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Curtin University

2021 UNDERGRADUATE COURSE GUIDE

Science

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Make tomorrow better.

scieng.curtin.edu.au



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ACADEMIC CALENDAR

	SEMESTER 2, 2020	SEMESTER 1, 2021	SEMESTER 2, 2021
Applications close*	Two weeks before orientation*		
Orientation Week	27–31 July	22–26 February	19–23 July
Semester starts	3 August	1 March	26 July
Semester ends	27 November	18 June	12 November

* Application closing dates and orientation dates are subject to change and may vary depending on the course. Dates are for Curtin Perth only. Contact other campuses directly for details.



Indigenous acknowledgement

Curtin University acknowledges the traditional owners of the land on which Curtin Perth is located, the Whadjuk people of the Nyungar Nation; and on Curtin Kalgoorlie, the Wongutha people of the North-Eastern Goldfields.

Let's make tomorrow better, together

Curtin is a vibrant, future-focused university where ideas and cultures combine to create a place of enthusiasm, endeavour and achievement.

When you join Curtin, you join a community of more than 240,000 alumni around the globe, many of whom have made a significant impact in their field.

Studying at Curtin is the beginning of a lifelong journey. We look forward to helping you begin yours.

Embark on new discoveries

If you're curious about the forces that make our world work, then Curtin is the place to explore your passion for science and turn it into a rewarding career.

Science at Curtin involves more than just lab coats and Bunsen burners. You will be offered a hands-on, industry-focused learning experience where you'll help discover solutions to fundamental scientific challenges.

Our courses are recognised internationally and many are accredited by relevant professional bodies. Depending on your course, you can explore additional interests through elective course units and double degrees (see pages 20–23), and there are opportunities to study overseas.

Throughout your course, you will be guided by our dynamic team of academics alongside researchers working on major international projects.

You'll graduate with specialised skills and relevant knowledge that meet the needs of an evolving workforce, and be ready to contribute to scientific discoveries that push the boundaries of understanding.

Study alongside leading researchers

From the moment you start at Curtin, you'll be surrounded by cutting-edge research in areas including radio astronomy, coastal and marine science, the development of new fuels, water quality improvement, nanoscience, Earth science and many more.

Our science research informs our teaching and emphasises the discovery of new knowledge, as well as the provision of solutions for industry and society.





Curtin is ranked in the top one per cent of universities worldwide

Academic Rankings of World Universities 2019



Top 10 Australian universities overall and #71 in the world for Earth and Environmental Sciences

Nature Index 2020



Top 40 in the world for Earth and Marine Sciences

QS World University Rankings Subject 2020

Get the Curtin edge

We design our courses in close collaboration with industry experts to ensure you gain the skills that employers want.



This is real-world learning

We've designed our facilities to represent actual industry workspaces, so that you when you graduate you are equipped with the relevant knowledge and confidence to work in industry settings.

Depending on your course, you could visit industrial sites or plants, complete real projects in collaboration with industry or participate in laboratory work. For example, students studying Agribusiness, Environmental Science, Coastal and Marine Science or Earth Science courses can undertake field trips to the Ningaloo Coast, Shark Bay, the eastern Pilbara, the world biodiversity hotspot in South Western Australia, or key agricultural zones.

Plus, our science courses offer final-year capstone projects where you will draw on your course experience to deliver a research or industry project with real-world impact.

It's time to connect with industry

At Curtin, we aim to provide you with maximum industry engagement, exposing you to some of Western Australia's top employers, both in and out of the classroom.

Curtin has strong industry partnerships with various industry leaders, including:

- ChemCentre
- Cisco
- CSIRO
- · Department of Health, Western Australia
- NASA
- Sanitarium.

If you undertake honours study, you may have the opportunity to work on an industry research project directly connected with the needs of a particular employer. This will enhance your career opportunities upon graduation.

Get involved in citizen science

Students and community members can participate in various Curtin-led citizen science projects.

For example, the Desert Fireball Network (DFN) is an awardwinning program that is studying meteorites to further our understanding of the origins of the Solar System.

Using a mobile app, you can report a fireball sighting, which could help Curtin's DFN research team to track and retrieve meteorites, and address some of the biggest questions in planetary science.

fireballsinthesky.com.au

Get ahead with Work Integrated Learning

Within Curtin's Faculty of Science and Engineering is a dedicated Student Engagement team that organises Work Integrated Learning (WIL) for our students. WIL is an important part of your course, enabling you to apply your new knowledge and practical skills in real work environments. WIL activities include:

- · guest lectures from industry specialists
- · professional training from industry experts
- networking events
- vacation and graduate programs
- internships

• communicating employment opportunities.

Our Student Engagement team also organises:

- student exchange opportunities
- Student Mentor Program
- visitor programs
- student orientation sessions.

Don't call them soft skills!

Some skills you can't learn in class. Critical thinking, collaboration and effective communication are examples of 'transferable' professional skills that are important to employers. Curtin provides free leadership and volunteering programs that can build your interpersonal abilities and develop your confidence.

Leadership skills

At the Curtin Leadership Centre, you can grow your skills in public speaking, teamwork, project management and self-awareness, and apply them to projects at Curtin and in the community.

curtin.edu/curtinleadership

Volunteering opportunities

If you like helping others, Curtin Volunteers! offers volunteering programs that will enrich your student experience and develop your interpersonal abilities while benefiting communities in Western Australia.

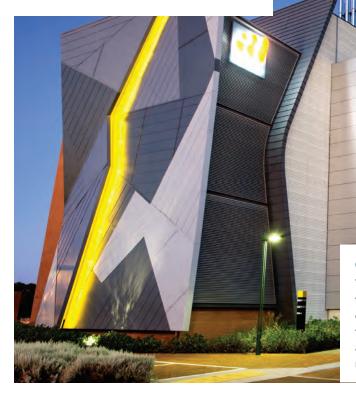
curtin.edu/volunteering

Our science facilities

These are just a few of the immersive learning facilities that we provide for our students.

The Astrodome

Curtin's main campus houses a Meade Refractor telescope delivering a live feed to Curtin astronomy researchers and students. The Astrodome also links Curtin with national and global astronomy projects.





Curtin Resources and Chemistry Precinct

The Curtin Resources and Chemistry Precinct is designed to educate and train the next generation of science and engineering innovators. The AUD\$116 million facility has four floors of laboratories, work spaces, and teaching and meeting rooms that encourage interactive learning, networking and collaboration.





Our new Biology Superlab is a large physical containment level 2 (PC2) teaching laboratory. Here, you can use leadingedge technology to investigate human pathogens and genetically modified organisms. This AUD\$7 million, worldclass laboratory also has collaborative learning spaces and informal student areas.

Field Trial Area

Curtin's Field Trial Area houses a six-room glasshouse, four hoop houses, a polyshade house, disease nursery and more than 1,000m² of growing area. It also has four temperature- and light-controlled plant growth rooms with physical and biosecurity containment level 2 (PC2 and BC2). Curtin researchers and students use this facility to perform experiments under controlled conditions and those that emulate real-word environments.



Starting salary

Curtin is ranked in the top 20 per cent nationally for starting salary. Good Universities Guide 2020





Curtin Malaysia

At Curtin Malaysia, our four-storey Faculty of Engineering and Science building is a signature work of architecture and a landmark for the Skylark Precinct of the campus. The RM20 million building has learning spaces equipped with advanced technologies for active learning, including two-way activities with Curtin Perth.

Welcome to your global community

Our global learning network offers you experiences that can lead to international careers.

Cross-campus

Our academic programs are the same across all Curtin campuses, so if your course is available at a different location, you can study there for a semester with no interruption to your progress. Each course included in this guide shows the locations where you can study it.

Exchange and study abroad

You can choose to go on a short-term program, undertake an international internship, engage in a volunteer program or challenge yourself by going on an exchange to one of our many partner universities in Africa, Asia, Europe, North America or South America.

Financial assistance

You may have access to travel grants and loans, including scholarships, travel bursaries and Commonwealth grants, to help with your travel costs.

curtin.edu/goglobal

Dubai

Our Dubai campus gives you the opportunity to study in the heart of Middle Eastern banking, tourism and trade. Its rich culture and economic growth can complement your study in arts, commerce, engineering, or IT and computing.

Mauritius

Curtin Mauritius is our newest campus offering courses in design, communications, commerce and science. It delivers a world-class education in a tropical island nation that blends cultures from Europe, Africa and Asia.

These are our partner universities across the globe!

Singapore

Curtin Singapore is located in one of Asia's major economic hubs, connecting it to the world of international business, and making it the ideal campus to study your commerce degree. You can also study a communications degree and health degrees, including nursing.

Malaysia

Located on the island of Borneo, our Malaysian campus is modern and vibrant, featuring lush greenery and lakes. You can study a range of Curtin degrees here, including commerce, engineering, science and arts.

Kalgoorlie

Our Kalgoorlie campus is located in Western Australia's historic gold mining region. You can study our renowned engineering degrees here, as well as online courses in business, education and health.

Perth

Our largest campus is just six kilometres from Perth city. It is a place of inspiration, technology-rich learning spaces, high impact research and exciting activities. Curtin Law School and other Curtin locations in central Perth strengthen our links with the legal profession and the commercial heart of Western Australia. All Curtin courses are available at our Perth campus.

Experience Perth

Located on the beautiful west coast of Australia, Perth is multicultural, prosperous and safe – an ideal destination for students and tourists alike.

Perth Weather

	High	/ Low (°C)
Summer (December to February)	30 °	17.5 °
Autumn (March to May)	26°	13.7 °
Winter (June to August)	19 °	8°
Spring (September to November)	23°	11.7 °







Getting around

The metropolitan area is serviced with an extensive road network and easy-to-use public transport.

Western Australia's best food

Try some of the city's best food at Yagan Square, and find gourmet food producers in the Swan Valley.



Shopping and culture

Perth is home to Elizabeth Quay, Forrest Place, Murray Street Mall and numerous galleries. The historic port city of Fremantle is only 15 kilometres from Perth, where the Swan River meets the Indian Ocean.





Affordable living

Perth has lower living costs than Sydney, Melbourne, Brisbane and Adelaide^{*}.

Close to campus

To the north, the suburb of Victoria Park is buzzing with a vibrant array of restaurants, pubs, beautiful parks and recreation areas.

To the south, the Canning River is home to dolphins, pelicans, swans and many other bird species. It's ideal for walking, picnicking and kayaking.





Be by the beach!

Perth's coast features breath-taking beaches and scenery. Don't forget to visit Rottnest Island – a famous holiday destination near Perth that is home to the friendly quokka.

A natural beauty

There are many magnificent parks and gardens in and around Perth. Kings Park, which is larger than New York's Central Park, showcases more than 3,000 species of WA's unique flora. Caversham Wildlife Park has many Australian animals, including kangaroos you can handfeed.

Your student life

There is a sense of community both in and out of the classroom, with collaborative learning spaces and outdoor leisure areas to enjoy between classes.



Events

Market days, multicultural week and the Guild Ball are just a few of the amazing events on campus hosted by Curtin's Student Guild – a group of students chosen to represent and advocate your needs throughout the year.



Shops on campus stock a variety of textbooks, stationery, magazines, novels, cards, art and computer equipment. There's a dry-cleaning outlet and self-serve printing and binding. STA Travel is our on-campus travel agency.



Food, glorious food

Whether you need coffee or kombucha, a quick sandwich or a hearty hot meal, you can get it on campus. We have great cafés and a variety of food trucks!



Technological convenience

Wi-fi can be accessed across the campus and there's a number of places on campus where you can recharge your devices. We also have several computer labs equipped with printing stations, scanners, graphic workstations, smart boards and current software.





Curtin has on-campus accommodation in Perth and Kalgoorlie. Living on campus enhances your uni experience – life is more convenient, you'll save time, make great friends and enjoy your independence, all in a safe, supportive and connected environment.

curtin.edu/studentaccom

Get fit, make friends

Curtin Stadium is the home of sport and fitness on campus, with a main gym, women's gym, large group fitness area, indoor cycling studio, sports hall and multi-purpose courts available for hire.

There are 21 affiliated sports clubs that cater for all skill levels and social sports offering women's, men's and mixed competitions.

Curtin Stadium also organises Curtin Experiences, a range of social activities that include surfing, hip-hop dance, Pilates and Muay Thai kickboxing. Jump in and try something new!

stadium.curtin.edu.au

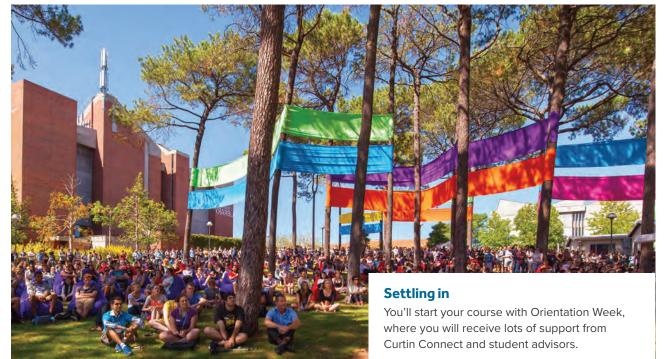




You'll love the library

The technology-rich library is open 24 hours a day during semester. There are PCs and Macs complete with software, and laptops available for short-term loan.

You can book a study room for working on group assignments, or take a 20-minute power nap in one of the library's sleep pods.



orientation.curtin.edu.au

Your student life | 15







We're here to help

Studying can be challenging. Know you are always supported with our range of health and wellbeing services based conveniently on-campus. These include a physiotherapy clinic, and a medical centre where you can see a doctor, occupational therapist, psychologist, counsellor or social worker.

Our Student Wellbeing Advisory service offers free and confidential support for any issue that may be affecting you, no matter how big or small.



Get the course advice you need Head to Building 102 Curtin Connect

for advice on courses, applications, enrolment, getting your ID card and organising your timetable.





Security and personal safety

At Curtin Perth, we provide a 24/7 security patrol, after-hour security escort, campus courtesy bus, emergency telephone stations, the SafeZone safety app, secure-card building access and well-lit, safe pathways.

Choose the science degree that's right for you

The world urgently needs scientists who have superior knowledge in their chosen discipline and can apply their expertise to real-world situations of local and global significance.



At Curtin, eligible students can choose to study either a Bachelor of Science or a Bachelor of Advanced Science.

The Bachelor of Science enables you to turn your passion for science into a rewarding career and make a difference to communities all around the world.

Our Bachelor of Advanced Science (Honours) is designed for high-achieving ATAR students who would like their degree to include a greater proportion of research elements and work experience opportunities.

Note that there are differences in the majors available within Science and Advanced Science.

