

BACHELOR OF SCIENCE

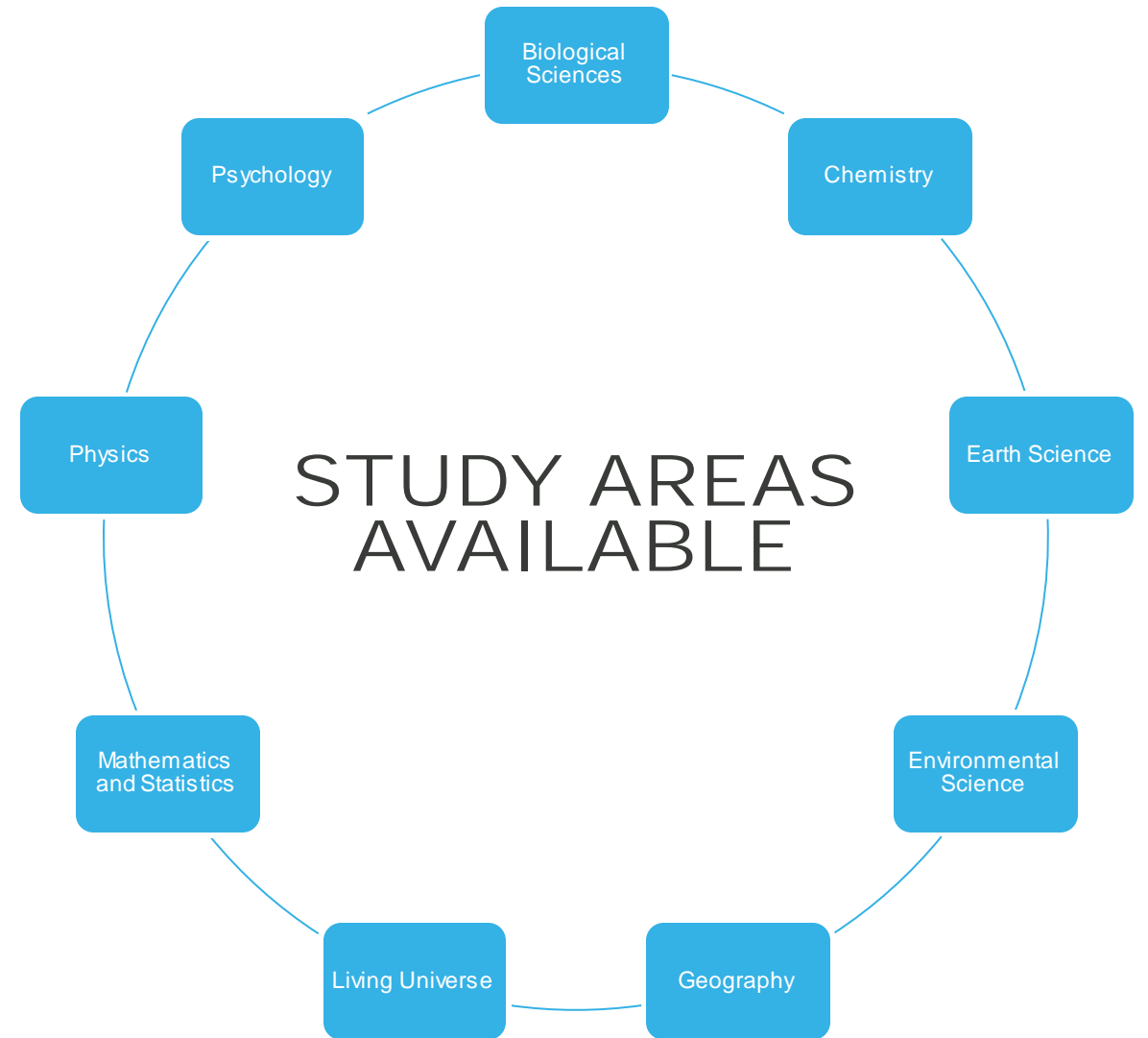
DISCIPLINE ELECTIVE PATHWAYS - CALLAGHAN



These pathways have been created to provide guidance for Bachelor of Science students wishing to specialise in a second discipline area with their elective courses.

Each pathway has been selected to complement the content of the Bachelor of Science program with consideration of pre-requisites. Please note that these pathways are suggestions only and will not be noted formally on the final degree certificate.

Students are welcome to enrol in any elective provided that they satisfy the pre-requisites, and they adhere to the rules regarding maximum number of 1000 level courses in their program. For a full list of UON courses, visit the [course handbook](#).



