

Science

Melbourne | Geelong



DEAKIN
UNIVERSITY

Biomedical science

Forensic science

Marine

Science

Zoology and animal science

2021 Undergraduate

Tackle the planet's biggest challenges

Science often plays a key role in finding solutions to world issues. If you'd like to improve the world around you, choose science and make an impact in broad fields like climate change, stem cell research or forensic crime. You'll gain more than a degree when you study science at Deakin. With hands-on learning, industry collaboration and expert teaching staff, you'll be well prepared for an exciting future career.

Contents

- 1 Your future in science
- 3 Disciplines
- 6 Courses
- 14 Combined courses
- 17 Contact us

Published by Deakin University in March 2020. While the information published in this guide was accurate at the time of publication, Deakin University reserves the right to alter, amend or delete details of course offerings and other information published here. For the most up-to-date course information, please view our website at deakin.edu.au.

Deakin University CRICOS Provider Code: 00113B

Your future in science

Tailor your studies to your interests

How you study science at Deakin depends on your interests and career aspirations. Study a general science degree, with many interesting and diverse study areas, so you can design a program for the direction you want to take. Alternatively, choose a specialist science degree – in biomedical, forensic, marine or zoology and animal science.

You can also combine science studies with one of the following to maximise your career options:

- arts
- commerce
- criminology
- law
- teaching.

A pathway to further research and education

A science degree is an excellent pathway degree, providing a stepping stone to postgraduate studies in teaching, nutrition or medicine, as well as a solid pathway to further research at any of Deakin's campuses, recognised for their strong research culture.

Drive your career forwards

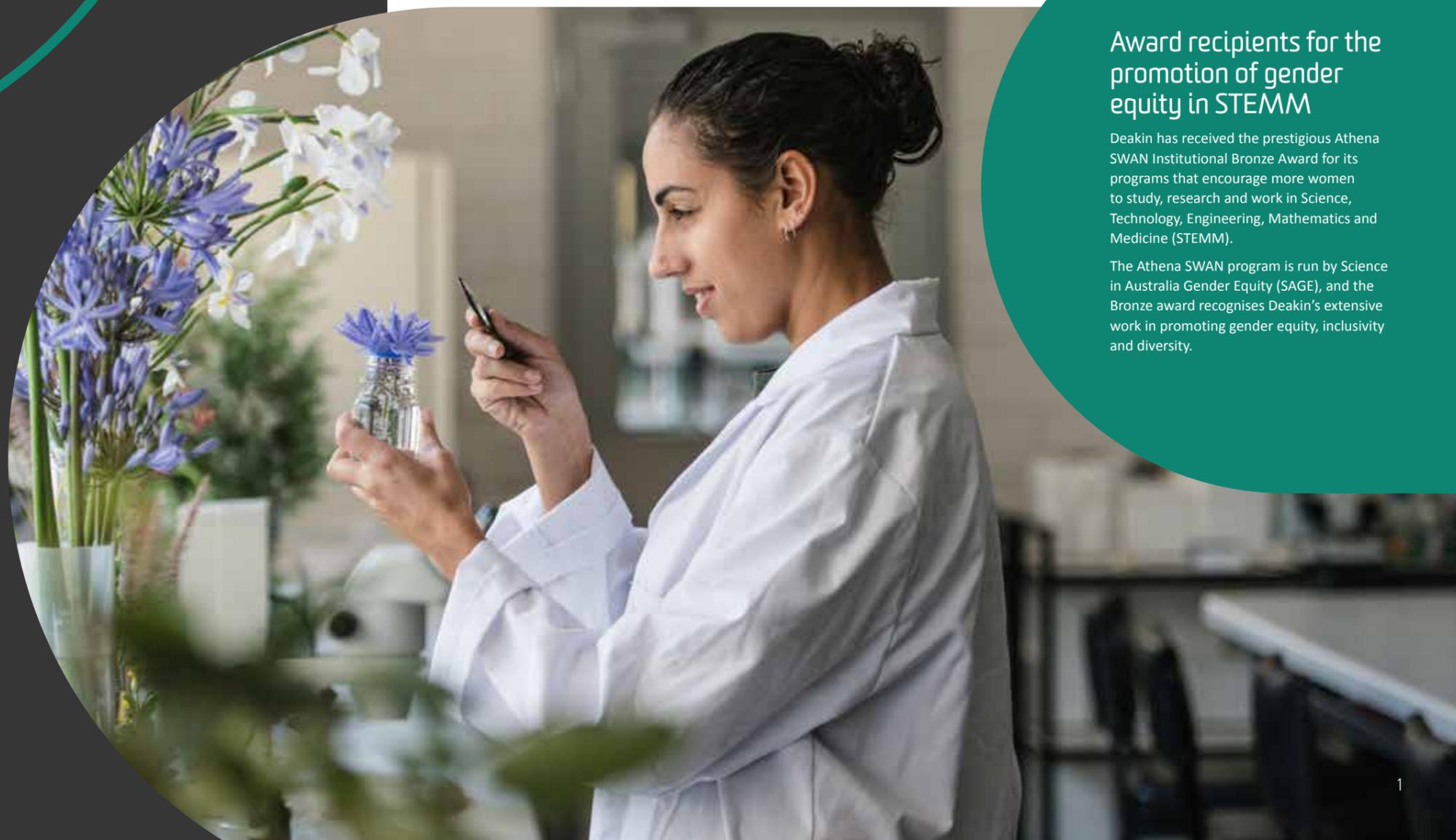
Science at Deakin opens the door to a range of careers that are stimulating, challenging and rewarding. Choose science if you're interested in finding solutions to key global issues like:

- the impact of climate change
- reducing our carbon footprint
- the use of stem cells in medical research to improve our quality of life
- using nanotechnology to create new and innovative materials.

Skills to get you a job

Gain a competitive edge in the workplace with real-world expertise and practical skills. Deakin is ranked the #1 university for both generic skills and good teaching in Victoria.¹

¹ Graduate Outcomes Survey 2019.



Award recipients for the promotion of gender equity in STEMM

Deakin has received the prestigious Athena SWAN Institutional Bronze Award for its programs that encourage more women to study, research and work in Science, Technology, Engineering, Mathematics and Medicine (STEMM).

The Athena SWAN program is run by Science in Australia Gender Equity (SAGE), and the Bronze award recognises Deakin's extensive work in promoting gender equity, inclusivity and diversity.

Your future in science

Hands-on learning so you graduate job-ready

Get practical experience and hands-on learning from your first year onwards. Professional practice units offer opportunities for:

- workplace visits
- field trips
- industry learning
- establishing valuable professional networks before graduation.

Our science and biomedical science students complete placements at leading organisations including:

- pathology laboratories (e.g. Healthscope)
- research institutions (e.g. Baker Heart and Diabetes Institute, CSIRO, Murdoch Children's Research Institute, Peter MacCallum Cancer Centre)
- hospitals (e.g. St Vincent's)
- secondary school and university laboratories.