Science and Advanced Science majors available

	Science	Advanced Science	Page
Agricultural Science		\checkmark	27
Biochemistry	\checkmark		29
Chemistry	\checkmark	\checkmark	30
Coastal and Marine Science	\checkmark	\checkmark	32
Computing		\checkmark	36
Data Science	\checkmark	\checkmark	38
Earth Sciences		\checkmark	40
Environmental Science	\checkmark	\checkmark	42
Extractive Metallurgy	\checkmark		44
Financial Mathematics	\checkmark	\checkmark	46
Geophysics	\checkmark		48
Industrial and Applied Mathematics	\checkmark	\checkmark	50
Mining	\checkmark		55
Molecular Genetics		\checkmark	56
Multidisciplinary Science	\checkmark		57
Physics	\checkmark	\checkmark	60

Bachelor of Science

STEM skills are at the heart of technology and innovation, and they are vital for 21st-century careers.

In Curtin's Bachelor of Sciences courses, you will learn to apply scientific principles and methodology to develop solutions to scientific problems facing communities and industry. Choosing a major enables you to focus on your strongest interests in science.

You'll also learn to use new technologies to retrieve, transform and present data and information. A Bachelor of Science will therefore give you a comprehensive foundation in your chosen field, preparing you for a range of employment opportunities within industry, government institutions and other organisations.

Course essentials

DEGREE

Bachelor of Science

GUARANTEED ATAR 2021

70

PREREQUISITES

Each major has specific prerequisite ATAR subjects.

DESIRABLE

Each major has specific desirable ATAR subjects.

STAT

May be used to demonstrate English proficiency only

PORTFOLIO ENTRY

Not accepted

INTAKE¹

Semester 1, Semester 2

STUDY MODE

Full-time, part-time

DURATION

3 years full-time

LOCATION²

Perth, Dubai, Malaysia, Mauritius

CRICOS CODE

061600D

1. Perth intake shown. Intake varies between locations.

2. Available majors vary between locations.

Visit **curtin.edu/bach-sci** for more information.

Bachelor of Advanced Science (Honours)

This course enables you to better tailor your study to suit your specific interests in science and gives you access to advanced-level units relevant to an honours degree.

You will learn core science units and choose a science major in which to specialise. You'll also undertake internal and external research experiences, and in your final year you may conduct a selfdirected honours project that adds to the scientific knowledge of your field.

Throughout your course, you'll benefit from work-integrated learning opportunities that give you practical experience and skills before you graduate – an attribute that is highly valued by employers.

This science degree is unique in Western Australia in that you will also study scientific professional practice, entrepreneurship and leadership. It is designed to ensure you graduate as a resourceful and creative professional who can respond innovatively to changing industry and employment landscapes.

Course essentials

DEGREE

Bachelor of Advanced Science (Hons)

GUARANTEED ATAR 2021

95

PREREQUISITES

Each major has specific prerequisite ATAR subjects.

DESIRABLE

Each major has specific desirable ATAR subjects.

STAT

May be used to demonstrate English proficiency only

PORTFOLIO ENTRY

Not accepted

INTAKE

Semester 1

STUDY MODE

Full-time, part-time

DURATION

4 years full-time

LOCATION

Perth

CRICOS CODE

095949E

Visit **curtin.edu/bach-advsci** for more information.

Find the course for you

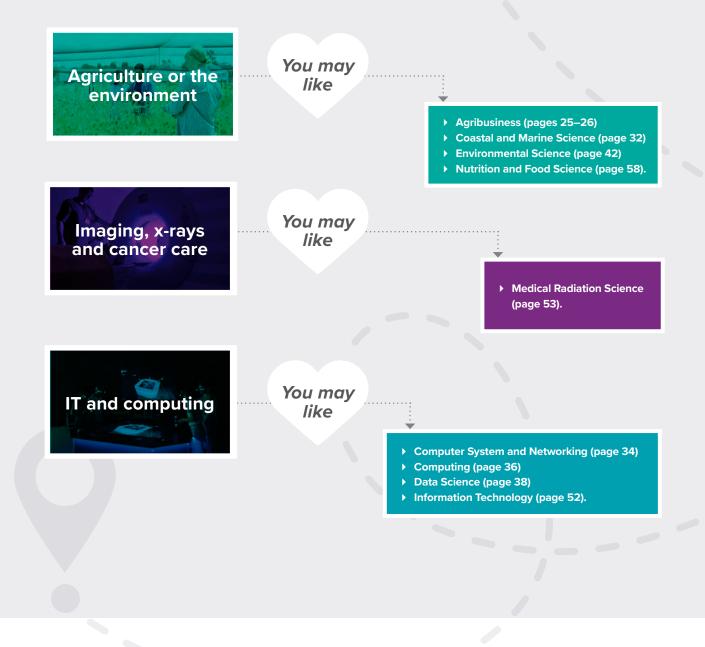
The next few pages show some of the careers that a Curtin degree can lead to, but there are many more.

Technological advancement means the jobs of tomorrow might differ to the jobs of today, but don't worry, Curtin degrees are designed to prepare you for a range of industries and careers – even those that don't exist yet!

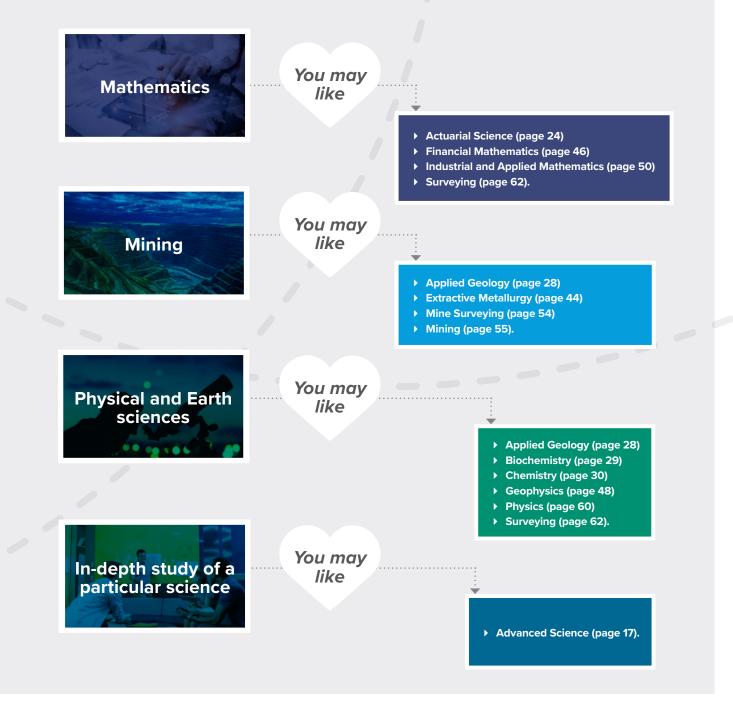
The most important thing is to study subjects you're interested in and capable of doing. Let your interests and passions guide you.



What are your interests?







Improve your career choices with a double degree

A double degree increases your skills and knowledge across two complementary learning areas, giving you more career choices and the flexibility to adapt to changing employment trends.

The condensed program structure of a double degree means it may take only 12 to 18 months longer than a single degree.

When you study a double degree, you specialise in a major within each degree. A major comprises eight units in a particular subject, although you will study more units from the degree that is listed first in the course title. You are awarded with two degrees upon successful completion of your course.

Here's how you can combine a science degree with another degree:



Engineering and Science

Course essentials

DEGREE

Bachelor of Engineering (Hons) and Bachelor of Science

GUARANTEED ATAR 2021

80

PREREQUISITES

Mathematics Methods ATAR and at least one of Physics ATAR, Chemistry ATAR, Engineering Studies ATAR, or equivalent

DESIRABLE

Mathematics Specialist ATAR, or equivalent

STAT

May be used to demonstrate English proficiency only

PORTFOLIO ENTRY

Not accepted INTAKE Semester 1, Semester 2

STUDY MODE

Full-time, part-time

DURATION

5 years full-time

LOCATION

Perth

CRICOS CODE

095950A

Course description

This double degree will give you a competitive edge to your career through an advanced understanding of the science that underpins practical engineering.

Major combinations available:

- Mechatronic Engineering and Computer Science
- Electrical and Electronic Engineering and Computer Science
- Electrical and Electronic Engineering and Data Science
- Electrical and Electronic Engineering and Physics.

For more information about combining science with an engineering degree, visit **curtin.edu/** SciEng-Double-Degrees

Chemical Engineering and Chemistry

Course essentials

DEGREE

80

Bachelor of Engineering (Chemical Engineering) (Hons) and Bachelor of Science (Chemistry)

GUARANTEED ATAR 2021

PREREQUISITES

Mathematics Methods ATAR and Chemistry ATAR, and at least one of Physics ATAR or Engineering Studies ATAR, or equivalent

DESIRABLE

Mathematics Specialist ATAR, or equivalent

STAT

May be used to demonstrate English proficiency only

PORTFOLIO ENTRY

Not accepted

INTAKE

Semester 1, Semester 2

STUDY MODE

Full-time, part-time

DURATION

5 years full-time

LOCATION

Perth

CRICOS CODE

050336F

Course description

An in-depth knowledge of chemistry unlocks more opportunities for chemical engineers.

In this double degree you will specialise in biosystems engineering, chemical engineering or oil and gas.

You'll explore the development, design and operation of processes for the extraction, conversion and recovery of materials. You'll also develop the skills for a career in a modern analytical or industrial laboratory.

Chemical Engineering and Extractive Metallurgy

Course essentials

DEGREE

Bachelor of Engineering (Chemical Engineering) (Hons) and Bachelor of Science (Extractive Metallurgy)

GUARANTEED ATAR 2021

80

PREREQUISITES

Mathematics Methods ATAR and at least one of Physics ATAR, Chemistry ATAR or Engineering Studies ATAR, or equivalent

DESIRABLE

Mathematics Specialist ATAR, or equivalent

STAT

May be used to demonstrate English proficiency only

PORTFOLIO ENTRY

Not accepted

INTAKE

Semester 1

STUDY MODE

Full-time, part-time

DURATION

5 years full-time

LOCATION

Perth

CRICOS CODE

043753C

Course description

Grounded in chemistry and environmental science, this double degree will give you comprehensive skills in improving industrial procedures in the mining sector.

You'll also learn environmental considerations, and graduate ready to take a leading role in developing processes that extract, convert and recover materials and metals.

Civil and Construction Engineering and Mining

Course essentials

DEGREE

Bachelor of Engineering (Civil and Construction Engineering) (Hons) and Bachelor of Science (Mining)

GUARANTEED ATAR 2021

80

PREREQUISITES

Mathematics Methods ATAR and at least one of the following: Physics ATAR, Chemistry ATAR or Engineering Studies ATAR, or equivalent

DESIRABLE

Mathematics Specialist ATAR or equivalent.

STAT

May be used to demonstrate English proficiency only

PORTFOLIO ENTRY

Not accepted

INTAKE

Semester 1, Semester 2

STUDY MODE

Full-time, part-time

DURATION

5 years full-time

LOCATION

Perth

CRICOS CODE

050568A

Course description

This double degree will provide you with knowledge across various science, technology and engineering areas, including geology, environmental science, surveying and computing; and electrical, civil and mechanical engineering.

You'll also learn aspects of environmental conservation, health and safety, and management of people and resources – an ideal skill set for mining and energy industries.

Science and Arts

Course essentials

DEGREE

Bachelor of Science and Bachelor of Arts

MINIMUM ATAR 2021

PREREQUISITES

Check science majors online

DESIRABLE

Check science majors online

STAT

75*

May be used to demonstrate English proficiency only

PORTFOLIO ENTRY

Not accepted

INTAKE

Semester 1, Semester 2

STUDY MODE

Full-time, part-time

DURATION

4 years full-time

LOCATION

Perth

CRICOS CODE

074653F

*May be higher depending on science major selected.

Course description

This double degree will broaden your career opportunities by supplementing your science expertise with a stronger understanding of society and culture.

You will graduate with the superior communication skills required to inspire and educate the public with the latest scientific discoveries.

Science majors available:

▷ Chemistry

- ▷ Coastal and Marine Science
- ▷ Data Science
- ▷ Environmental Biology
- Mathematics
- Physics.
- Arts majors available:
- \triangleright Anthropology and Sociology
- ▷ Chinese
- $Descript{Social}$ Digital and Social Media
- ▷ Geography
- ▷ International Relations
- > Japanese
- \triangleright Professional Writing and Publishing.

Visit **curtin.edu/Sci-Arts** for more information on majors.

Science and Commerce

Course essentials

DEGREE Bachelor of Science and Bachelor of Commerce

MINIMUM ATAR 2021

75*

PREREQUISITES

Check science majors online

DESIRABLE

Check science majors online

STAT

May be used to demonstrate English proficiency only

PORTFOLIO ENTRY

Not accepted

INTAKE

Semester 1, Semester 2

STUDY MODE

Full-time, part-time

DURATION

4 years full-time

LOCATION

Perth

CRICOS CODE

074654E

*May be higher depending on science major selected.

Visit **curtin.edu/Sci-Com** for more information on majors.

Course description

This double degree enables you to gain knowledge in a scientific discipline and develop strong foundational business skills.

It will prepare you to fulfil the financial potential of scientific discoveries and apply commercial knowledge in research environments. You'll learn to generate solutions to complex scientific, business and commercial problems.

Science majors available:

- ▷ Chemistry
- ▷ Coastal and Marine Science
- ▷ Environmental Biology
- ▷ Data Science
- ▷ Mathematics
- \triangleright Physics.
- Commerce majors available:
- ▷ Economics
- \triangleright Finance

Applied Geology and Finance

Course essentials

Bachelor of Science (Applied Geology) and Bachelor of Commerce (Finance)

GUARANTEED ATAR 2021

PREREQUISITES

Mathematics Applications ATAR, or equivalent

DESIRABLE

None STAT

Accepted

PORTFOLIO ENTRY

Not accepted

Semester 1, Semester 2

STUDY MODE

Full-time, part-time

DURATION

4 years full-time

LOCATION

Perth

CRICOS CODE

043262M

Course description

This double degree will augment your knowledge in geology – which is critical to the global economy – with knowledge of mining and exploration finance.

The finance component explores the financial services industry. You'll study areas in corporate finance and develop key understandings in investment, evaluation and the financial markets and their instruments.

This will provide the ideal skill sets for analysing the economic viability of resource exploration projects.

Science and Science

Applied Geology and Environmental Biology

Course essentials

DEGREE

Bachelor of Science (Applied Geology) and Bachelor of Science (Environmental Biology)

GUARANTEED ATAR 2021

70

PREREQUISITES

Mathematics Applications ATAR and one ATAR science course, or equivalent

DESIRABLE

None

STAT

Accepted

PORTFOLIO ENTRY

Not accepted

INTAKE

Semester 1, Semester 2

STUDY MODE

Full-time, part-time

DURATION

4 years full-time

LOCATION

Perth

CRICOS CODE

043265G

Course description

In this double degree you will study the geological processes relevant to mineral exploration and extraction, and how to manage ecosystems and rehabilitate landscapes after mining activity.

