courses:

BIOL2090: Microbial Biology
BIOL3090: Molecular Biology
BIOL3100: Microbiology

ANIMAL AND PLANT BIOLOGY

Complete the following compulsory courses:

BIOL2220: Plant Cell Development
BIOL3020: Animal Physiology, Reproduction and Development
BIOL3090: Molecular Biology

CHEMISTRY (ADVANCED MATERIALS) MAJOR

COMPULSORY COURSES

Complete the following compulsory courses:

CHEM1010: Introductory Chemistry I
CHEM1020: Introductory Chemistry II
CHEM2110: Applied Analytical Chemistry
CHEM2210: Inorganic Chemistry
CHEM2410: Physical Chemistry
CHEM3110: Instrumental Chemical Analysis

DIRECTED COURSES – 3000 LEVEL

Complete 20 units from:

CHEM3210: Functional Materials
CHEM3410: Energy and Structure
CHEM3580: Colloids, Interfaces and Soft Matter

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CHEMISTRY (MEDICINAL AND ORGANIC) MAJOR

COMPULSORY COURSES

Complete the following compulsory courses:

CHEM1010: Introductory Chemistry I
CHEM1020: Introductory Chemistry II
CHEM2110: Applied Analytical Chemistry
CHEM2310: Organic Chemistry
CHEM2410: Physical Chemistry
CHEM3110: Instrumental Chemical Analysis

DIRECTED COURSES – 3000 LEVEL

Complete 20 units from:

CHEM3210: Metal Complexation, Structure and Reactivity
CHEM3310: Molecular Organic Synthesis
CHEM3550: Medicinal and Biological Chemistry

EARTH SCIENCES MAJOR

COMPULSORY COURSES

Complete the following compulsory courses:

GEOS1040: Earth's Dynamic Systems
GEOS1050: Earth Processes and Products
GEOS2080: Earth Science Field Course
GEOS2161: Spatial Science
GEOS3250: Advanced Spatial Science

DIRECTED COURSES – 2000 LEVEL

Complete 10 units from:

GEOS2050: River Basin Processes
GEOS2060: Soil Properties and Processes
ENVS2009: Catchment and Water Resource Management
SCIE2223: Weather and Waves

DIRECTED COURSES – 3000 LEVEL

Complete 20 units from:

ECON3006: Environmental Economics
ENVS3007: Environmental Remediation
ENVS3009: Advanced Water Science and Resource Management
GEOS3220: Coastal Environments and Processes
GEOS3280: Global Change and the Rise of Modern Environments
GEOS3340: Climate Change and Resource Management

GEOGRAPHY MAJOR

COMPULSORY COURSES

Complete the following compulsory courses:

GEOG1020: Introduction to Human Geography
GEOS1040: Earth's Dynamic Systems
GEOS2161: Spatial Science
GEOS3250: Advanced Spatial Science

DIRECTED COURSES – 2000 LEVEL

Complete 10 units from:

ENVS2002: Environmental Legislation & Planning
ENVS2008: The Sustainable Society
GEOG2080: Cities and Regions
GEOG2130: Geographies of Development
GEOS2050: River Basin Processes
GEOS2080: Earth Science Field Course
SOCS2400: Applied Social Research

DIRECTED COURSES – 3000 LEVEL

Complete 30 units from:

ENVS3001: Integrated Impact Assessment
ENVS3006: Sustainability: Theory and Practice
ENVS3007: Environmental Remediation
ENVS3008: Organisational Placement
GEOG3090: Society and Space
GEOG3300: Rethinking Development
GEOS3220: Coastal Environments and Processes
GEOS3280: Global Change and the Rise of Modern Environments
GEOS3340: Climate Change and Resource Management
ENVS3008: Organisational Placement
SCIE3500: Research and Work Integrated learning

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MATHEMATICS MAJOR

Students must complete MATH1110 as their Math Directed course

COMPULSORY COURSES

Complete the following compulsory courses:

MATH1120: Mathematics for Engineering, Science and Technology 2
MATH2242: Complex Analysis
MATH2310: Calculus of Science and Engineering
MATH2340: Linearity and Continuity
MATH2800: Ordinary Differential Equations

DIRECTED COURSES – 3000 LEVEL

Complete 30 units from:

MATH3205: Fourier Analysis
MATH3120: Algebra
MATH3700: Partial Differential Equations and Modelling
MATH3820: Numerical Methods
SCIE3500: Research Integrated Learning
STAT3800: Deterministic and Stochastic Optimisation

PSYCHOLOGY MAJOR

COMPULSORY COURSES

Complete the following compulsory courses:

PSYC1010: Psychology Introduction 1
PSYC1020: Psychology Introduction 2
PSYC2300: Cognitive Psychology
PSYC2400: Biological Psychology
PSYC3000: Advanced Research Methods and Stats in Psych
PSYC3800: Special Topics

DIRECTED COURSES – 3000 LEVEL

Complete 20 units from:

PSYC3001: Advanced Psychological Measurement
PSYC3301: Advanced Perception and Learning in Psychology
ENVS3005: Animal Behaviour

STATISTICS MAJOR

Students must complete MATH1110 as their Math Directed course

COMPULSORY COURSES

Complete the following compulsory courses:

MATH1120: Mathematics for Engineering, Science and Technology 2
STAT1300: Fundamentals of Statistics
STAT2000: Applied Statistics and Research Methods
STAT3030: Generalised Linear Models
STAT3040: Time Series Analysis
STAT3100: Systems Thinking for an Integrated Workforce
STAT3800: Deterministic and Stochastic Optimisation

DIRECTED COURSES – 2000 LEVEL

Complete 10 units from:

STAT2020: Predictive Analytics
STAT2300: Statistical Inference