Gain professional accreditation

Deakin is the first university in Australia, and the only university in the Asia-Pacific region, to offer a professionally accredited forensic science degree. Both the Bachelor of Forensic Science and the Bachelor of Forensic Science component of the combined course in forensic science and criminology are professionally accredited by the Chartered Society of Forensic Sciences (CSFS).

Travel the world

Deakin Abroad

Explore our various overseas programs, including a trimester abroad, short-term partner programs, faculty-led study programs, overseas internships and international volunteering opportunities. Our students have the opportunity to get hands-on experience in hospital clinics in China on a two-week placement, or get involved in a range of community health projects in Thailand, the Philippines and South Africa.

deakin.edu.au/sebe/international-wil

Enjoy state-of-the-art facilities

Access cutting-edge technology and the very best in facilities, with the Geelong Technology Precinct featuring the latest research capabilities in materials, biotechnology, chemistry and environmental engineering. Deakin also has a purpose-built crime scene training facility for our forensic science students – and hi-tech biomedical research laboratories, with links to Deakin Medical School.

Disciplines

Take a look through our disciplines (also known as study areas) to choose your area of expertise. Knowing which discipline you're interested in helps career advisers find the best course for your interests. Corresponding courses are featured in the following pages, so you can learn more about what you'll study, work experience opportunities and the types of careers you could pursue. When you choose a course, you can then pick which discipline to specialise in within that course. Visit deakin.edu.au for detailed discipline and course information, including a description of the units within each degree.

Animal biology

Discover different aspects of animal biology, including animal structure and function, evolution and evolutionary biology.

Biomedical science

Understand the science underpinning medical applications, from basic biology to specific disease processes. Gain the theoretical foundation and scientific skills to expand and apply your knowledge of human biology and health, with an emphasis on causes, diagnosis and treatment of disease at the molecular, cellular and system levels.

Cell biology

Study the molecular and biochemical basis of cells, including their physiological properties, development, function and interaction with their environment. You'll also learn about the molecular basis of disease.

Chemistry

Develop an understanding of the synthesis, separation, detection and measurement of chemical substances, their properties and reactions.

Chemistry and materials science

Gain an initial grounding in chemistry and build towards specialised skills in materials chemistry, which involves the study and design of new materials, and electrochemistry, which deals with the interaction between electrical energy and chemical change.

Environmental health

With a focus on healthy environments and healthy people, choose this study area if you're interested in working in public health policy, environmental health and other related areas.

Environmental science

Focus on the technical science aspects of environmental science, including environmental studies on the geosphere, hydrosphere, atmosphere and biosphere.

Forensic biology

Acquire the specific biological skills that are critical in the forensic science workplace. These biological-based skills complement the generic forensic science attributes developed in the core units of the forensic science course. Study in this area may lead to a career based on entomology, human anatomy and DNA-based forensic science.

Forensic chemistry

Forensic chemistry provides you with the specific chemistry skills that are critical in the forensic science workplace. These chemically based skills complement the generic forensic science attributes developed in the core units of the forensic science course. Study in this area may lead to a career based on toxicology, drug detection and chemical detection.

Forensic science

Gain formal training in the skills and techniques essential in the modern forensic field, including the examination and presentation of scientific evidence. Deakin is the first university in Australia, and the only university in the Asia-Pacific region, to offer a professionally accredited forensic science course.

Genomics

Study the genetic code of plants, animals and bacteria. This major provides an introduction to the nature of genes and genomes, as well as how they're structured, function and evolve. You'll also learn about DNA sequencing and analysis, and how an understanding of genomics relates to human health and wellbeing, the environment, biodiversity management and food production systems.

Geography

This major explores human and physical geography. Human geographers focus on the economic, social and cultural dimensions that shape our relationship with the environment. They also explore and understand the planet's many natural environments, as well as the distribution of plants and animals.

Human biology

Discover how the body works and why it works that way through studies covering a broad range of areas relevant to human biology, including physiology and genetics, and their relationship to human disease.

Infection and immunity

Build on the core skills of genetics, microbiology and immunology. This is an advanced and integrated study area that offers a deeper understanding of host-pathogen interactions, as well as the public health and clinical epidemiological burdens of infectious diseases.

Disciplines

Marine science

Gain essential knowledge and skills in ocean systems and resources through a multidisciplinary approach in the areas of marine microbiology and genomics, oceanography, coastal processes, marine modelling, marine biology, marine ecology, fisheries and aquaculture. This course will provide you with the skills required to join the greater marine science community using new marine technologies and innovative approaches to help protect and drive the sustainable future of the world's oceans.

Mathematical modelling

Acquire strong critical knowledge and develop your powers of analysis, logical thinking and problem-solving, as well as a high level of numerical ability. With an emphasis on developing solid background knowledge in the discipline, this major covers traditional subjects (calculus, algebra and discrete mathematics) and also modern topics (information modelling and data analysis), which will help you develop practical skills to implement mathematics in a variety of applications.

Medical biotechnology

Use cells and cell materials to produce pharmaceutical and diagnostic products that help treat and prevent human diseases. You'll gain a sound understanding of the core sciences underpinning biotechnology for medical advancement.

Medical genomics

Examine core genomics areas, including medical and human genomics, comparative genomics, microbial and forensic genomics, biotechnology (drug discovery) and phylogenomics. You'll also gain a sound understanding of associated methodologies including Next Generation Sequencing, high throughput genotyping, metagenomics, small RNA and transcriptome analysis, and acquire quantitative and bioinformatics skills required for genomics research and big data analysis.

Molecular life sciences

Acquire an advanced understanding of chemical, physiological and genetic processes that determine health and disease at the molecular level. You'll also develop the technical skills relevant for biomedical research.



'The facilities, particularly for science students, are incredible. The labs you complete practicals in are brand new and have all the resources needed to ensure you can learn an extensive range of practical techniques.'

Ellen Gunn
Bachelor of Biomedical Science student

Courses to careers

Visit explore.deakin.edu.au to kickstart your course and career exploration. With more than 600 paired courses and careers, it's the perfect destination for you to discover your future career.

Deakin scientist names two new tiny species

Cuong Huynh, from Deakin's School of Life and Environmental Sciences, has discovered two new species of millipedes, each smaller than a grain of rice – but both playing an important role in the breakdown and decomposition of plant litter.

In a paper recently published in the Australian Journal of Zoology, he describes how the pair belong to a group of minute 'pincushion' millipedes, named this way because they're covered in body hairs that look like tiny pins sticking out from their bodies.

Mr Huynh says it was long thought that there was just one species of the Phryssonotus millipede found in South Australia and formally described in 1923.

'But in my recent study, specimens were collected from different regions and they didn't all look the same; they had varying body lengths and the patterns formed by their body hairs also differed,' he says.