This combination of skill sets for extraction and environmental protection is increasingly important to the resources sector.

Applied Geology and Geophysics

Course essentials

Bachelor of Science (Applied Geology) and Bachelor of Science (Geophysics)

GUARANTEED ATAR 2021

75

PREREQUISITES

Mathematics Methods ATAR and Physics ATAR, or equivalent

DESIRABLE

Mathematics Specialist ATAR, or equivalent

STAT

May be used to demonstrate English proficiency only

PORTFOLIO ENTRY

Not accepted

INTAKE

Semester 1, Semester 2

STUDY MODE Full-time, part-time

DURATION

4 years full-time

LOCATION

Perth

CRICOS CODE

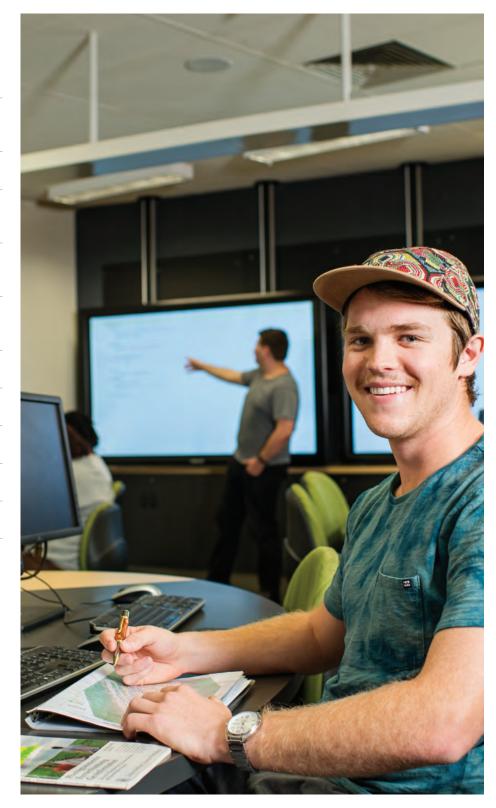
052798D

Course description

This double degree will prepare you for careers in the mining and energy industries.

You will gain an integrated understanding of the Earth's surface and internal geological processes, with an emphasis on the physical properties of matter and the transmission and dissipation of energy.

You will learn analysis and imaging methods and use various non-invasive exploration techniques.



Actuarial Science



Course essentials

DEGREE

Bachelor of Science (Actuarial Science)

GUARANTEED ATAR 2021

92

PREREQUISITES

Mathematics Methods ATAR or equivalent

DESIRABLE

Mathematics Specialist ATAR or equivalent

STAT

May be used to demonstrate English proficiency only

PORTFOLIO ENTRY

Not accepted

INTAKE

Semester 1

STUDY MODE

Full-time, part-time

DURATION

3 years full-time

LOCATION

Perth

CRICOS CODE

038785D

Visit curtin.edu/bach-actuar.

Following completion of your three-year degree (Actuarial Science major), you may apply for entry into the one-year Honours program. The entry criteria is based upon a combination of CWA (75 or better) and receiving exemptions from the majority of the Foundation Program subjects.

Course description

Actuaries analyse mathematical, statistical, demographic, financial and economic data to predict and assess the effects of long-term risks involved in financial decisions and planning.

Actuaries are tasked with solving business problems and analysing future financial events, especially when the amount or timing of a payment is uncertain.

Actuaries may also assess when and where devastating weather events may hit, to help predict risks and their associated costs for investments or insurance.

In this course, you will develop the mathematical and statistical techniques relevant to model industrial and commercial processes against a financial and economic background. You'll also learn to identify the risk factors and determine the price and cost of those risks.

In your third year you'll specialise in actuarial science or actuarial and applied statistics.

Actuarial Science

You must achieve the set minimum course-weighted average mark to be eligible to study Actuarial Science in third year.

This major is recommended for students who intend to complete further studies and qualify as an actuary. It offers students the opportunity to "I've always had an interest in mathematics. When I found out what actuaries do – applying mathematics and statistics to solve complex business problems – I knew that this challenging and interesting course would be the right choice for me."

Michael Tang

Bachelor of Science (Actuarial Science)

gain exemptions from the six subjects comprising the Foundation Program, which is the first part of the professional examinations of the Actuaries Institute. For details on the Institute's professional requirements, visit **actuaries.asn.au**.

Actuarial and Applied Statistics

This is designed for students who want to broaden their degree with more knowledge about statistics and data analysis, but who do not intend to qualify and work as an actuary. It does not include all subjects of the Foundation Program.

Professional recognition

This course is accredited by the Actuaries Institute (Australia).

Career information

Careers

- Actuary
- Business analyst
- Data scientist
- Mathematician
- Risk manager
- Statistician.

Industries

- Banking
- Education
- Financial services
- Health
- Mining, oil and gas infrastructure
- Insurance
- Public sector finance and infrastructure
- Superannuation.

Agribusiness (associate degree)

Course essentials

DEGREE Associate Degree in Agribusiness **GUARANTEED ATAR 2021** N/A PREREQUISITES None* DESIRABLE None* STAT May be used to demonstrate English proficiency only **PORTFOLIO ENTRY** Accepted* INTAKE Semester 1, Semester 2 **STUDY MODE** Full-time, part-time **DURATION** 2 years full-time

LOCATION

Geraldton (Geraldton Universities Centre), Northam (Muresk Institute)

CRICOS CODE

098315D *Entry to this course is by Portfolio application only

Visit curtin.edu/ad-agrib.

Course description

Curtin offers an Associate Degree in Agribusiness at Muresk Institute in Northam and Geraldton Universities Centre, with the intensive laboratory elements delivered at Muresk.

It will provide you with an understanding of agricultural production systems and the business principles associated with the production, processing, marketing and distribution of food.



You will graduate technically competent and commercially savvy, with contemporary agribusiness skills that enable you to work in areas such as agricultural production, farm management and agricultural equipment sales.

The course involves a high level of exposure to practical farm management and has been created in close collaboration with industry, to ensure it meets the needs of the Western Australian agriculture and food industry.

Study themes include:

- agribusiness accounting, economics, finance, management and marketing
- agricultural production systems, including animal and cropping systems
- broadacre crop and pasture science
- farm business management
- international agricultural trade
- soil and water resources.

The associate degree is also a pathway into the Bachelor of Agribusiness, providing up to 18 months credit. Pathways into other bachelor degrees are available.

Career information

Careers

- Agribusiness banking
- Agronomic and livestock sales
- Agronomic and livestock technical services
- Business consulting
- Commodity trading
- Exporting
- Financial management
- International marketing
- Professional farm management.

Industries

- Agriculture
- Agriculture marketing and supply chain logistics
- Agricultural product supply
- Banking and finance
- Farmer grower groups
- Private farming.

Agribusiness (bachelor degree)

Course essentials

DEGREE

Bachelor of Agribusiness

GUARANTEED ATAR 2021

70

PREREQUISITES

Mathematics Applications ATAR or equivalent

DESIRABLE

One of the following ATAR subjects: Animal Production Systems, Aviation, Biology, Chemistry, Earth and Environmental Science, Human Biology, Integrated Science, Marine and Maritime Studies, Physics, Plant Production Systems, Psychology, Computer Science, Applied Information Technology, or equivalent

STAT

Accepted
PORTFOLIO ENTRY
Accepted
INTAKE
Semester 1, Semester 2
STUDY MODE
Full-time, part-time
DURATION
3 years full-time
LOCATION
Perth
CRICOS CODE
029345C

Course description

Agribusiness encompasses the entire food production system from paddock to plate, linking producers with consumers. It addresses global concerns such as food security and challenges to farming systems under a changing climate, shifting markets and increasing consumer awareness.

This course is the only Bachelor of Agribusiness offered in Western Australia. It will introduce you to the scientific and business principles that can be applied to agriculture.

You will gain scientific knowledge to develop an understanding of production systems and to apply problem-solving techniques to management strategies. You'll be introduced to technologies used in soil, crop and livestock management systems.

You'll engage in research-led activities, problem-solving and self-directed experiments using our field-trial site and glasshouse facilities.

You'll work individually and as an integral part of a team, to develop your agribusiness risk and farm management skills. You'll also have opportunities to develop links with industry experts and undertake field trips to research centres, agronomic field sites and farms. This course includes a work placement to ensure you graduate with the science, technology and business skills you need for a thriving career in agribusiness. The placement can be with agriculture research, production or business industries locally or globally.

Professional recognition

Graduates are eligible for membership of the Australian Institute of Agricultural Science and Technology.

Career information

Careers

- Agricultural and resource economist
- Agricultural scientist
- Agronomist
- Biotechnologist
- Farm management and farm consultant
- Grain trader
- Research trials manager
- Soil scientist.

Industries

- Agriculture
- Agriculture marketing and supply chain logistics
- Agricultural product supply
- Banking and finance
- Farmer grower groups
- Private farming.



Visit curtin.edu/bach-agrib.

Agricultural Science



Course essentials

DEGREE

Bachelor of Advanced Science (Agricultural Science) (Hons)

GUARANTEED ATAR 2021

95

PREREQUISITES

Mathematics Methods ATAR

DESIRABLE

Biology ATAR, Chemistry ATAR

STAT

May be used to demonstrate English proficiency only

PORTFOLIO ENTRY

Not accepted

INTAKE

Semester 1

STUDY MODE

Full-time, part-time

DURATION

4 years full-time

LOCATION

Perth

CRICOS CODE

095949E

Visit curtin.edu/badvsci-agsci.

Course description

Agricultural scientists are central to the world's ability to feed its population. This course focuses on the use chemistry and biology that underpins agricultural production and the application of problemsolving techniques to management strategies.

This is a Bachelor of Advanced Science (Honours) course, designed for high-performing students to pursue their interest in science through a core of research, leadership and entrepreneurship.

You'll study broadacre cropping and livestock production systems through research-led activities, problem-solving and self-directed experiments using the Curtin field trial area and glasshouse facilities.

Your study will include advanced molecular biology and genetic experiments at Curtin's new laboratories, and you'll be introduced to satellitebased technologies used in precision agriculture for crop, pasture and livestock management systems. You'll engage with leading researchers, such as those in the Curtin-based Centre for Crop Disease Management – Australia's foremost research group for developing solutions to crop pathogens.

You'll also work in multidisciplinary teams with students in other Advanced Science majors, to explore global issues such as food security, sustainability and climate change. This course has a strong focus on practical agricultural experience and field trips. Throughout your second and third year you'll have opportunities to source immersive work experience and internships, which can be used for course credit, and participate in field tours in third year in the Western Australian grain belt.

Professional recognition

Graduates are eligible to apply for membership of the Australian Institute of Agricultural Science and Technology.

Career information

Careers

- Agricultural management/consultant
- Agricultural and resource economist
- Agricultural scientist/technologist
- Agronomist
- · Biotechnologist
- Climate scientist
- Plant breeding
- Soil scientist.

Industries

- Agriculture
- Agriculture and grain marketing
- Agricultural supply chain logistics
- · Biosecurity
- Chemical industry
- Farmer grower groups
- Food security
- · International agricultural aid
- Private farming
- Plant and animal breeding
- Government agriculture departments.

Applied Geology

Course essentials

DEGREE

Bachelor of Science (Applied Geology)

GUARANTEED ATAR 2021

70

PREREQUISITES

Mathematics Applications ATAR or equivalent

DESIRABLE

None

STAT

Accepted

PORTFOLIO ENTRY

Accepted

INTAKE

Semester 1, Semester 2¹

STUDY MODE

Full-time, part-time

DURATION

3 years full-time

LOCATION²

Perth, Kalgoorlie, Malaysia

CRICOS CODE

003875B

1. Due to unit availability, commencement in Semester 2 may increase the course duration.

2. Not all streams are offered at all locations.

Visit curtin.edu/bach-geol.

Course description

Geologists study how the Earth works, including the natural planetary processes that directly affect people – such as the formation of mineral and petroleum resources, geological hazards, climate change and environmental protection.

In this course you will gain a thorough grounding in theoretical geology with a practical emphasis on mineral, petroleum and groundwater resources and their environmental management.

In your first year you will gain a foundation in geology, chemistry, physics, maths, scientific communication and computer skills. Your second year focuses on the theoretical, laboratory and field skills required to understand geological processes. Your final year provides comprehensive coverage of one stream: Applied Geology, Mining Geology or Petroleum Geology.

The first two years of this course are based in Perth. The third-year Applied Geology stream is offered at Curtin's Perth campus, Mining Geology is offered at our Kalgoorlie campus, and Petroleum Geology is offered at Curtin Malaysia.

Applied Geology

This stream comprehensively covers the breadth of applied geosciences, including mineral and petroleum exploration and extraction techniques, groundwater resources and environmental geosciences.

Mining Geology

This stream combines studies of resource and field geology with mining systems and resource estimation to effectively explore, evaluate and extract mineral resources.

Petroleum Geology

This stream combines studies of sedimentary basins and petroleum geology with aspects of geophysics and petroleum engineering related to the evaluation, development and exploitation of oil and gas resources.

This stream is offered at Curtin Malaysia only; transfer to Curtin Malaysia is dependent on successful application for exchange. (Additional costs may be incurred.)

The Petroleum Geology stream is not available to international students studying in Australia.

Professional recognition

Graduates are eligible for membership of the Australian Institute of Geoscientists, Australasian Institute of Mining and Metallurgy, Geological Society of Australia, International Association of Hydrogeologists, and the Petroleum Exploration Society of Australia.

Double degree

You can study Applied Geology as part of a double degree. See pages 20–23 for available combinations.

Career information

Careers

- Geologist
- Geological engineer.
- Industries
- Environmental geology
- Groundwater extraction
- Mineral and petroleum exploration
- Mining
- Natural hazards and risk analysis
- Radioactive waste storage
- Research and development.



"I loved studying geology at Curtin. The equipment here is top notch.

"I completed two lots of vacation work during my course. Working at a gold mine gave me insight into the industry and grew my professional network. I also worked in an engineering geology consultancy, and decided this would be my career after I graduate."

Diana Carmona Bachelor of Science (Applied Geology) (Honours)

Biochemistry



Course essentials

DEGREE

Bachelor of Science (Biochemistry)

GUARANTEED ATAR 2021

70

PREREQUISITES

Mathematics Applications ATAR and Chemistry ATAR, or equivalent

DESIRABLE

Mathematics Methods ATAR, Mathematics Specialist ATAR and Physics ATAR

STAT

May be used to demonstrate English proficiency only

PORTFOLIO ENTRY

Not accepted

INTAKE

Semester 1, Semester 2*

STUDY MODE

Full-time, part-time

DURATION

3 years full-time

LOCATION

Perth

CRICOS CODE

061600D

* Due to unit availability, starting in Semester 2 may increase the course duration.