BIOLOGICAL SCIENCES

ANIMAL BIOLOGY		CELL AND MOLECULAR BIOLOGY	
Complete the following:		Complete the following:	
BIOL1001	Molecules, Cells and Organisms	BIOL1001	Molecules, Cells and Organisms
BIOL1002	Organisms to Ecosystems	BIOL1002	Organisms to Ecosystems
BIOL2020	Animal Physiology and Development	BIOL2050	Molecular Genetics
BIOL3020	Reproductive Physiology and Development	BIOL3090	Molecular Biology

MICROBIOLOGY		PLANT BIOLOGY	
Complete the following:		Complete the following:	
BIOL1001	Molecules, Cells and Organisms	BIOL1001	Molecules, Cells and Organisms
BIOL1002	Organisms to Ecosystems	BIOL1002	Organisms to Ecosystems
BIOL2090	Microbial Biology	BIOL2220	Plant Cell Development
BIOL3100	Microbiology	BIOL3330	Plant Development and Physiology

CHEMISTRY

CHEMISTRY	
Complete the following:	
CHEM1010	Introductory Chemistry I
CHEM1020	Introductory Chemistry II
Choose 20 units from below:	
CHEM2110	Analytical Chemistry
CHEM2201	Analytical and Medicinal Chemistry
CHEM2210	Inorganic Chemistry
CHEM2310	Organic Chemistry
CHEM2410	Physical Chemistry
CHEM2610	Environmental Chemistry
CHEM3110	Instrumental Chemical Analysis
CHEM3310	Molecular Organic Synthesis
CHEM3410	Energy and Structure

EARTH SCIENCE

EARTH SCIENCE	
Complete the following:	
GEOS1040	Earth's Dynamic Systems
GEOS1050	Earth Processes and Products
Choose 20 units from below:	
GEOS2050	River Basin Processes
GEOS2060	Soil Properties and Processes
GEOS2080	Earth Science Field course
GEOS2161	Spatial Science
GEOS2170	Optical mineralogy
GEOS2190	Structural Geology
GEOS2200	Earth Sedimentary Rocks and Environments
GEOS3110	Igneous Petrology and Crustal Evolution
GEOS3160	Energy Resources
GEOS3220	Coastal Environments and Processes
GEOS3250	Advanced Spatial Science
GEOS3280	Global Change and the Rise of Modern Environments
GEOS3340	Climate Change and Resource Management
ENVS3007	Environmental remediation

ENVIRONMENTAL SCIENCE

BIODIVERSITY AND CONSERVATION		SUSTAINABLE RESOURCE MANAGEMENT		EXTENDED ENVIRONMENTAL REMEDIATION	
Choose 10 units from below:		Complete the following:		Complete the following:	
ENVS1001	Environmental Science: Concepts and Methods	ENVS1001	Environmental Science: Concepts and Methods	BIOL1002	Organisms to Ecosystems
ENVS1003	Environmental Values and Ethics	ENVS1003	Environmental Values and Ethics	GEOS2060	Soil Properties and Processes
Complete the following:		ENVS2009	Catchment and Water Resource Management	ENVS2006	Ecology and Management of Australian Flora
ENVS2004	Ecology	Choose 10 units from below:		SRMT3060	Restoration Ecology
ENVS2005	Ecology and Management of Australian Flora	ENVS2005	Ecology and Management of Australian Flora		
ENVS2006	Ecology and Management of Australian Fauna	ENVS2006	Ecology and Management of Australian Fauna		
		ENVS2008	The Sustainable Society		

GEOGRAPHY

GEOGRAPHY	
Complete the following:	
GEOS1040	Earth's Dynamic Systems
GEOG1020	Introduction to Human Geography
GEOS2161	Spatial Science
Choose 10 units from below:	
GEOG2080	Cities and Regions
GEOG2130	Geographies of Development

LIVING UNIVERSE

LIVING UNIVERSE	
Complete the following:	
GEOS1040	Earth's Dynamic Systems
BIOL1002	Organisms to Ecosystems
PHYS2100	Introduction to Astronomy
SCIE2019	Astrobiology: Life Beyond our Planet

MATHEMATICS AND STATISTICAL SCIENCES

MATHEMATICS		STATISTICS	
<p>This elective pathway has been designed for those who have completed MATH1110 or MATH1210 as their Mathematics Directed course, or have an equivalent background. For students with MATH1210, see note below.</p> <p>Choose 10 units from below:</p>		Complete the following:	
		STAT2000	Applied Statistics and Research Methods
		STAT2010	Fundamentals of Statistics
		STAT2020	Predictive Analytics
MATH1120	Mathematics for Engineering, Science and Technology 2	Choose 10 units from below:	
MATH1220	Discovery Mathematics 2	ENGG1003	Introduction to Procedural Programming
Complete the following:		INFT1004	Introduction to Programming
MATH2310	Calculus of Science and Engineering	SENG1110	Object Oriented Programming
Choose 10 units from below:			
MATH2320	Linear Algebra		
MATH2330	Analysis		
MATH2340	Linearity and Continuity		
MATH3242	Complex Analysis		

PSYCHOLOGICAL SCIENCE

PHYSICS

PSYCHOLOGY

Complete the following:

PSYC1010	Psychology Introduction 1
PSYC1020	Psychology Introduction 2
PSYC2300	Cognitive Psychology
PSYC2400	Biological Psychology

PHYSICS

Complete the following:

PHYS1210	Advanced Physics 1
PHYS1220	Advanced Physics 2

Choose 20 units from below:

PHYS2111	Classical Physics 1
PHYS2112	Classical Physics 2
PHYS2211	Modern Physics 1
PHYS2212	Modern Physics 2
PHYS3111	Biophysics
PHYS3112	Photonics
PHYS3212	Quantum Information Science