'I found three typical patterns of body hairs among the specimens I collected: a trapezoid, T-shape, or dark banding. The length-to-width ratios of their body hairs also differed.'

Next, he looked at a gene that's frequently used for separation of species called CO1 to confirm that there were indeed three different species of Phryssonotus.

He then had the honour of naming the two additional species, but the 'Huynh Millipede' was ruled out by scientific protocol. Instead the two new species were named for the geographic area they can be found in.

The trapezoid patterned species collected from the south east coast of Victoria was named *P. australis*, meaning 'southern', and the species with dark banding collected from Western Australia was named *P. occidentalis*, meaning 'western'.

'There is limited information out there on these species, and consequently they're often overlooked. By describing these species I'm hoping to help progress scientific study, giving other scientists who might come across these animals access to some information to help identify them.'



Courses

Bachelor of Biomedical Science

5323 B WP 3 T1, T2

Develop an in-depth understanding of human biology by studying the Bachelor of Biomedical Science – and play an important role in the diagnosis and treatment of diseases at molecular, cellular and system levels.

Careers

Graduates can confidently enter a range of health-related areas including:

- medical research
- genetic engineering
- the pharmaceutical industry
- pharmaceutical/medical sales
- laboratory technology.

You can also advance to honours or postgraduate studies, either in more specialised areas of biomedical science (which will enhance your professional development as a scientist), or in other disciplines including medicine (which will complement your scientific training and broaden your career opportunities).

Work experience

Professional Practice in Bioscience is a compulsory unit in the Bachelor of Biomedical Science. This means you'll have 80–160 hours' work experience in a course-related organisation, giving you insight into future career options.

You can also elect to study a range of placement and industry-based learning units, bringing together theory, site studies and laboratory investigations.

Course structure^{1,2}

This 24-credit-point course consists of 15 credit points of core units and 6 credit points from an approved major sequence.

	Trimester 1	Trimester 2	Trimester 3
Year 1	Cells and Genes Chemistry in Our World ³ or one elective unit Essential Skills in Bioscience Elective/major	Chemistry for the Professional Sciences Biology: Form and Function Physics for the Life Sciences Elective/major	
Year 2	Biochemistry Microbiology Research Methods and Data Analysis Elective/major	Genetics and Genomics Cell Biology ⁴ or major Systems Physiology Elective/major	Cell biology ⁴ OR major
Year 3	Advanced Topics in Biomedical Science Elective/major x 3	Professional Practice in Bioscience Medical Microbiology and Immunology Molecular Basis of Disease Elective/major	

deakin.edu.au/course/bachelor-biomedical-science

Majors

Students must complete one of the following majors:

- Environmental health B WP
- Infection and immunity B WP
- Medical biotechnology B WP
- Medical genomics B WP
- Molecular life sciences B WP
- Pharmaceutical science B WP

- ¹ This course structure should be used as a guide only and advice should be sought when selecting units.
- ² Academic Integrity (STP050), Career Tools for Employability (STP010) and Laboratory and Fieldwork Safety Induction program (SLE010) are compulsory 0-credit-point units that you must undertake as part of this course.
- ³ Students must complete at least one Chemistry unit (Chemistry in Our World or Chemistry for the Professional Sciences). Students who have not completed Year 12 Chemistry or equivalent may choose to do Chemistry in Our World in Trimester 1. Students who have completed Year 12 Chemistry or equivalent may choose to do Chemistry for the Professional Sciences in Trimester 2.
- ⁴ Cell biology is offered in Trimester 2 for students studying at the Melbourne Burwood Campus and Trimester 3 for students at the Geelong Waurn Ponds Campus.

Deakin code	5342	Cloud Campus	C
Course duration in years	3	Melbourne Burwood Campus	B
Trimester	T	Geelong Waterfront Campus	WF
		Geelong Waurn Ponds Campus	WP
		Warrnambool Campus	WB

The student experience

Hear from one of our biomedical science students on their experience of studying at Deakin. deakin.yt/biomed

Calling all analytical minds

The skills and knowledge you learn in biomedical science are transferable to almost any industry. Associate Professor Lambert Brau is the Associate Head of School (Development and International) at Deakin University's School of Life and Environmental Sciences. He explains that in addition to good communication skills and an eye for detail, utilising analytical thinking skills also helps to lay the perfect foundation for further study in masters programs. Read the full article at this.deakin.edu.au/career/surprising-careers-in-biomedical-science.

Gain practical 'crime scene' experience

Our purpose-built and flexible crime scene training facility offers you real-life experience of working a crime scene. With a kitchen, lounge room and bedroom set, it enables a wide range of gruesome scenarios to be staged and directly equips students with the skills they will need to succeed in the real-world. To find out more, visit deakin.edu.au/study-forensic-science.

Bachelor of Forensic Science

5324 WP 3 T1, T2

Deakin's Bachelor of Forensic Science exposes you to the full scope of modern forensic science, from simulated crime scenes to courtroom presentations. With a strong focus on practical training, you'll graduate with the skills needed to use scientific evidence to solve crimes.

Professional recognition

The Bachelor of Forensic Science is professionally accredited by the Chartered Society of Forensic Sciences (CSFS).

Careers

Through your extensive practical training, you'll graduate with the technical and soft skills needed to thrive in a range of areas including:

- chemical, biological, food and pharmaceutical industries
- forensic laboratories
- government institutions
- insurance investigations
- policing
- research science
- risk analysis.

Work experience

This course aims to provide students with a holistic experience of their role as forensic analysts. You'll have the opportunity to visit a court, a crime scene and participate in a 'moot court' which allows students to experience a simulated courtroom environment.

Explore an industry-based learning experience, available as part of the Faculty of Science, Engineering and Built Environment's work integrated learning program.

deakin.edu.au/sebe/wil

Majors

- Forensic biology WP
- Forensic chemistry WP

Course structure^{1,2}

This 24-credit-point course consists of 11 core units and a major sequence in either forensic chemistry or forensic biology.

	Trimester 1	Trimester 2
Year 1	Cells and Genes Chemistry in Our World Introduction to Statistics and Data Analysis Elective	Biology: Form and Function Chemistry for the Professional Sciences Fundamentals of Forensic Science Introducing Crime and Criminal Justice
Year 2	Introduction to Spectroscopic Principles Biochemistry Major x 2	Forensic Biology Major x 2 Elective
Year 3	Major x 2 Elective x 2	Forensic Analysis and Interpretation Elective x 3

deakin.edu.au/course/bachelor-forensic-science

- ¹ This course structure should be used as a guide only and advice should be sought when selecting units.
- ² Academic Integrity (STP050), Career Tools for Employability (STP010) and Laboratory and Fieldwork Safety Induction program (SLE010) are compulsory 0-credit-point units that you must undertake as part of this course.