Visit curtin.edu/bach-bioch.

Course description Biochemists study the molecular structures and processes that form the foundation for living matter.

In this major, you will study the core principles of chemistry, molecular structure and chemical reactivity, and how they can be applied to biological molecules.

You will study second- and third-year units in biological, medicinal and natural product chemistry; and complementary units in cell biology, molecular biology and molecular genetics.

You'll investigate molecular systems that regulate cell growth, including signalling and defence, and related metabolic pathways.

You'll also study molecular recognition and its applications in biosensors, drug design and optimisation, and in monitoring the effects that exogenous compounds can have on living systems.

You can specialise in either the Chemistry or Environment streams:

Chemistry

In this stream you'll explore how an understanding of the molecular world can influence areas such as bionanotechnology, IT and new biocompatible materials.

Depending on your interests, you can learn to use sophisticated scientific instrumentation to solve complex, real-world analytical problems, or you can learn how to rationally design and synthesise new molecules for a variety of purposes.

Environment

In this stream you'll gain first-hand knowledge of how biochemistry and molecular biology are implemented in an environmental setting.

You'll gain theoretical knowledge and practical skills in various environmental applications of biochemistry. This includes detecting the biochemical signals of pollution, and conducting genetic sequencing of soil microbial systems to assess the impact of human activity.

Professional recognition

Graduates may be eligible for membership of the Royal Australian Chemical Institute.

Career information

Careers

- Biochemist
- Biotechnologist
- Forensic scientist
- Medicinal scientist.

Industries

- Agriculture
- Biotechnology
- Healthcare.

Chemistry

Course essentials

DEGREE

Bachelor of Science (Chemistry)

GUARANTEED ATAR 2021

70

PREREQUISITES

Mathematics Applications ATAR and Chemistry ATAR or equivalent

DESIRABLE

Mathematics Methods ATAR, Mathematics Specialist ATAR and Physics ATAR

STAT

May be used to demonstrate English proficiency only

PORTFOLIO ENTRY

Not accepted

INTAKE

Semester 1, Semester 2*

STUDY MODE

Full-time, part-time

DURATION

3 years full-time

LOCATION*

Perth

CRICOS CODE

061600D

Visit curtin.edu/bach-chemi.

Course description

Chemistry is sometimes called the 'central science' because it connects other sciences such as physics, biology and geology. It is science at a molecular level, where major advances are being made in areas such as medicine, IT, nanotechnology and new materials.

In this course you will gain the knowledge to become a skilled chemist. You'll study theoretical and practical aspects of chemistry, including synthesis, analysis and molecular modelling. Your learning will be largely laboratory-based, in Curtin's Resources and Chemistry Precinct.

You'll also learn problem-solving, teamwork and critical analysis skills, which can open opportunities for other careers within science.

DEGREE

Bachelor of Advanced Science (Chemistry) (Hons)

GUARANTEED ATAR 2021

95

PREREQUISITES

Mathematics Methods and Chemistry ATAR

DESIRABLE

Mathematics Specialist and Physics ATAR, or equivalent

STAT

May be used to demonstrate English proficiency only

PORTFOLIO ENTRY

Not accepted

INTAKE

Semester 1

STUDY MODE

Full-time, part-time

DURATION

4 years full-time

LOCATION

Perth

CRICOS CODE

095949E

Visit curtin.edu/badvsci-chem.

For your degree, you will specialise in one the following streams:

Analytical and Forensic Chemistry In this stream you will learn how to use sophisticated scientific instruments to solve complex analytical problems.

You'll develop effective problem-solving and decision-making skills within the ethical and professional context of analytical and forensic science.

Biological Chemistry

This is a crossover field of chemistry in which you will study the essential processes of life on the molecular level.

You'll use complex equipment and procedures to understand the biomolecular world, explore applications in biosensors and drug design, and monitor the effects that new substances, such as food additives and medicines, have on living organisms. You could also have a role in discovering new molecular pathways to design and synthesise new medicines.

Geochemistry

In this stream you will study the chemical make-up of the Earth and other planets. You'll focus on chemical reactions and processes that show how various soils and rocks are created.

Materials Science

This stream looks for connections between the underlying structure of a material, its properties and applications, and how processing changes the material.

You will study materials including metals, semiconductors, glasses, ceramics and polymers. You'll also learn about analytical instruments and radiation that materials scientists use to investigate the microstructure of samples.

Professional recognition

Graduates are eligible for membership of the Royal Australian Chemical Institute.

Double degree

You can study Chemistry as part of a double degree. See pages 20–23 for available combinations.

Career information

Careers

- Analytical chemist
- Environmental chemist
- Forensic scientist
- Materials scientist
- Medicinal chemist
- · Synthetic chemist.
- Industries
- Environment
- Forensics
- Health
- Manufacturing
- Petrochemical engineering.



Coastal and Marine Science

Course essentials

DEGREE

Bachelor of Science (Coastal and Marine Science)

GUARANTEED ATAR 2021

70

PREREQUISITES

Mathematics Applications ATAR or equivalent

DESIRABLE

One of the following ATAR subjects: Animal Production Systems, Aviation, Biology, Chemistry, Earth and Environmental Science, Human Biology, Integrated Science, Marine and Maritime Studies, Physics, Plant Production Systems, Psychology, Computer Science, Applied Information Technology, or equivalent

STAT

May be used to demonstrate English proficiency only

PORTFOLIO ENTRY

Not accepted

INTAKE*

Semester 1, Semester 2

STUDY MODE

Full-time

DURATION

3 years full-time

LOCATION

Perth, Dubai, Malaysia, Mauritius

CRICOS CODE

061600D

* Perth intake shown. Intake varies between locations.

Visit curtin.edu/bach-coamar.

DEGREE

Bachelor of Advanced Science (Coastal and Marine Science) (Hons)

GUARANTEED ATAR 2021

95

PREREQUISITES

Mathematics Methods ATAR

DESIRABLE

At least one of the following ATAR subjects: Biology, Chemistry, Marine and Maritime Studies

STAT

May be used to demonstrate English proficiency only

PORTFOLIO ENTRY

Not accepted

INTAKE

Semester 1 STUDY MODE

Full-time, part-time

DURATION

4 years full-time

LOCATION

Perth

CRICOS CODE

095949E

Visit curtin.edu/badvsci-cmsci.

Course description

Marine environments all around the world are increasingly vulnerable to climate change and continued coastal development and resources extraction.

This major responds to the growing need to protect Australia's coastlines, with an emphasis on marine biology, oceanographic sciences and resource management.

The course is informed and delivered by staff with research expertise in fish ecology, coral reef ecology, marine pollution, coastal geomorphology, sustainable fisheries and aquaculture. It has been designed with industry input, to ensure you develop scientific and marine research skills. You will be challenged to think as a marine scientist, developing your initiative and intellectual curiosity to help understand and protect the marine environment.



During your studies you'll interact with professionals working in marine and coastal science and management, such as Western Australia's departments of Fisheries, Environmental Protection, and Environment and Conservation; marine science consultancies; and Curtin's Centre for Marine Science and Technology.

Double degree

You can study Coastal and Marine Science as part of a double degree. See pages 20–23 for available subject combinations.

Professional recognition

Graduates are eligible for membership of the Australian Marine Sciences Association.

Career information

Careers

- Aquaculturalist
- Ecotoxicologist
- Environmental officer
- Fisheries scientist
- Marine scientist
- Natural resource manager.

Industries

- Aquaculture
- Coastal management
- Ecotourism
- Fisheries
- Marine conservation
- Pollution control.



"The practical components of the course were so beneficial. In one unit we went to Coral Bay, north of Perth, to carry out our own research projects. In small groups, we designed the sampling programs, collected the data, analysed the results and developed a research paper."

Megan Cundy

Bachelor of Science (Coastal Zone Management, Environmental Biology) (Honours)



Computer Systems and Networking

Course essentials

DEGREE

Bachelor of Technology (Computer Systems and Networking)

GUARANTEED ATAR 2021

70

PREREQUISITES

Mathematics Applications ATAR or equivalent

DESIRABLE

Mathematics Methods or Mathematics Specialist ATAR, or equivalent

STAT

May be used to demonstrate English proficiency only

PORTFOLIO ENTRY

Not accepted

INTAKE*

Semester 1, Semester 2

STUDY MODE

Full-time, part-time

DURATION

3 years full-time

LOCATION

Perth, Malaysia

CRICOS CODE

041280C

* Perth intake shown. Intake varies between locations.

Visit curtin.edu/bach-comsys.

Course description

Computer systems and network administrators are responsible for the configuration and reliable operation of computer networks, which form the backbone of modern information systems.

This degree course will provide you with the knowledge and skills required to pursue career opportunities in this rapidly expanding field.

You'll learn about computer network design and development technologies, focusing on the design and support of distributed computer and telecommunications networks. The course integrates current developments in wired and wireless networking and provides a comprehensive view of the industry. You'll develop skills in network design and management, and the convergence of computer hardware, embedded systems, IT, technical support, real-time systems, software and telecommunications.

You'll also learn about the internet of things (IoT) – a network of devices connected to the internet on a global scale. The IoT is expanding rapidly, and it is increasingly critical for professionals to understand how it works and how to harness its power to improve business. This course will therefore enable you to apply technical knowledge across IoT-related functions in the workplace.

The course includes certification-based training with IT leaders. You'll graduate with the skills to expand the capabilities of networks already in place and to build new ones.

Professional recognition

Graduates meet Engineers Australia's Stage 1 Competency Standard for Engineering Technologists and can apply for relevant membership.

Career information

Careers

- Industrial network engineer
- IT professional
- Network and system administrator
- Systems designer
- Telecommunications manager.
- Industries
- Finance and insurance
- Government
- Mining and production operational technology
- Professional, scientific and technical services
- Public administration and safety.





Computing

Course essentials

DEGREE

Bachelor of Computing

GUARANTEED ATAR 2021

80

PREREQUISITES

Mathematics Applications ATAR or equivalent

DESIRABLE

Mathematics Methods ATAR or equivalent

STAT

May be used to demonstrate English proficiency only

PORTFOLIO ENTRY

Not accepted

INTAKE*

Semester 1, Semester 2

STUDY MODE

Full-time, part-time

DURATION

3 years full-time

LOCATION

Perth, Malaysia

CRICOS CODE

0100817

* Perth intake shown. Intake varies between locations.

Visit curtin.edu/bach-comp.

Course description

This course will equip you with high-level knowledge of computer systems and processes involved in software development and maintenance.

It covers aspects of modern computing, commencing with fundamental programming and theoretical knowledge; and followed by specialisation in computer science, cyber security or software engineering.

You will use C and Java as the tools for learning core concepts such as object orientation and algorithms. Linux skills are taught throughout the course, starting with the basics and progressing to advanced topics.

DEGREE

Bachelor of Advanced Science (Computing) (Hons)

GUARANTEED ATAR 2021

95 PREREQUISITES Mathematics Methods ATAR DESIRABLE

Mathematics Specialist ATAR

STAT

May be used to demonstrate English proficiency only

PORTFOLIO ENTRY

Not accepted
INTAKE
Semester 1

STUDY MODE

Full-time, part-time

DURATION

4 years full-time

LOCATION

Perth

CRICOS CODE

095949E

Visit curtin.edu/badvsci-comp.

This degree is designed to prepare you for careers in computing. Accordingly, Curtin works closely with industry partners both to optimise course content and provide final-year placement opportunities to suitable students.

Students who perform well in the first year of this course can apply to transfer to the Bachelor of Advanced Science (Computing) course, although acceptance is not automatic.

Computer Science

This major provides in-depth knowledge of software design, algorithm analysis, artificial intelligence, computer communications, databases and graphics.

You will gain the skills required to build operating systems and design new programming languages. Being mathematically based, computer science has a strong emphasis on mathematics.



Cyber Security

This major focuses on the key concepts and challenges in data protection and computer software security.

You will examine both the high- and low-level practical aspects of computer security. High-level aspects include cryptography theory, data access policy development and security program management. Low-level aspects include computer forensics, network intrusion detection and incident handling.

Graduates have the skills to identify and implement appropriate applications for specific scenarios, as well as an understanding of issues related to the protection of individual rights.



Software Engineering

In this major you will learn to design, measure and analyse software-based systems. You'll receive a strong foundation in computer science, with emphasis on the gathering, design, implementation and testing of software requirements.

You'll also advance your communication and collaboration skills.

Specialisations in the Bachelor of Advanced Science are information technology, computer science, cyber security and software engineering.

Professional recognition

Graduates can apply for accreditation from the Australian Computer Society.

The Cyber Security major meets the data and security standards of the Institute of Electrical and Electronic Engineers; Association for Computing Machinery; and Australian Computer Society.



"I studied computing at Curtin because the course had excellent reviews and a strong, practical focus.

"Through the work experience component, I was exposed to a real-life software engineering project, had the opportunity to work with industry partners, and engaged with true industry practices. There's no better way to cement the knowledge you've gained than to put it into practice."

Jackson Van Dyke Cyber Security Consultant Bachelor of Science (Computing)

Career information

Careers

- Computer programmer
- IT professional
- Computer security professional
- Software engineer/developer.

- Applications and software development
- Game design and development
- Cyber security
- IT analysis.

Data Science

Course essentials

DEGREE

Bachelor of Science (Data Science)

GUARANTEED ATAR 2021

80

PREREQUISITES

Mathematics Methods ATAR or equivalent

DESIRABLE

Mathematics Specialist ATAR or equivalent

STAT

May be used to demonstrate English proficiency only

PORTFOLIO ENTRY

Not accepted

INTAKE

Semester 1, Semester 2

STUDY MODE

Full-time, part-time

DURATION

3 years full-time

LOCATION

Perth

CRICOS CODE

061600D

Visit curtin.edu/bach-datsc.

Course description

Data scientists collate and analyse large volumes of data and communicate their findings to a range of audiences. Their ability to use big data to predict future trends is becoming an essential part of decision making in business and government.

Data is being generated at an unprecedented rate and its availability will continue to increase. Every industry is using large volumes of data – from predicting weather patterns and optimising harvesting in agriculture, to improving patient diagnosis in the health industry, to enhancing the management of remote infrastructure in mining.