Courses

Bachelor of Marine Science

S337 WP 3 T1, T2

Study marine science at Deakin's Geelong Waurn Ponds Campus and you'll gain essential knowledge and skills in ocean systems and resources through a multidisciplinary approach in the areas of marine microbiology and genomics, oceanography, coastal processes, marine modelling, marine biology, marine ecology, fisheries and aquaculture. You'll gain the skills needed to join the greater marine science community using new marine technologies and innovative approaches to help protect and drive the sustainable future of the world's oceans.

Careers

As a marine scientist, you'll gain skills across multi-disciplinary areas which allow for a diverse range of career opportunities in both research and applied fields in areas such as oceanography, marine biochemistry and biotechnology, fisheries, remote sensing, marine biology and ecology, microbiology and genomics, mathematics or economics. Further postgraduate studies, including research training, can lead to students becoming research scientists in a specific field of marine science.

Work experience

As part of the course, you'll need to undertake a compulsory professional practice unit of 80–160 hours of work experience in a course-related host organisation. You'll gain practical experience by completing a two-week placement at a course-related host organisation to provide you with opportunities

for workplace visits, field trips, industry learning and to establish valuable networks – giving you better insight into your possible career outcomes. You'll also have the opportunity to undertake a discipline-specific industry placement as part of your course. Elective units may also provide additional opportunities for work integrated learning experiences.

Course structure^{1,2}

This 24-credit-point course consists of 17 core units and seven elective units.

	Trimester 1	Trimester 2	Trimester 3
Year 1	Marine Environments Cells and Genes Chemistry in Our World Elective	Ocean Processes Introductory Mathematical Methods Elective x 2	
Year 2	Research Methods and Data Analysis Marine Microbiology Marine Biology Elective	Aquaculture and the Environment Analysing Marine Dynamics Elective	Quantitative Marine Ecology
Year 3	Professional Practice Oceanography Geographic Information Systems for Marine Environments Elective	Marine Animal Physiology Fisheries Science Oceans, Coasts and Climate Change Elective	

deakin.edu.au/course/bachelor-marine-science

¹ This course structure should be used as a guide only and advice should be sought when selecting units.
² Academic Integrity (STP050), Career Tools for Employability (STP010) and Laboratory and Fieldwork Safety Induction program (SLE010) are compulsory 0-credit-point units that you must undertake as part of this course.

Related course

Bachelor of Environmental Science (Marine Biology)

S399 WB 3 T1, T2

Gain extensive hands-on experience exploring coastal ecosystems and marine environments in an area that has some of the highest biodiversity in Australia. Learn how to sustainably manage precious marine environments with Deakin's Bachelor of Environmental Science (Marine Biology).

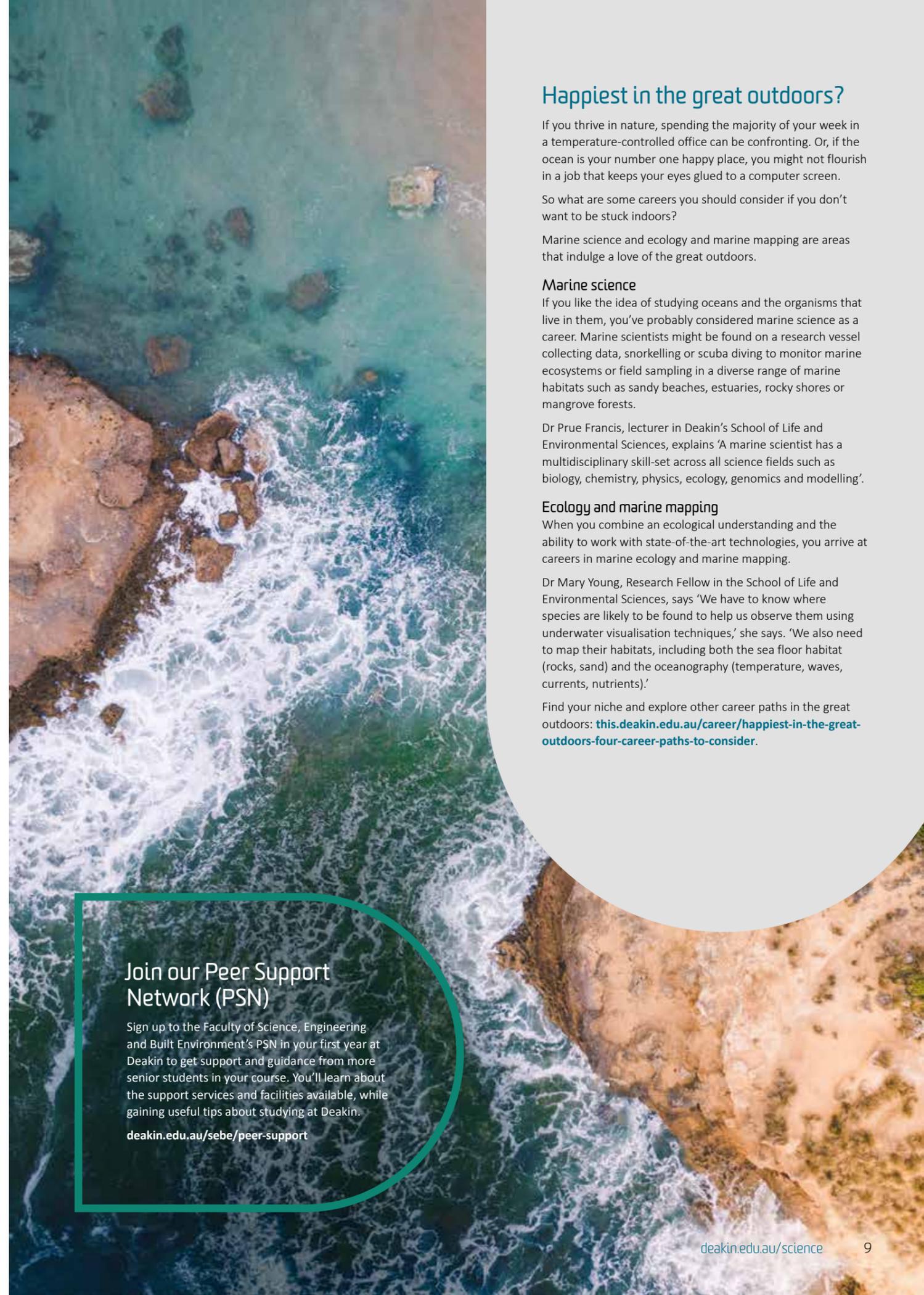
For more information about this course, please refer to Deakin's *2021 Undergraduate Environment* booklet or visit deakin.edu.au/course/bachelor-environmental-science-marine-biology.

#1 university in Victoria for student satisfaction

Year on year, our students are the most satisfied students of all Victorian universities¹. We've ranked this highly for the past 10 years, with students being particularly happy with our:

- teaching
- learning resources
- student support
- skills development
- learner engagement.