DEGREE

Bachelor of Advanced Science (Data Science) (Hons)

GUARANTEED ATAR 2021

95 PREREQUISITES Mathematics Methods ATAR DESIRABLE

Mathematics Specialist ATAR

May be used to demonstrate English proficiency only

PORTFOLIO ENTRY

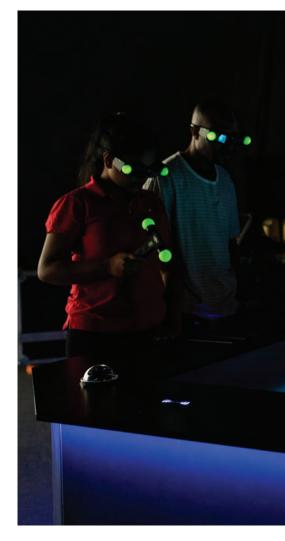
Not accepted INTAKE Semester 1 STUDY MODE Full-time, part-time DURATION 4 years full-time LOCATION Perth CRICOS CODE

095949E

Visit curtin.edu/badvsci-datasci.

This is a multidisciplinary major. It combines studies in computing, emerging internet technologies, media and statistics. You will gain a foundation in programming and statistics, which will form the basis of higher-level studies in data mining, data security and computer simulation.

This course builds your capacity to extract, analyse and visualise large volumes of data and communicate analytical outcomes to a range of audiences. You'll graduate equipped to enter a range of industries where data science is key to innovation.

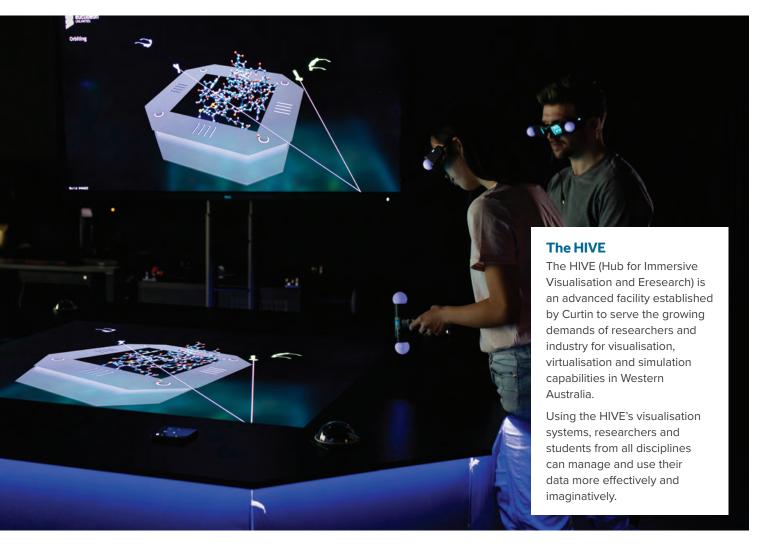


In keeping with Curtin's strong links with industry, this course has an industry advisory group that provides guidance about the course content. The group comprises representatives from the resources sector, management consulting, data analytics services and spatial data product developers, and enterprises such as Optika Solutions and PwC.

Data Science can also be studied as part of the Bachelor of Advanced Science.

Double degree

You can study Data Science as part of a double degree. See pages 20–23 for available combinations.



Career information

Careers

- Data analyst
- Data scientist.

- Agriculture and environment
- Arts
- Economics, business, banking and finance
- Geographic information science
- Government
- Health science
- Media
- Mining
- Oil and gas
- Supply chain logistics
- Technology.

Earth Sciences

Course essentials

DEGREE

Bachelor of Advanced Science (Earth Sciences) (Hons)

GUARANTEED ATAR 2021

95

PREREQUISITES

Mathematics Methods ATAR

DESIRABLE

Chemistry ATAR

STAT

May be used to demonstrate English proficiency only

PORTFOLIO ENTRY

Not accepted

INTAKE

Semester 1

STUDY MODE

Full-time, part-time

DURATION

4 years full-time

LOCATION

Perth

CRICOS CODE

095949E

Visit curtin.edu/badvsci-earthsci.

Course description

Earth scientists are essential to the safe management of the environment and to the discovery and sustainable extraction of mineral and energy resources.

Earth scientists use sophisticated instruments to determine the properties of Earth and planetary materials, and to help understand the evolution of the Earth and the controls and direction of its climate and biosphere.

This is a Bachelor of Advanced Science (Honours) course, designed for high-performing students to pursue their interest in science through a core of research, leadership and entrepreneurship. It provides a body of knowledge in Earth sciences and the skill sets for careers in a range of industries involved with Earth materials and planetary systems. These skills are gained in Curtin's Earth sciences research groups and laboratories that are among the most highly ranked and bestequipped in Australia.

The course provides a flexible and personalised approach to learning. You'll be able to explore the field of Earth sciences through opportunities for immersive research experiences, industry placement and team-based projects.

Your studies will culminate in a capstone experience in which you'll have the opportunity to pursue Earth and planetary science projects ranging from pure research through to translational (entrepreneurial) science.

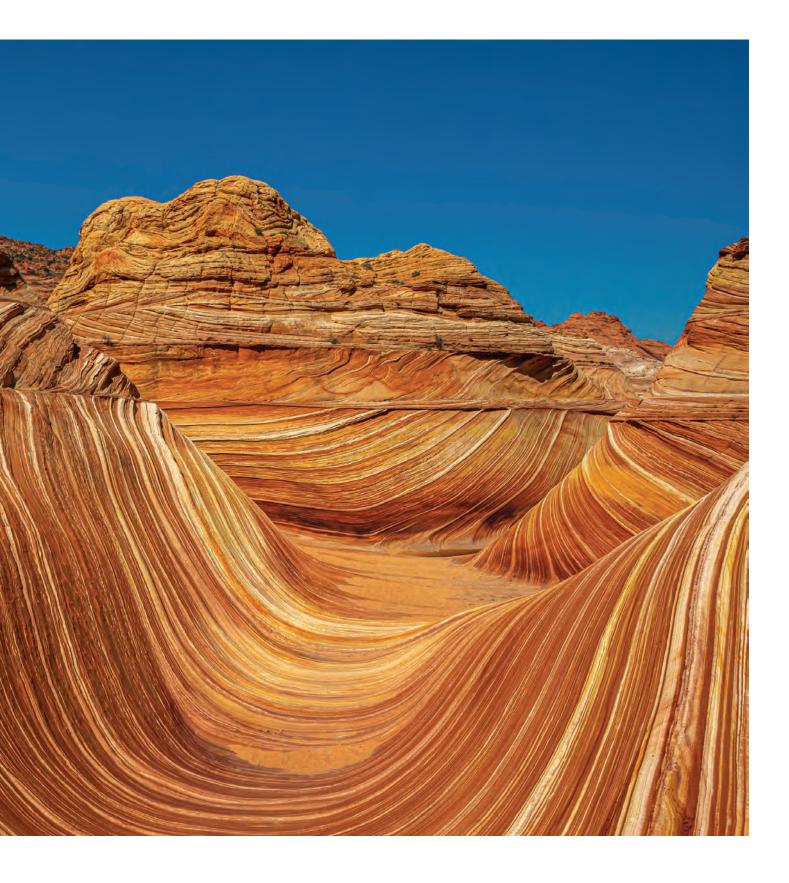
Career information

Careers

- Environmental geoscientist
- Geochemist
- Geologist
- Geotechnical engineer
- Hydrogeologist.

- Environmental consultancy
- Climate science
- Geotechnical services
- Mineral exploration and mining
- Petroleum exploration
- Research and development.





Environmental Science

Course essentials

DEGREE

Bachelor of Science (Environmental Science)

GUARANTEED ATAR 2021

70

PREREQUISITES

Mathematics Applications ATAR or equivalent

DESIRABLE

Chemistry ATAR (Environmental Chemistry stream)

STAT

May be used to demonstrate English proficiency only

PORTFOLIO ENTRY

Accepted

INTAKE

Semester 1, Semester 2

STUDY MODE

Full-time, part-time

DURATION

3 years full-time

LOCATION

Perth

CRICOS CODE

061600D

Visit curtin.edu/bach-ensci.

Course description

With human exploitation of the environment having taken a serious toll on the planet, environmental scientists are needed to solve issues related to land degradation, urban and regional development, pollution, loss of biodiversity, and the impacts of mining, oil and gas extraction and processing.

In this course you will undertake environmental research and develop expertise in zoology, botany, ecology, genetics, environmental management, sustainability and statistics.

After your first year of study you'll specialise in one of the following streams:

DEGREE

Bachelor of Advanced Science (Environmental Science) (Hons)

GUARANTEED ATAR 2021

95

PREREQUISITES

Mathematics Methods and Chemistry ATAR

DESIRABLE

Biology ATAR

STAT

May be used to demonstrate English proficiency only

PORTFOLIO ENTRY

Not accepted

INTAKE

Semester 1

STUDY MODE

Full-time, part-time

DURATION

4 years full-time

LOCATION

Perth

CRICOS CODE

095949E

Visit curtin.edu/badvsci-envsci.

Wildlife Biology

Conservation and management of wildlife is increasingly important in the protection of global biodiversity.

This stream provides the knowledge and skills needed to work with wildlife, with a focus on Australia's unique fauna. It provides you with opportunities to work towards research programs with leading wildlife biologists.

Restoration

Restoration is an AUD\$2 trillion global enterprise encompassing aquatic-toterrestrial, desert and marine ecosystems.

Through Curtin's leading role in the national Centre for Mine Site Restoration, this unique study stream can place you at the fore of the discipline and set you on the path to advanced training.



Genetics

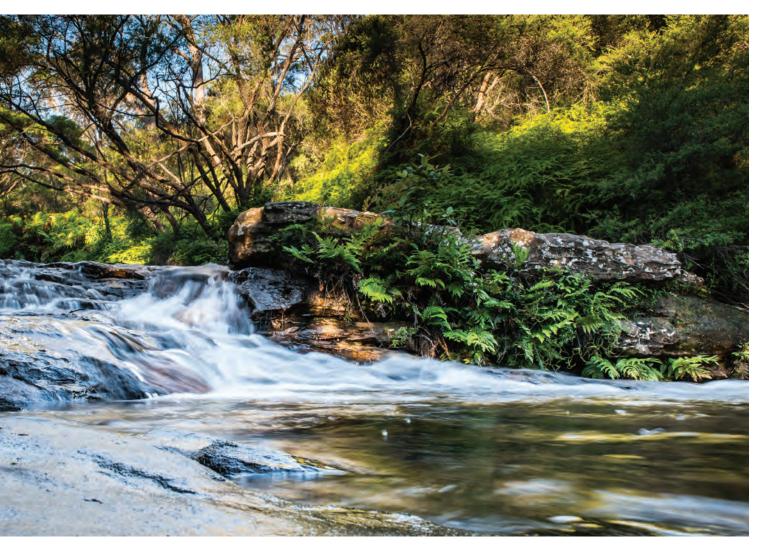
Genetics and genomics have expanded rapidly in recent years and offer various career opportunities.

In this stream you will develop the practical and theoretical skills required to contribute to the field of genetics and microbiology. You'll interact with several research teams that use genetic or bioinformatic approaches in the environmental and agricultural disciplines.

Environmental Chemistry

There is an increasing need to understand and manage the adverse effects of contaminants on the environment.

This stream will give you the chemical and toxicological skills necessary to evaluate degraded environments and implement strategies to restore environmental health.



Double degree

You can study Environmental Science as part of a double degree. See pages 20–23 for available combinations.

Professional recognition

Depending on the area of specialisation, graduates will be eligible for membership of the Australian Institute of Biology, the Royal Australian Chemical Institute, the Australian Institute of Geoscientists, the Australian Mathematics Society or the Australian Institute of Physics.

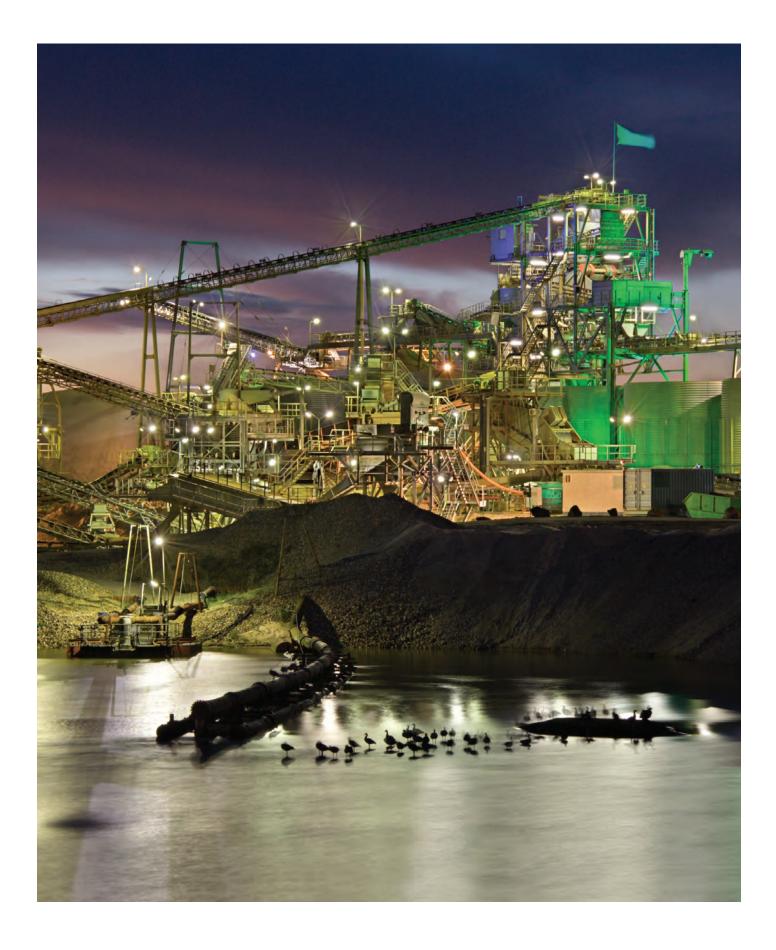
Career information

Careers

- Conservation scientist
- Environmental consultant
- Environmental scientist
- Mine restoration consultant
- Natural resource manager
- Remediated lands consultant.

- Environmental
- Government policy and planning
- Research and development
- Urban and regional planning.

Extractive Metallurgy



Course essentials

DEGREE

Bachelor of Science (Extractive Metallurgy)

GUARANTEED ATAR 2021

70

PREREQUISITES

Mathematics Applications ATAR and Chemistry ATAR or Physics ATAR, or equivalent

DESIRABLE

None

STAT

May be used to demonstrate English proficiency only

PORTFOLIO ENTRY

Not accepted

INTAKE

Semester 1, Semester 2

STUDY MODE

Full-time, part-time

DURATION

3 years full-time

LOCATION

Perth then Kalgoorlie

CRICOS CODE

061600D

Visit curtin.edu/bach-exmet.

Course description

Extractive metallurgists extract and purify metals and other products from ores obtained through mining operations. They have a strong understanding of chemistry, environmental science and mineralogy.

In this course you will learn to develop, optimise and manage the operation of metallurgical processing plants in an economical and environmentally responsible way. These plants transform low-value raw materials into useful, highvalue mineral and metal products.

You'll cover the chemical, physical, economic, environmental and sustainable principles and practices for the extraction of metals from ores.

Your first year of study will be at our main campus, Curtin Perth. You will complete your second year at Curtin Perth or Curtin Kalgoorlie, and your final year will be at Curtin Kalgoorlie, which can help you maximise your exposure to industry and potential future employers.

Professional recognition

This course is recognised by the Australasian Institute of Mining and Metallurgy.

Double degree

You can study Extractive Metallurgy as part of a double degree. See pages 20–23 for available combinations.

Career information

Careers

- Metallurgist
- Plant metallurgist
- Process metallurgist
- Processing consultant.

- Banking and finance
- Minerals and mining
- Research and development.

Financial Mathematics

Course essentials

DEGREE Bachelor of Science (Financial Mathematics) **GUARANTEED ATAR 2021** 80 PREREQUISITES Mathematics Methods ATAR or equivalent DESIRABLE Mathematics Specialist ATAR or equivalent STAT May be used to demonstrate English proficiency only PORTFOLIO ENTRY Not accepted INTAKE Semester 1, Semester 2 STUDY MODE Full-time, part-time DURATION 3 years full-time LOCATION Perth **CRICOS CODE** 061600D

Visit curtin.edu/bach-fnmat.

Course description

Financial mathematicians apply mathematical models and numerical tools to practical everyday applications, such as financial markets. They gather statistical data on the financial decisions that people make, which helps business and government make better informed decisions, especially in uncertain economic climates.

This course will provide you with a range of analytical and mathematical skills, with particular relevance to statistical modelling and operations research in finance.

DEGREE

Bachelor of Advanced Science (Financial Mathematics) (Hons)

GUARANTEED ATAR 2021

95 PREREQUISITES

Mathematics Specialist ATAR

DESIRABLE

None

STAT

May be used to demonstrate English proficiency only

PORTFOLIO ENTRY

Not accepted INTAKE Semester 1 STUDY MODE

Full-time, part-time

DURATION

4 years full-time

LOCATION

Perth

CRICOS CODE

095949E

Visit curtin.edu/badvsci-finmaths.

You will gain a strong grounding in corporate finance, financial institutions, financial markets and various branches of the financial services industry which will enhance your employment prospects in the technological, industrial and commercial sectors. You can select from units in accounting, economics and business.

In your final year you'll undertake a project where you'll put your skills into practice. Examples of previous projects include investigating the relationships between foreign exchange rates and Australian currency volatility; the effectiveness of using stochastic



differential equations to model stock price; and statistical analysis of a portfolio strategy based on fluctuating prices.

Professional recognition

Graduates of this course may be eligible for membership to the Statistical Society of Australia (SSAI), Australian Society for Operations Research and Australian Mathematical Society (Aust MS).



Career information

Careers

- Commercial banker
- Finance/funds manager
- Financial analyst
- Financial planner
- Stockbroker
- Superannuation manager.

- Banking and finance
- Econometrics
- Education
- Government
- Insurance
- Investment banking
- Risk management.

Geophysics



Course essentials

DEGREE

Bachelor of Science (Geophysics)

GUARANTEED ATAR 2021

70

PREREQUISITES

Mathematics Methods ATAR and Physics ATAR, or equivalent

DESIRABLE

Mathematics Specialist ATAR or equivalent

STAT

May be used to demonstrate English proficiency only

PORTFOLIO ENTRY

Not accepted

INTAKE

Semester 1, Semester 2

STUDY MODE

Full-time, part-time

DURATION

3 years full-time

LOCATION

Perth

CRICOS CODE

061600D

Visit curtin.edu/bach-gphys.

Course description

Geophysicists study the interior of the Earth. They explore for natural resources – including minerals, groundwater, and oil and gas – and address environmental engineering problems such as natural hazards and carbon storage.

This comprehensive course is the only course of its kind in Australia. It will prepare you for a professional career in exploration geophysics and provide you with understanding and practical training in a range of geophysical exploration methods, including data acquisition, processing and interpretation.

During your studies you'll have hands-on experience using industry-standard equipment and software, while developing background knowledge in geology, mathematics and physics. You'll gain a thorough grounding in all non-invasive geophysical techniques used in exploration, including seismology, magnetics, gravity, radio-metrics, electrical, electromagnetics and groundpenetrating radar.

Professional recognition

This course is recognised by the Australian Society of Exploration Geophysicists; The Society of Exploration Geophysicists (United States); European Association of Geoscientists and Engineers; and the Australasian Institute of Mining and Metallurgy.

Graduates are eligible for membership of the Geological Society of Australia, Australian Institute of Geoscientists, and the Petroleum Exploration Society of Australia.

Double degree

You can study Geophysics as part of a double degree. See pages 20–23 for available combinations.

Career information

Careers

- Archaeologist
- Geologist
- Geophysicist
- Government geological surveyor
- Mineral exploration specialist
- Researcher.

Industries

- Oil and mineral exploration
- State and federal government.



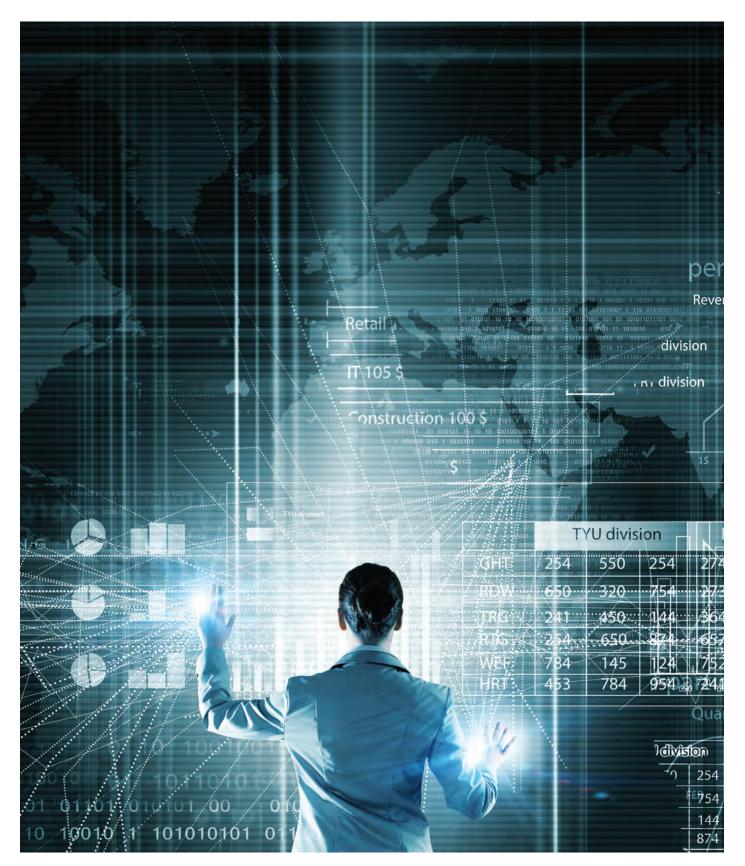
"I've always been interested in mathematics and physics, and geophysics allows me to utilise both sciences in exploration of remote corners of the world.

"I chose Curtin because it's the only university in Western Australia that offers an undergraduate degree in geophysics. It provided me with a strong foundation to build on at Resource Potentials."

Tom Dronfield

Geophysicist, Resource Potentials Bachelor of Science (Geophysics)

Industrial and Applied Mathematics



Course essentials

DEGREE

Bachelor of Science (Industrial and Applied Mathematics)

GUARANTEED ATAR 2021

80

PREREQUISITES

Mathematics Methods ATAR or equivalent

DESIRABLE

Mathematics Specialist ATAR or equivalent

STAT

May be used to demonstrate English proficiency only

PORTFOLIO ENTRY

Not accepted

INTAKE*

Semester 1, Semester 2

STUDY MODE

Full-time, part-time

DURATION

3 years full-time

LOCATION

Perth

CRICOS CODE

061600D

Visit curtin.edu/bach-apmat.

Course description

Mathematics is the study of concepts such as quantity, structure, space and change; and the application of these concepts to model and describe the behaviour of real-world complex systems.

Mathematics is used in most fields, including technology, natural science, engineering, medicine, finance, sociology and psychology.

This course is designed to provide you with skills in mathematics, engineering and computing, and to teach you how to apply these skills to problems arising in business, industry and government.

You will gain knowledge in advanced

DEGREE

Bachelor of Advanced Science (Industrial and Applied Mathematics) (Hons)

GUARANTEED ATAR 2021

95

PREREQUISITES

Mathematics Specialist ATAR or equivalent

DESIRABLE

None

STAT

May be used to demonstrate English proficiency only

PORTFOLIO ENTRY

Not accepted

INTAKE

Semester 1

STUDY MODE

Full-time, part-time

DURATION

4 years full-time

LOCATION

Perth

CRICOS CODE

095949E

Visit curtin.edu/badvsci-indmaths.

calculus, linear algebra, modelling and optimisation, network design and analysis, logistics, supply chain networks, transportation networks, computational mathematics, statistics and probability.

Our industry-based units and our ability to partner in work experience programs provide you with opportunities to engage with real-world applications.

As a graduate of this course, you'll be equipped with the tools to address problems to improve the productivity of business and industry.

Professional recognition

Graduates of this course may be eligible for membership of the Statistical Society of Australia; Australian Society for Operations Research; and Australian Mathematical Society.

Career information

Careers

- Data analyst
- Industrial engineer
- Information technologist
- Logistician
- Statistical analyst
- Supply chain manager.

- Engineering
- Government
- Logistics and supply chain networks
- Risk management.

Information Technology

Course essentials

DEGREE

Bachelor of Information Technology

GUARANTEED ATAR 2021

70

PREREQUISITES

Mathematics Applications ATAR or equivalent

DESIRABLE

Mathematics Methods ATAR or equivalent

STAT

May be used to demonstrate English proficiency only

PORTFOLIO ENTRY

Accepted

INTAKE*

Semester 1, Semester 2*

STUDY MODE

Full-time, part-time

DURATION

3 years full-time

LOCATION

Perth, Malaysia

CRICOS CODE

0100818

* Perth intake shown. Intake varies between locations.

Visit curtin.edu/bach-infotech.

Course description

This course covers fundamental programming and security skills of modern computing and computer networks, specialising in various aspects of distributed computing.

You will use Python as a tool for learning network and other programming. Linux skills are taught throughout the course, starting with the basics and progressing to advanced topics.

Graduates of the course will have sound knowledge of computer systems and processes involved in software development and maintenance.

This degree is designed to prepare you for careers in high-demand areas of computing. Accordingly, Curtin works closely with industry partners both to optimise course content and provide final-year placement opportunities to suitable students.

Students who perform well in the first year of this course can apply to transfer to the Bachelor of Computing course. Students who perform exceptionally well can apply to transfer to the Bachelor of Advanced Science (Computing) course, although acceptance is not automatic. In both cases, full credits are transferred to the new course.

Professional recognition

Graduates can apply for accreditation from the Australian Computer Society.

Career information

Careers

- Computer programmer
- IT professional
- Computer security professional
- Software engineer/developer.

- Applications and software development
- Cyber security
- IT analysis.



Medical Radiation Science

Course essentials

DEGREE

Bachelor of Science (Medical Radiation Science)

MINIMUM ATAR 2021

90

PREREQUISITES

Mathematics Methods ATAR and Physics ATAR, or equivalent

DESIRABLE

Mathematics Specialist ATAR or equivalent

STAT

May be used to demonstrate English proficiency only

PORTFOLIO ENTRY

Not accepted
INTAKE
Semester 1
STUDY MODE
Full-time
DURATION
4 years full-time
LOCATION
Perth
CRICOS CODE
088215B
Visit curtin odu/bach modrad

Visit curtin.edu/bach-medrad.

Course description

Learn to use medical radiation on the human body to help diagnose, treat and monitor medical conditions and provide cancer therapy.

Rapid technological advances in these areas mean that the medical imaging and radiation-therapy sector is continuing to expand.

This course comprises foundation studies required for medical radiation science practice – including medical physics, anatomy, physiology and evidence-based practice – and a combination of subjects from science and health sciences that will give you a grounding in the healthcare environment.



The first year is interprofessional and taken with other health sciences and science students. From second year, you will specialise in one of two majors: Medical Imaging or Radiation Therapy.

You'll develop the ethical, medico-legal, cultural awareness and communication abilities needed to take responsibility for the care of individual patients.

You'll undertake 45 weeks of clinical experience during the course, in hospitals, private practices and rural and regional sites.

This course is highly competitive and has limited places due to clinical placement requirements.

Medical Imaging

Medical imaging professionals work with sophisticated diagnostic imaging modalities – including computed and digital radiography, fluoroscopy, computed tomography, magnetic resonance imaging, mammography and angiography equipment.

They produce images that are used to confirm or exclude a medical diagnosis, to advise on a treatment or illness, monitor patient progress, or provide medical screening.

Radiation Therapy

Radiation therapists have an integral role in the treatment, care and management of patients undergoing radiation therapy treatment, primarily in treating cancer types.

They use a range of complex technologies and equipment to design, develop and deliver radiation therapy treatment.

Professional recognition

This course is recognised by the Medical Radiation Practice Board of Australia. Registration with the Board is a legal requirement to practise as a graduate medical imaging or radiation therapist in Australia.

Career information

Careers

- Medical imaging professional
- Radiation therapist.

- Clinical research
- Education
- Health and safety
- Private practice
- Private, public and regional hospitals
- Software and equipment supply
- Support services.

Mine Surveying



Course essentials

DEGREE

Bachelor of Surveying Technology (Mine Surveying)

GUARANTEED ATAR 2021

70

PREREQUISITES

Mathematics Applications ATAR or equivalent

DESIRABLE

Mathematics Methods ATAR or equivalent

STAT

Accepted

PORTFOLIO ENTRY

Not accepted

INTAKE

Semester 1, Semester 2*

STUDY MODE

Full-time, part-time

DURATION

3 years full-time

LOCATION

Perth then Kalgoorlie

CRICOS CODE

TBA

* Semester 2 intake available to domestic students only. Due to unit availability, commencement in Semester 2 may increase the course duration.

Visit curtin.edu/bach-techminesurv.

Course description

Mine surveying is a specialist area of surveying and engineering surveying. Mine surveyors measure underground and open-cut mines in detail, helping mining companies locate new mines safely. Engineering surveyors work on construction and infrastructure projects to ensure challenging building specifications are met.

Your studies will expose you to realworld environments and practices where you will develop skills in marking out, measuring and maintaining direction for all surface and underground workings on a mine site. You will also learn how to prepare and update mine surveying plans for open pit and underground workings. In your engineering surveying units, you'll learn how to ensure civil engineering works are placed in their correct positions and orientations.