¹ Australian Graduate Survey 2010–2015, Graduate Outcomes Survey 2016–2019 (GOS), Quality Indicators for Learning and Teaching (QILT).



Happiest in the great outdoors?

If you thrive in nature, spending the majority of your week in a temperature-controlled office can be confronting. Or, if the ocean is your number one happy place, you might not flourish in a job that keeps your eyes glued to a computer screen.

So what are some careers you should consider if you don't want to be stuck indoors?

Marine science and ecology and marine mapping are areas that indulge a love of the great outdoors.

Marine science

If you like the idea of studying oceans and the organisms that live in them, you've probably considered marine science as a career. Marine scientists might be found on a research vessel collecting data, snorkelling or scuba diving to monitor marine ecosystems or field sampling in a diverse range of marine habitats such as sandy beaches, estuaries, rocky shores or mangrove forests.

Dr Prue Francis, lecturer in Deakin's School of Life and Environmental Sciences, explains 'A marine scientist has a multidisciplinary skill-set across all science fields such as biology, chemistry, physics, ecology, genomics and modelling'.

Ecology and marine mapping

When you combine an ecological understanding and the ability to work with state-of-the-art technologies, you arrive at careers in marine ecology and marine mapping.

Dr Mary Young, Research Fellow in the School of Life and Environmental Sciences, says 'We have to know where species are likely to be found to help us observe them using underwater visualisation techniques,' she says. 'We also need to map their habitats, including both the sea floor habitat (rocks, sand) and the oceanography (temperature, waves, currents, nutrients).'

Find your niche and explore other career paths in the great outdoors: this.deakin.edu.au/career/happiest-in-the-great-outdoors-four-career-paths-to-consider.

Join our Peer Support Network (PSN)

Sign up to the Faculty of Science, Engineering and Built Environment's PSN in your first year at Deakin to get support and guidance from more senior students in your course. You'll learn about the support services and facilities available, while gaining useful tips about studying at Deakin.

deakin.edu.au/sebe/peer-support

Courses

Deakin code **S342**
 Course duration in years **3**
 Trimester **T**

Cloud Campus **C**
 Melbourne Burwood Campus **B**
 Geelong Waterfront Campus **WF**
 Geelong Waurn Ponds Campus **WLP**
 Warrnambool Campus **WB**

Bachelor of Science¹

S320 **B** **WLP** **3** T1, T2

Deakin's Bachelor of Science prepares you for the exciting world of scientific discovery. Forge your own unique path by choosing from a range of major sequences to solve tomorrow's global issues through science and discovery.

Careers

The flexibility of this course opens up a world of employment possibilities. You'll graduate with the skills needed to unlock tomorrow's breakthroughs, solve global issues with science and make a real difference to the health of communities.

A science degree with Deakin can lead to roles including:

- chemist
- clinical trial leader
- environmental consultant
- environmental manager
- field botanist
- park ranger
- project manager
- research scientist
- scientific editor
- secondary teacher
- technician.

Work experience

As a Deakin science student, you gain experience through innovative practical programs, including professional practice units. This means you'll have 80–160 hours work experience in a course-related organisation, so you can apply and consolidate knowledge gained in your course, experience workplace culture and workplace practices, explore career options, develop a professional network and prepare for real-life settings in which today's science graduates work.

You can also undertake an industry-based learning experience as part of the work-integrated learning program.

deakin.edu.au/sebe/wil

Majors

- Animal biology **B** **WLP**
- Cell biology **B** **WLP**
- Chemistry **WLP**
- Chemistry and materials science **B**
- Environmental science **B**
- Genomics **B** **WLP**
- Geography **B**
- Human biology **B** **WLP**
- Mathematical modelling **C** **B** **WLP**
- Plant biology **B**

▶ What's it really like to study science?

Hear from our students on the diverse study opportunities available and benefits of the hands-on, practical approach at Deakin.

deakin.yt/study-sci



'I like that Deakin lets you do your course how you want to. I have a lot of choice in my units, when and how much I study during the year, if I want to study abroad, if I'd like to participate in uni clubs and whether I want to study in groups like PASS or privately.'

Madeleine Nicolls
Bachelor of Science student

Course structure^{2,3}

This 24-credit-point course consists of eight core units and 6 credit points from an approved science major sequence.

	Trimester 1	Trimester 2
Year 1	Cells and Genes Chemistry in Our World ⁴ or one elective unit Ecology and the Environment Elective	Physics for the Life Sciences Chemistry for the Professional Sciences ⁴ or one elective unit Introduction to Statistics and Data Analysis Major
Year 2	Communicating Science Ideas Major Elective x 2	Science and Society Major x 2 Elective
Year 3	Community Science Project Major Elective x 2	Major Elective x 3

deakin.edu.au/course/bachelor-science

- 1 The Bachelor of Science is currently being redeveloped at the time this publication went to print. For the latest information, please visit deakin.edu.au/course/bachelor-science.
- 2 This course structure should be used as a guide only and advice should be sought when selecting units.
- 3 Academic Integrity (STP050), Career Tools for Employability (STP010) and Laboratory and Fieldwork Safety Induction program (SLE010) are compulsory 0-credit-point units that you must undertake as part of this course.
- 4 Students must complete at least one Chemistry unit (Chemistry in Our World or Chemistry for the Professional Sciences). Students who have not completed Year 12 Chemistry or equivalent may choose to do Chemistry in Our World in Trimester 1. Students who have completed Year 12 Chemistry or equivalent may choose to do Chemistry for the Professional Sciences in Trimester 2.

Honours in science

Deakin's science courses let you undertake an additional year of specialised study, so you can focus on what you're really passionate about.

- Develop an in-depth knowledge of a particular discipline through research after you complete your undergraduate degree.
- Gain entry into further research study.
- Get a competitive edge in the job market.

deakin.edu.au/course/bachelor-science-honours

Love maths? Consider these four careers

If you're a fan of numbers, logic, and problem solving, you probably excel at maths.

Enjoying and being good at maths opens a lot of career doors, according to Dr Tim Bodisco, a senior lecturer in mechanical engineering in Deakin's School of Engineering.

'Maths teaches you to think logically and equips you with the skills to develop models that help us understand the world or predict changes in the future,' he says.

Explore four different fields in engineering, wildlife and conservation biology, information technology and construction management that use maths to explain real world problems and create a brighter future for society.

this.deakin.edu.au/career/love-maths-consider-these-four-careers



Courses

Deakin code **S342**
 Course duration in years **3**
 Trimester **T**

Cloud Campus **C**
 Melbourne Burwood Campus **B**
 Geelong Waterfront Campus **WF**
 Geelong Waurn Ponds Campus **WP**
 Warrnambool Campus **WB**

Bachelor of Zoology and Animal Science 369 WP 3 T1, T2

Deakin's Bachelor of Zoology and Animal Science lets you get hands-on with animals, big and small. Apply the latest zoology theory and research in real-world settings, and explore the potential effects environmental change may have on evolution, disease and physiology of animals. Develop evidence-based decision-making skills valued by industry.