This three-year major incorporates the first two years of surveying studies at Perth with a final year of mine surveying at the WA School of Mines, Kalgoorlie campus.

You need to apply through the Bachelor of Surveying (Honours) (see page 62) and switch following the end of your second year, to graduate with the Bachelor of Surveying Technology (Mine Surveying).

Professional recognition

Graduates of this course meet the education requirements of the Western Australian Department of Mines, Industry Regulation and Safety for certification as an underground or open-pit mine surveyor.

Career information

Careers

- Engineering surveyor
- Mining surveyor
- Surveyor.
- Industries
- Construction
- Mining and resources.

Mining

Course essentials

DEGREE

Bachelor of Science (Mining)

GUARANTEED ATAR 2021

70

PREREQUISITES

Mathematics Applications ATAR and Chemistry or Physics ATAR, or equivalent

DESIRABLE

None

STAT

May be used to demonstrate English proficiency only

PORTFOLIO ENTRY

Not accepted

Semester 1, Semester 2*

STUDY MODE

Full-time, part-time

- DURATION
- 3 years full-time

LOCATION

Perth then Kalgoorlie

CRICOS CODE

061600D

* Due to unit availability, commencement in Semester 2 may increase the course duration.

Visit curtin.edu/bach-mngsc.

Course description

Mining continues to enrich many communities in Australia and around the world. Mining professionals help plan and direct the extraction of minerals, petroleum and natural gas from the Earth.

In this course you will study mining methods, rock mechanics, geology and mine planning. You'll develop the skills necessary to work with mining engineers in the exploitation of minerals from underground or open-pit mines, safely and economically.

Your first year of study will be at Curtin Perth, your second year will be at Curtin Perth or Curtin Kalgoorlie, and your final year will be at Curtin Kalgoorlie, where you can engage with industry and potential future employers.

You'll also have the opportunity to undertake field trips to gain real-world experience in mining.

Professional recognition

This course meets the education requirements of the Western Australian Department of Mines, Industry Regulation and Safety, for certification as an underground or open-pit mine supervisor. You will also meet the educational requirements for the Quarry Manager's Certificate of Competency. It is also recognised by the Australasian Institute of Mining and Metallurgy.

Double degree

You can study Mining as part of a double degree. See pages 20–23 for available combinations.

Career information

Careers

- Engineering consultant
- Mine manager
- Mine ventilation officer
- Mining engineer
- Mining company director.
- Industries
- Mining and resources.



Molecular Genetics

Course essentials

DEGREE

Bachelor of Advanced Science (Molecular Genetics) (Hons)

GUARANTEED ATAR 2021

95

PREREQUISITES

Mathematics Methods ATAR and Chemistry ATAR

DESIRABLE

Mathematics specialist ATAR or Biology ATAR

STAT

May be used to demonstrate English proficiency only

PORTFOLIO ENTRY

Not accepted

IN	TA	KE

Semester 1
STUDY MODE
Full-time, part-time
DURATION
4 years full-time

LOCATION

Perth

CRICOS CODE

095949E

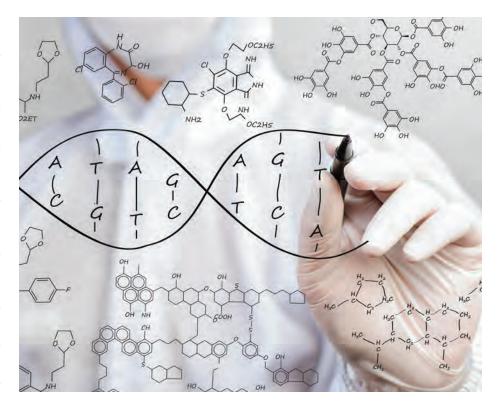
Visit curtin.edu/badvsci-molgen.

Course description

Molecular genetics contributes to solutions to global problems including human, animal and plant diseases, environmental degradation, food security and biosecurity.

This is a Bachelor of Advanced Science (Honours) course, designed for high-performing students to pursue their interest in science through a core of research, leadership and entrepreneurship.

Genetics is a rapidly growing science discipline and now underpins diverse jobs related to biology. Around the world, governments are investing heavily in genetics research to help improve the food supply, for example, which is increasingly reliant on genetically modifying the production of plants and animals.



Trace amounts of DNA in the environment (eDNA) are being used to provide more complete estimates of biodiversity in terrestrial and marine environments. DNA 'chips' can detect the expression of thousands of genes enabling rapid diagnosis of many diseases in a single test. Before long, individuals will have access to their own DNA sequence and learn their propensity to develop particular diseases. Likewise, stem cells and tissue culture promise novel methods for organ replacement and injury repair.

The deep knowledge of genetic processes and bioinformatics you will gain in this course will provide opportunities for careers and research related to human health, environmental health and food security.

The course offers a flexible and personalised approach to studying genetics. You'll be able to explore this field through for-credit immersive research experiences, industry placement and/or interdisciplinary team-based projects. You'll also gain practical experience programming in both R and Python and through exposure to data science professionals. In your second and third year you'll have the opportunity to source internal and external internships and immersive work experience that can be used for course credit. Your course will culminate in a capstone experience in which you can pursue genetics projects ranging from pure research through to translational (entrepreneurial) science.

Career information

Careers

- Agricultural and food scientist
- Bioinformatician
- Biotechnologist
- Ecologist
- Plant and animal geneticist.

- Agriculture and agribusiness
- Environment and sustainability
- Food security
- Medical and healthcare
- Research and development.

Multidisciplinary Science

Course essentials

DEGREE

Bachelor of Science (Multidisciplinary Science)

GUARANTEED ATAR 2021

70

PREREQUISITES¹

Mathematics Applications ATAR or equivalent

DESIRABLE

One of the following ATAR subjects: Animal Production Systems, Aviation, Biology, Chemistry, Earth and Environmental Science, Human Biology, Integrated Science, Marine and Maritime studies, Physics, Plant Production Systems, Psychology, Computer Science, Applied Information Technology, or equivalent

STAT

JIAI	a car
Accepted	Alter
PORTFOLIO ENTRY	scien
Accepted	facult
INTAKE	bioin
Semester 1, Semester 2 ²	digita
STUDY MODE	profe
Full-time	Multi
DURATION	a pat — those
N/A	
LOCATION	Data — Math
Perth	lf you
CRICOS CODE	entry
061600D	Math
1. Some disciplines within this course have	unde

 Some disciplines within this course have additional prerequisites; if do not have these, you may still study this course but your course duration may increase.

2. Due to unit availabilities, beginning in Semester 2 may increase your course duration.

Visit curtin.edu/bach-mtdsc.

Course description

In many areas of scientific endeavour, knowledge across multiple disciplines has provided innovative solutions to major problems. This course provides a well-rounded and diverse skill set, preparing you for a career that can span science, technology and mathematics.

Multidisciplinary science is a flexible course that allows you to design a major that suits your background and career goals. You can combine science disciplines from areas such as agriculture, astronomy, biochemistry, biology, chemistry, computing, environmental, geology, geographic information science, mathematics or physics. This will enable you undertake further study or embark on a career in STEM.

Alternatively, you can combine study of a science discipline with study from another faculty for careers in biomedical science, bioinformatics, genetics, food science, digital design, visualisation, management, professional writing or languages.

Multidisciplinary Science can be used as a pathway into other courses, including those listed below.

Data Science, Engineering, Mathematics and Physics

If you lack one or more prerequisites for entry into Data Science, Engineering, Mathematics or Physics, you can undertake them in Multidisciplinary Science along with other units from your desired course. If you need to improve your ATAR score, you will complete a minimum of 100 credit points in one semester, including the prerequisite subject(s) you lack, and achieve a semester weighted average of more than 65 per cent.

Medical Radiation Science

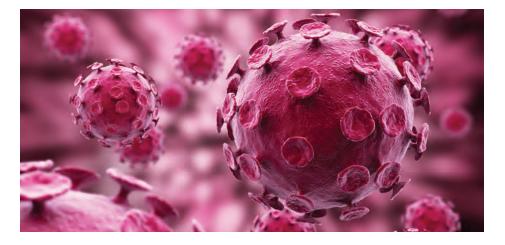
If you do not currently have the mathematics or physics prerequisites for entry into Medical Radiation Science, you can undertake them in Multidisciplinary Science, along with other units from Medical Radiation Science.

If you need to improve your ATAR score, you will complete a minimum of 75 credit points in the semester preceding the application, including the prerequisite subjects you lack, and achieve a course weighted average of more than 80 per cent to be considered. Entry is competitive, so you may require a higher average in a given enrolment period.

Career information

Opportunities exist across a wide spectrum, depending on your choice of units. For example, you could aim to become a professional science writer by combining science units with journalism.

You may be ideally placed to pursue a career in secondary science education, through the development of a broad science or mathematics background and the flexibility to include an education minor for a teaching specialisation. You also may choose to undertake postgraduate study to expand your career options.



Nutrition and Food Science

Course essentials

DEGREE

Bachelor of Science (Nutrition and Food Science)

GUARANTEED ATAR 2021

70

PREREQUISITES

Chemistry ATAR

DESIRABLE

Mathematics Applications ATAR

STAT

Accepted

PORTFOLIO ENTRY

Not accepted

INTAKE

Semester 1, Semester 2*

STUDY MODE

Full-time, part-time

DURATION

3 years full-time

LOCATION

Perth

CRICOS CODE

003887J

*Due to unit availability, starting in Semester 2 may increase the course duration.

Visit curtin.edu/bach-nutr.

Course description

Learn the science of nutrition and the best way to promote healthy diet behaviours.

In this course you will not only learn the science behind nutrition, but also how you can improve the nutritional status of populations. You'll also develop high-level communication and teamwork skills.

Your first year is interprofessional and taken with other health sciences students. In your second year you will choose between two streams: Nutrition or Food Science.

Nutrition

In this stream you will develop your understanding of the associations between diet and health outcomes. You'll explore the social and cultural influences that impact dietary decisions within populations. You'll also conduct a nutrition research project. Course outcomes from the Nutrition stream meet entry requirements for Curtin's Master of Dietetics course.

Food Science

In this stream you will focus on the nature and chemical composition of foods, ingredient behaviour under different processing conditions, and the application of this knowledge to improve the safety and quality of food.

You'll undertake field trips throughout the course and a work placement with an external organisation.

Professional recognition

Graduates of the Nutrition stream are eligible to apply for membership of the Public Health Association of Australia and apply as an Associate Nutritionist with the Nutrition Society of Australia.

Graduates of the Food Science stream are eligible to apply for membership of the Australian Institute of Food Science and Technology.

Double degree

You can study Nutrition and Food Science as part of a double degree. See pages 20–23 for available combinations.

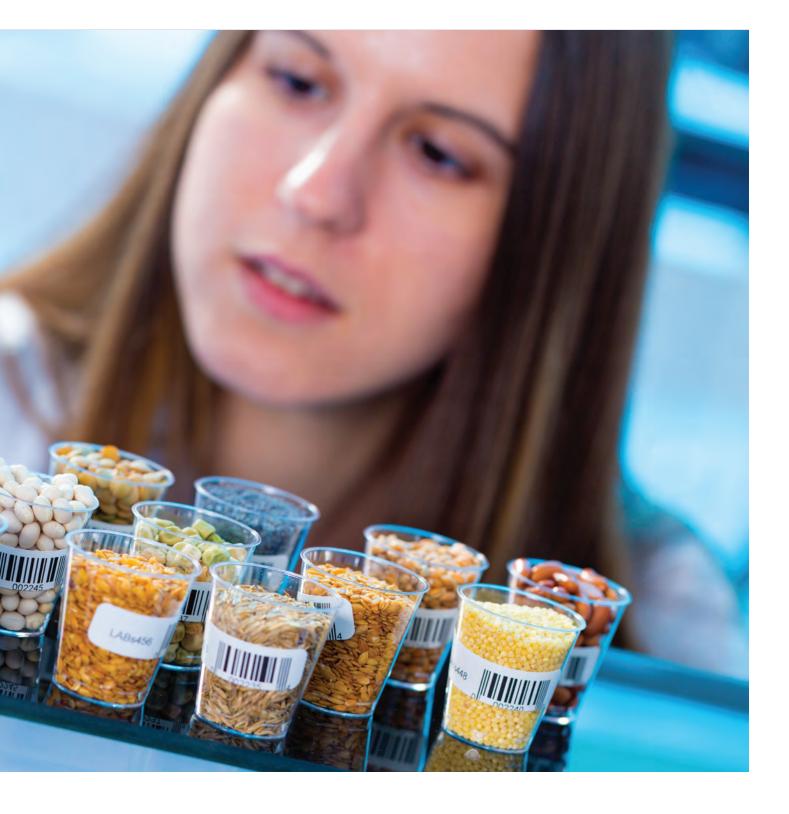
Career information

Careers

- Dietitian
- Food scientist
- Food technologist
- Home economist
- Nutrition scientist
- Nutritionist.

- Community health
- Education and research
- Food manufacturing
- Government lobby groups
- Health and food fitness sector
- Research and development.





Physics

Course essentials

DEGREE

Bachelor of Science (Physics)

GUARANTEED ATAR 2021

80

PREREQUISITES

Mathematics Methods ATAR and Physics ATAR, or equivalent

DESIRABLE

Mathematics Specialist ATAR and Chemistry ATAR, or equivalent

STAT

May be used to demonstrate English proficiency only

PORTFOLIO ENTRY

Not accepted

INTAKE

Semester 1, Semester 2*

STUDY MODE

Full-time

DURATION

3 years full-time

LOCATION

Perth

CRICOS CODE

061600D

* Due to unit availability, commencement in Semester 2 may increase the course duration.

Visit curtin.edu/bach-physi.

Course description

From the kinetic energy of a speeding car to nuclear fusion energy, from nearby stars to distant galaxies, physicists examine matter and energy in all their forms.

In this course you will study realworld problems through observation, measurement and theoretical analysis. You'll learn the core concepts of physics and gain experience using complex technical equipment, such as those found at supercomputing facilities.

You can specialise in one of the following streams:

DEGREE

Bachelor of Advanced Science (Physics) (Hons)

GUARANTEED ATAR 2021

95

PREREQUISITES

Mathematics Methods ATAR, Mathematics Specialist ATAR and Physics ATAR, or equivalent

DESIRABLE

Chemistry ATAR or equivalent

STAT

May be used to demonstrate English proficiency only

PORTFOLIO ENTRY

Not accepted

INTAKE

Semester 1 STUDY MODE

Full-time, part-time

DURATION

4 years full-time

LOCATION

Perth

CRICOS CODE

095949E

Visit curtin.edu/badvsci-phys.