Careers

Employers value Deakin graduates' range of practical experience and evidence-based decision-making skills. You'll be well-placed to explore opportunities in areas including:

- environmental monitoring and management
- government quarantine
- private environmental consulting
- wildlife biology
- zoological research.

Graduates typically take on roles such as:

- collection managers of aquaria and zoological gardens
- environmental managers
- pest management officers
- primary and secondary teachers (with relevant teaching qualifications)
- research assistants.

Further postgraduate studies, including research training either in Australia or overseas, can also lead to becoming a research scientist in a specific field, museum curator or even a university academic.

Work experience

A professional practice unit lets you complete a placement as part of your course. This means you'll gain 80–160 hours' work experience in a course-related organisation, providing insight into future career options. You can also undertake an industry-based learning experience as part of the Faculty of Science, Engineering and Built Environment's work integrated learning program.

deakin.edu.au/sebe/wil

Course structure^{1,2}

This 24-credit-point course consists of 17 credit points of core units and 7 credit points of electives.

	Trimester 1	Trimester 2	Trimester 3
Year 1	Cells and Genes Chemistry in Our World ³ or one elective unit Ecology and the Environment Elective	Biology: Form and Function Physics for the Life Sciences Physical Geography Chemistry for the Professional Sciences ³ or one elective unit	
Year 2	Animal Diversity Research Methods and Data Analysis Marine Biology Elective	Vertebrate Structure and Function Genetics and Genomics Animal Behaviour Elective	Zoological Field Studies
Year 3	Sensory Neurobiology and Behaviour Evolution Ecological and Conservation Genetics Professional Practice	Disease Ecology and Epidemiology Elective x 2	

deakin.edu.au/course/bachelor-zoology-and-animal-science

- ¹ This course structure should be used as a guide only and advice should be sought when selecting units.
- ² Academic Integrity (STP050), Career Tools for Employability (STP010) and Laboratory and Fieldwork Safety Induction program (SLE010) are compulsory 0-credit-point units that you must undertake as part of this course.
- ³ Students must complete at least one Chemistry unit (Chemistry in Our World or Chemistry for the Professional Sciences). Students who have not completed Year 12 Chemistry or equivalent may choose to do Chemistry in Our World in Trimester 1. Students who have completed Year 12 Chemistry or equivalent may choose to do Chemistry for the Professional Sciences in Trimester 2.

World-first study reveals environmental influences change our genes' behaviour

In a study of pregnant women, a team of Deakin scientists has shown in humans for the first time that pregnancy can induce long-term epigenetic changes to our bodies, with major implications for understanding, preventing and treating disease.

The findings of a recent study from Deakin's Centre for Cellular and Molecular Biology, within the School of Life and Environmental Sciences, showed women experience major molecular changes during pregnancy that could remain with them well after their pregnancy has ended.

The changes are 'epigenetic' – meaning they're not a mutation of the gene's structure, but a change to how genes behave.

Centre Director and lead researcher, Professor Leigh Ackland, explains that while pregnancy is a critical period of hormonal changes, very little is known about epigenetic changes associated with the reproductive cycle.

'This study highlights how the physical effects of pregnancy are ongoing, and how once you go through pregnancy, your body is altered at the most microscopic level,' Professor Ackland says.

'Long-term epigenetic changes can lead to increased risks of disease for the next generation.

Studies have previously shown the offspring of women with diabetes have an increased risk of developing obesity, glucose intolerance and type 2 diabetes.'

Professor Ackland's research is of major significance to the medical research community because it shows in people for the first time that their epigenetic fingerprint can change as a result of external factors.

'This has been seen in the laboratory or with animals before, but not human populations,' she says.

'It contributes to a greater understanding of how epigenetic factors are giving scientists a much more sophisticated understanding of physiology.'

'Increasing numbers of students are taking the opportunity to undertake overseas placements. This then ignites their interest to pursue unexpected career paths.'

Associate Professor Lambert Brau
 Deputy Head of School (Burwood)
 School of Life and Environmental Sciences



Courses

Combined courses

Bachelor of Arts/Bachelor of Science D311 B WP 4 T1, T2, T3¹

Gain a competitive edge in the job market by studying the Bachelor of Arts/Bachelor of Science combined course. Complement your understanding of science with invaluable skills like critical thinking and strong communication, and open up a world of exciting career options once you graduate.

Professional recognition

Depending on your arts specialisation, certain majors are accredited by relevant bodies.

If you choose public relations, you'll study subjects accredited by the Public Relations Institute of Australia. Our design-related units are also recognised by the Design Institute of Australia.

Course structure

32 credit points – 16 credit points (Bachelor of Arts) and 16 credit points (Bachelor of Science), including a major from each degree. You will also be required to complete four 0-credit-point units relating to laboratory and fieldwork safety, work placements and academic integrity.

deakin.edu.au/course/bachelor-arts-bachelor-science

¹ Trimester 3 only available at the Melbourne Burwood Campus.
² Trimester 3 not available to International students.

Bachelor of Commerce/Bachelor of Science D321 B 4 T1, T2, T3²

Deakin's Bachelor of Commerce/Bachelor of Science lets you take your science career beyond the lab. Pair specialist science knowledge with a strong foundation in business disciplines and graduate ready to lead, innovate and succeed in your chosen field.

Professional recognition

Deakin Business School is in the top 1% of business schools globally by holding both AACSB and EQUIS accreditations. These prestigious accreditations are awarded to business schools that meet strict standards of quality, academic and professional excellence, and demonstrate a commitment to ongoing improvement and innovation in their courses, ensuring our graduates are employable worldwide.

Our courses are developed and reviewed with industry and professional input. Thanks to our close links with the sector, government departments, professional associations and other educational providers, commerce graduates can apply for membership to these key professional bodies (depending on units taken):

- Association of Chartered Certified Accountants (ACCA)
- Association of Financial Advisers (AFA)
- Australian Human Resources Institute (AHRI)
- Australian Marketing Institute (AMI)
- Certified Practising Accountants (CPA)
- Chartered Accountants Australia and New Zealand (CA ANZ)
- Financial Adviser Standards and Ethics Authority (FASEA)

Deakin code	S342	Cloud Campus	C
Course duration in years	3	Melbourne Burwood Campus	B
Trimester	T	Geelong Waterfront Campus	WF
		Geelong Waurn Ponds Campus	WP
		Warrnambool Campus	WB

- Financial Planning Association of Australia (FPA)
- Institute of Managers and Leaders (IML)
- Institute of Public Accountants (IPA).

Course structure

32 credit points – 16 credit points (Bachelor of Commerce) and 16 credit points (Bachelor of Science), including a major from each degree. You'll also be required to complete three 0-credit-point units relating to laboratory and fieldwork safety, work placements and academic integrity.

deakin.edu.au/course/bachelor-commerce-bachelor-science

Bachelor of Forensic Science/Bachelor of Criminology D329 WP 4 T1, T2

Become a crime scene expert by studying the Bachelor of Forensic Science/Bachelor of Criminology, a combined course that trains you to piece together the many facets of crime, from understanding offender motives to unlocking hidden details in evidence.

Professional recognition

The Bachelor of Forensic Science is professionally accredited by the Chartered Society of Forensic Sciences (CSFS).

Course structure

32 credit points – 16 credit points (Bachelor of Criminology) and 16 credit points (Bachelor of Forensic Science), including a major in forensic biology or forensic chemistry. You'll also be required to complete four 0-credit-point units relating to laboratory and fieldwork safety, work placements and academic integrity.

deakin.edu.au/course/bachelor-forensic-science-bachelor-criminology



Barwon Water Scholarship for Women in STEM

Female students commencing their first year of study in a course offered by the Faculty of Science, Engineering and Built Environment at the Geelong Waurn Ponds Campus or Geelong Waterfront Campus, are encouraged to apply for a Barwon Water Scholarship for Women in STEM. This scholarship is valued at \$2000 per year, with a total scholarship value of \$6000.

deakin.edu.au/barwon-water-women-scholarship

Bachelor of Science/Bachelor of Laws D331 B 5 T1, T2

The commercialisation of rapidly evolving technologies has opened the door to a new kind of expert with specialist knowledge in both science and law. Study Deakin's Bachelor of Science/Bachelor of Laws to graduate with an increasingly sought-after skill set, to succeed in either field – or where science and law intersect.

Professional recognition

The Bachelor of Laws fulfils the academic requirements to practise as an Australian lawyer, as set by the Victorian Legal Admissions Board (VLAB).

After completion, you'll be required to work for one year as a legal trainee or undertake a practical legal training course before admission.

Course structure

40 credit points – 24 credit points (Bachelor of Laws) and 16 credit points (Bachelor of Science). In addition, you will be required to complete four 0-credit-point units relating to laboratory and fieldwork safety, work placements and academic integrity.

deakin.edu.au/course/bachelor-science-bachelor-laws

Bachelor of Science/Master of Teaching (Secondary)¹ D304 B 4 T1

Fast track your studies and gain a postgraduate teaching qualification in just four years with the Bachelor of Science/Master of Teaching (Secondary). This course prepares you with the attributes and discipline-specific knowledge to become a lower to senior secondary school teacher in Australia.

Professional recognition

The Master of Teaching (Secondary) is accredited by the Victorian Institute of Teaching (VIT). Students are eligible to apply for registration with VIT upon successful completion of this degree for the purposes of teacher registration in Victoria.

Careers

Graduates of the Bachelor of Science/Master of Teaching (Secondary) are qualified to teach in secondary schools within Victoria, in the private, independent or public education sectors.

Your specialisations and advanced knowledge will also open doors to roles in:

- community services
- government agencies
- not-for-profit organisations.

Professional experience

This course includes 60 days of supervised professional experience placements. A current Working with Children Check is required before beginning school experience.

Course structure

36 credit points, including 24 credit points at undergraduate level, 12 credit points at postgraduate level, plus 60 days of supervised professional experience². You will also be required to complete three 0-credit-point units relating to laboratory and fieldwork safety, work placements and academic integrity.

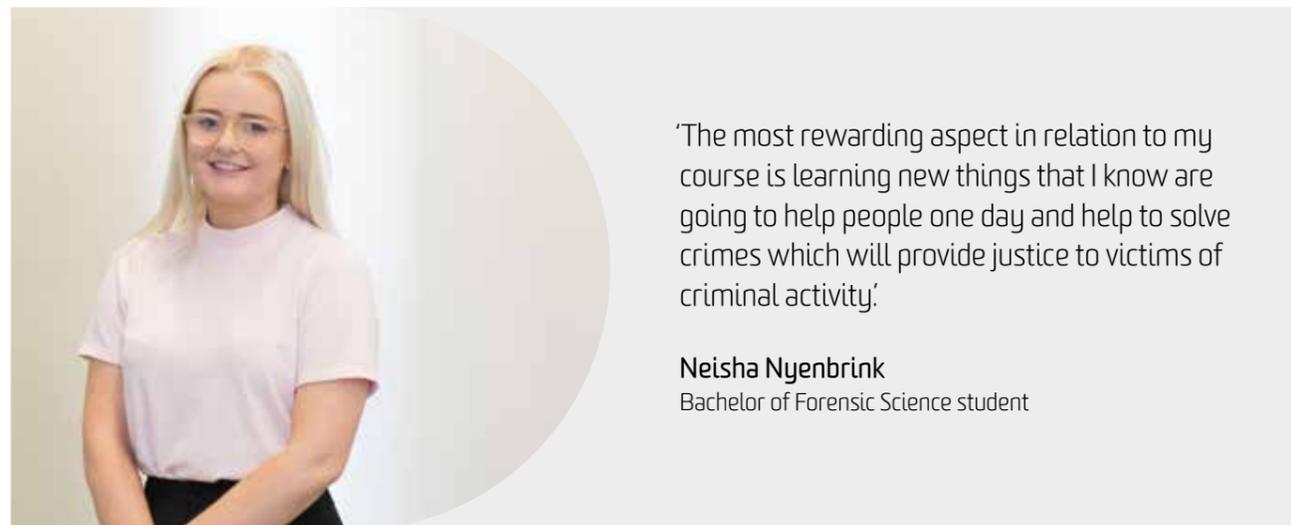
Teaching method areas

Alongside core education studies you will complete studies in two teaching specialist areas.

Choose from:

- biology
- chemistry
- environmental science
- general science
- geography
- mathematics.

deakin.edu.au/course/bachelor-science-master-teaching-secondary



'The most rewarding aspect in relation to my course is learning new things that I know are going to help people one day and help to solve crimes which will provide justice to victims of criminal activity.'

Neisha Nyenbrink
Bachelor of Forensic Science student

¹ The fast-tracked postgraduate level of study means that graduates are ready to teach after just four years of study. This is achieved through a compulsory Trimester 3 study in year 3 of the program.
² All professional experience placements must be undertaken in an approved school within Australia.

Course and entry requirements	Campus and ATAR	Course duration	Trimester intakes	Fee ¹
Bachelor of Biomedical Science S323 Y12 ^{2,3} VCE units 3 and 4 – a study score of at least 25 in English (EAL) or at least 20 in English other than EAL. NY12 ^{3,4} As for Year 12 or equivalent, for further information refer to deakin.edu.au/course/S323	B 80.15 WP 72.50	3	T1, T2	\$9429
Bachelor of Forensic Science S324 Y12 ^{2,3} VCE units 3 and 4 – a study score of at least 25 in English (EAL) or at least 20 in English other than EAL. NY12 ^{3,4} As for Year 12 or equivalent, for further information refer to deakin.edu.au/course/S324	WP 60.40	3	T1, T2	\$8989
Bachelor of Environmental Science (Marine Biology) S399 Y12 ^{2,3} VCE units 3 and 4 – a study score of at least 25 in English (EAL) or at least 20 in English other than EAL. NY12 ^{3,4} As for Year 12 or equivalent, for further information refer to deakin.edu.au/course/S399	WB 52.40	3	T1, T2	\$9483
Bachelor of Marine Science S337 Y12 ^{2,3} VCE units 3 and 4 – a study score of at least 25 in English (EAL) or at least 20 in English other than EAL. NY12 ^{3,4} As for Year 12 or equivalent, for further information refer to deakin.edu.au/course/S337	WP 66.95	3	T1, T2	\$9527
Bachelor of Science S320 Y12 ^{2,3} VCE units 3 and 4 – a study score of at least 25 in English (EAL) or at least 20 in English other than EAL. NY12 ^{3,4} As for Year 12 or equivalent, for further information refer to deakin.edu.au/course/S320	B 65.35 WP 60.00	3	T1, T2	\$9366
Bachelor of Zoology and Animal Science S369 Y12 ^{2,3} VCE units 3 and 4 – a study score of at least 25 in English (EAL) or at least 20 in English other than EAL. NY12 ^{3,4} As for Year 12 or equivalent, for further information refer to deakin.edu.au/course/S369	WP 65.10	3	T1, T2	\$9320
Bachelor of Arts/Bachelor of Science D311 Y12 ^{2,3} VCE units 3 and 4 – a study score of at least 25 in English (EAL) or at least 20 in English other than EAL. NY12 ^{3,4} As for Year 12 or equivalent, for further information refer to deakin.edu.au/course/D311	B 66.65 WP 67.55	4	T1, T2, T3 ⁵	\$8103
Bachelor of Commerce/Bachelor of Science D321 Y12 ^{2,3} VCE units 3 and 4 – a study score of at least 25 in English (EAL) or at least 20 in English other than EAL. NY12 ^{3,4} As for Year 12 or equivalent, for further information refer to deakin.edu.au/course/D321	B 82.05	4	T1, T2, T3 ⁶	\$10,391
Bachelor of Forensic Science/Bachelor of Criminology D329 Y12 ^{2,3} VCE units 3 and 4 – a study score of at least 25 in English (EAL) or at least 20 in English other than EAL. NY12 ^{3,4} As for Year 12 or equivalent, for further information refer to deakin.edu.au/course/D329	WP 65.35	4	T1, T2	\$8743
Bachelor of Science/Bachelor of Laws D331 Y12 ^{2,3} VCE units 3 and 4 – a study score of at least 35 in English (EAL) or 25 in English other than EAL. NY12 ^{3,4} As for Year 12 or equivalent, for further information refer to deakin.edu.au/course/D331	B 91.80	5	T1, T2	\$10,615
Bachelor of Science/Master of Teaching (Secondary)^{7,8,9} D304 Y12 ^{2,3} VCE units 3 and 4 – a study score of at least 25 in English (EAL) or at least 20 in English other than EAL. NY12 ^{3,4} As for Year 12 or equivalent, for further information refer to deakin.edu.au/course/D304 ADMISSION REQUIREMENTS There is a two-step admissions process for the combined courses. To be eligible for the undergraduate component students must meet the minimum entry requirements for the Bachelor of Science (S300). To proceed to the Master of Teaching (Secondary) students must earn a Weighted Average Mark (WAM) of 60 during their undergraduate studies. Additional requirements may apply.	B 67.75	4 ¹⁰	T1	\$9375

1 The 2020 indicative Commonwealth Supported Place (CSP) fee is based on a typical enrolment for an Australian domestic student enrolled in two trimesters of full-time study, or 8 credit points, unless otherwise indicated. This fee should be used as a guide only and is subject to change.

2 Recent secondary education applicants include current Year 12 students in 2020, as well as Year 12 graduates from 2019 and 2018.

3 International student entry requirements can be found at: deakin.edu.au/international-students.

4 There are four categories under which non-Year 12 applicants may apply to Deakin:
 – applicants with higher education study
 – applicants with Vocational Education and Training (VET) study
 – applicants with work and life experience
 – applicants who completed Year 12 in 2017 or earlier.
 Visit deakin.edu.au/course and head to the course of interest to find out further details on admission requirements.

5 Trimester 3 intake is only available at the Melbourne Burwood Campus.

6 Trimester 3 intake is not available to international students.

7 Students are required to apply for a Working with Children Check before commencing school experience.

8 Students are also required to complete two 0-credit-point units, ELN010 and ELN011, as part of the Literacy and Numeracy Test for Initial Teacher Education (LANTITE), in order to graduate from their course.

9 Students applying to all initial teacher education courses are required to sit the CASPer test, a non-academic assessment. Please be advised the cost of the CASPer test is a responsibility borne by individual applicants. Deakin University will not be able to reimburse any test costs. Find out more at deakin.edu.au/teaching.

10 Trimester 3 in year 3 is a compulsory study period.

Cloud Campus **C**
 Melbourne Burwood Campus **B**
 Geelong Waterfront Campus **WF**
 Geelong Warrn Ponds Campus **WP**
 Warrnambool Campus **WB**

Recent secondary education **Y12**
 Non-Year 12 **NY12**

Contact us

We're here to help

We have staff at each of our campuses who are more than happy to answer your general queries.

Prospective student enquiries

Domestic students

1800 693 888
myfuture@deakin.edu.au

International students

+61 3 9627 4877
study@deakin.edu.au

Discover Deakin

To stay up to date with all course information sessions and events for prospective undergraduate students, visit deakin.edu.au/discover-deakin.

Social media at Deakin

-  facebook.com/DeakinUniversity
-  facebook.com/DeakinSciTech
-  twitter.com/Deakin
-  twitter.com/DeakinSEBE
-  instagram.com/DeakinUniversity
-  Search Deakin University

Other useful websites

- vtac.edu.au
- studyassist.gov.au
- myfuture.edu.au
- youth.gov.au
- youthcentral.vic.gov.au

this.

Advice for life, learning and career

Visit this.deakin.edu.au to help you reach your potential in Year 12 and beyond. Hear from academic experts, industry professionals and inspirational students.

Deakin understands that evidencing and articulating your capabilities is vital to gaining opportunities. Deakin Hallmarks are prestigious University awards that recognise students' outstanding achievements and capabilities that are key to employment success. After graduating, they offer students the opportunity to differentiate themselves to employers. To find out more visit deakin.edu.au/hallmarks, including how Hallmarks are awarded.