Applied Physics

In this stream you will study matter and energy in the Earth's natural and managed environments: the atmosphere, oceans, rivers, land, soils and living organisms.

You'll study contemporary topics such as the development of energy-saving 'green' materials and the disposal of radioactive wastes. You'll also learn how to deploy instruments during field excursions, and undertake field and satellite data analysis.

You'll have the opportunity to undertake applied acoustics with Curtin's Centre for Marine Science and Technology, and applied underwater optics with Curtin's Remote Sensing and Satellite Research Group.



Astrophysics

This stream is suitable if you are interested in radio astronomy. You'll grapple with scientific questions ranging from the origins of the Universe to the nature of dark matter.

Curtin's major involvement in the International Centre for Radio Astronomy Research and the Square Kilometre Array means you will have the chance to analyse data from cutting-edge radio telescopes.

Materials Science

This stream looks for connections between the underlying structure of a material, its properties and applications, and how processing changes the material.



You will study materials including metals, semiconductors, glasses, ceramics and polymers. You'll also learn about analytical instruments and radiation that materials scientists use to investigate the microstructure of samples.

Mathematical Physics

Mathematical physics is the study of nature. Through mathematical models, we can predict the progress of climatic changes, the flow of oil reservoirs and development of new materials.

This stream will prepare you to work as a physicist or mathematician.

Professional recognition

You will be eligible for membership of the Australian Institute of Physics (AIP). Many international equivalents of the AIP also accept graduates as members.

Double degree

You can study Physics as part of a double degree. See pages 20–23 for available combinations.

Career information

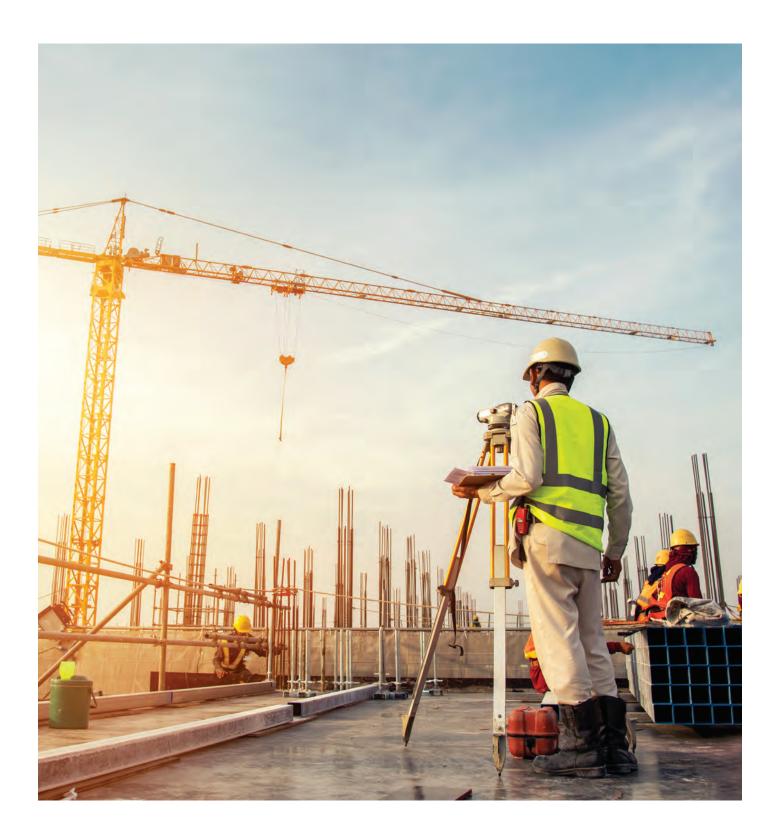
Careers

•

- Astrophysicist
- · Computational physicist
- Environmental physicist
- Finance Analysts
- Materials analyst
- Medical Physicists
- Meteorologist
- Satellite remote-sensing scientist.

- Astronomy
- Defence
- Environmental consultation
- · Manufacturing.





Course essentials

DEGREE

Bachelor of Surveying (Honours)

GUARANTEED ATAR 2021

70

PREREQUISITES

Mathematics Applications ATAR or equivalent

DESIRABLE

Mathematics Methods ATAR or equivalent

STAT

Accepted

PORTFOLIO ENTRY

Not accepted

INTAKE

Semester 1, Semester 2*

STUDY MODE

Full-time, part-time

DURATION

4 years full-time

LOCATION

Perth

CRICOS CODE

TBA

* Semester 2 intake available to domestic students only. Due to unit availability, commencement in Semester 2 may increase the course duration.

Visit curtin.edu/bach-surv.

Course description

Surveying is a highly-specialised professional discipline that involves measuring the surface of the Earth and its features.

Surveyors use sophisticated technology and scientific principles to provide practical surveying solutions and services to numerous areas of government and industry.

Curtin offers the only comprehensive honours degree in surveying in Western Australia. This course draws upon elements from a diversity of disciplines, including computing, engineering, environmental science, geography, geology, management, mathematics and physics. You will study specialist areas such as cadastral surveying, engineering surveying, geodesy and photogrammetry, and related areas such as hydrographic surveying, land development, mine surveying, planning and remote sensing.

You'll also become familiar with hightech areas, such as airborne and marine navigation, drone surveying, digital mapping, land and environmental management, laser scanning, satellite positioning and specialised alignment surveying.

This course allows you to focus on mine surveying in your third year and graduate instead with a Bachelor of Surveying Technology (Mine Surveying). See page 54.

Professional recognition

Graduates are eligible for membership of the Surveying and Spatial Sciences Institute and the WA Institute of Surveyors. Graduates are eligible for licensing by the Land Surveyors Licensing Board of Western Australia after a minimum of two years of additional training.

Career information

Careers

- Engineering surveyor
- Hydrographic surveyor
- Licensed land surveyor
- Mine surveyor.

- Construction
- Mining
- · Government (local, state and federal)
- Real estate
- · Scientific and technical services.

How to apply

1. Find a course

Find your course in this guide or at **study.curtin.edu.au.**

2. Check the admission criteria

Admission is usually based on graduating from high school and achieving the following:

ATAR or cut-off score

Domestic students: You need to achieve the minimum or guaranteed ATAR for your chosen course.

International students: Cut-off scores for most countries are shown against each course at study.curtin.edu.au.

English

Domestic students: You need a scaled score of at least 50 in English ATAR, Literature ATAR or English as an Additional Language/Dialect ATAR.

International students: See **curtin.edu/english-criteria** for your country's equivalent English competency criteria.

Prerequisites

Some courses require completion of certain high school subjects. These are called prerequisites.

Domestic students: You need a scaled score of at least 50 in these subjects.

International students: You'll need your country's equivalent pass mark in these subjects.

Other criteria

Some courses have additional requirements, like the submission of a portfolio.



THERE ARE MANY PATHWAYS TO CURTIN!

If you don't think you'll meet one or more of the criteria, there are many other pathways to Curtin.

See page 65 for enabling programs and other pathways.

3. Apply

Domestic students

For first semester, apply via **tisc.edu.au**. Applications open in May. If you are a school leaver, you can apply before you sit your final high school exams.

For second semester, apply directly to Curtin via **curtin.edu/direct.**

International students

First, you'll need to get certified copies of your qualifications and English language proficiency documents.

Applying through an agent: You may prefer to submit an application through a registered Curtin agent. To find an agent in your country, see **curtin.edu/agents.**

Applying online: If you'd rather not apply through an agent, find your course at **study.curtin.edu.au** and click APPLY NOW. From here, you can begin the online application process. Make sure your certified documents are ready to upload.

Applying by email or mail: Download the application form from **curtin.edu/int-apply** and post or email your completed application to the address specified on the form.

Most applications will be assessed within two weeks of submission.

Successful applicants will receive an offer package, which explains how to accept Curtin's offer and how to enrol. When your enrolment has been completed, you'll receive your Confirmation of Enrolment.

Your student visa

Apply for your student visa after you receive your Confirmation of Enrolment. If you will be under the age of 18 when you start your Curtin course, you must nominate a guardian.

Getting ready to go!

We want to make your transition to study in Australia as smooth as possible. Use our pre-departure resources to help you prepare for your move to Perth. international.curtin.edu.au/pre-departure

WE'RE HERE TO HELP

If you have any questions about admission, our team can help you.

Domestic students Tel: 1300 222 888 FAQ: future.connect.curtin.edu.au Web: study.curtin.edu.au International students Tel: +61 8 9266 5888 FAQ: future.connect.curtin.edu.au Email: study@curtin.edu.au

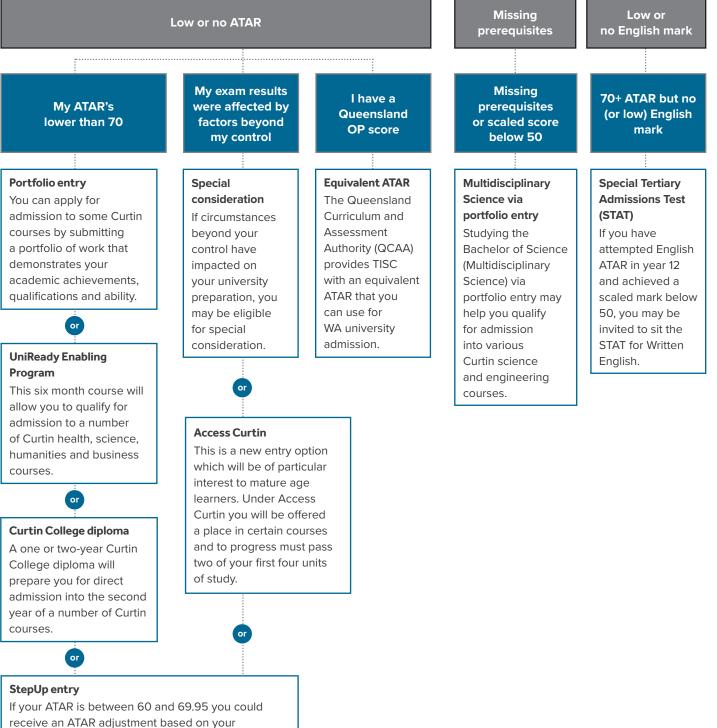
Web: international.curtin.edu.au

Pathways

There's more than one way to get into a Curtin course.

This diagram shows some common pathways that students take, but there are more.

Visit curtin.edu/pathways for all the ways you can gain entry to Curtin.



circumstances or location.



Course types

Bachelor degree

The standard university award recognised worldwide for successfully completing an undergraduate course.

Double degree

Studying two complementary bachelor degrees concurrently. For example, Bachelor of Science and Bachelor of Commerce.

Honours

Additional research and coursework at an advanced level.

Postgraduate degree

A higher degree qualification and subject specialisation that can be studied once you have completed a bachelor degree.

Undergraduate study

Tertiary education that leads to your first qualification from a university, usually a bachelor degree.

Course structure

Major

A series of eight or more units in an area of specialisation within a bachelor degree course. A major includes at least two units at final year level.

• **Double major:** studying two majors within a degree course.

Minor

A series of four units in the same subject, including at least two units at second-year level or higher.

Professional placement or internship

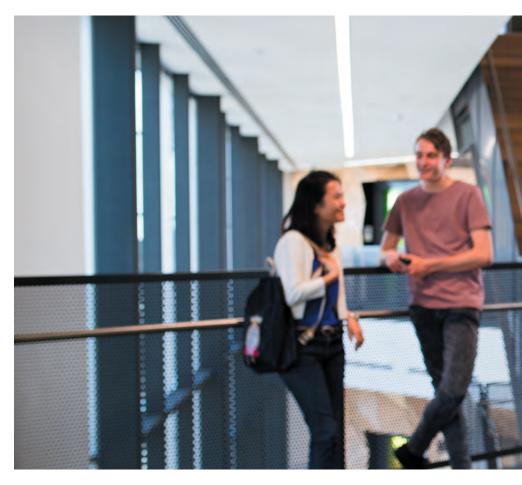
Working in a professional environment to extend your knowledge and practical skills.

Specialisation

Similar to a minor: a series of four units in the same subject, including at least two units at second-year level or higher.

Stream

An area of specialisation. For example, the Bachelor of Science (Nutrition and Food Science) enables you to specialise in either nutrition or food science.



Unit

A component of a course that covers one subject area in detail. A unit may comprise lectures, tutorials, class presentations, group work, computer lab sessions, case studies, workplace assignments and exams.

- **Core unit:** A compulsory unit, as specified in the course outline.
- Elective unit: A unit that you can select from any school or discipline, provided you meet the prerequisites.
- **Optional unit:** A unit that you select from a list specified in the course outline.

Course essentials

ATAR

The Australian Tertiary Admission rank, used for allocating places in university courses.

 Guaranteed ATAR: A rank that guarantees you a place on the course provided you meet the course prerequisites and English proficiency requirements. **Minimum ATAR:** The lowest rank you need to be considered for entry to a course.

CRICOS code

Courses registered with a Commonwealth Register of International Courses for Overseas Students (CRICOS) code are available to international students studying in Australia on a student visa.

Desirable

A non-essential but recommended subject completed before starting a course.

Duration

The time it will take to complete the course if you study full-time.

Intake

The annual study periods (semester or trimester) in which you can commence the course.

Location

Curtin campuses that offer the course.



Prerequisite

A subject or unit you must complete before starting a course or taking a higher-level unit.

STAT

A national test for those without formal entry requirements, which assesses aptitude for learning in a tertiary environment. STAT is used in two ways: as a pathway for mature-age students to meet all entry requirements for select courses, or as a way to satisfy Curtin's English proficiency requirements if you have not done so through your year 12 studies. Some courses require specific components of the test. Details about the test are at **tisc.edu.au/static/stat.tisc.**

Study mode

The type of study you undertake in a semester or a trimester – either full-time or part-time.

 Domestic students: full-time study is three or four units per semester. Part-time study is one or two units per semester. Studying part-time reduces your weekly workload but extends the duration of your course.

 International students: international students studying in Australia on a student visa must study four units per semester for most courses. A small number of courses allow a study load of three units.

Other university terms

Advanced standing

Recognition of any previous study or work experience you have that may exempt you from having to study some units of your degree. Previously called credit for recognised learning.

Faculty

A teaching area comprising university schools and disciplines.

Mature age

University applicants who are 20 years of age or over by 1 March (semester one intake) or 1 August (semester two intake) in the intended year of study.

OUA

Open Universities Australia.

Semester

A 17-week study period. There are two semesters per calendar year.

TISC

The Tertiary Institutions Service Centre processes university applications on behalf of the four public Western Australian universities. It also administers STAT.

Trimester

A 14-week study period. There are three trimesters per calendar year.

WACE

Western Australian Certificate of Education.

Your scholarship options



A scholarship at Curtin can provide you with financial, academic and career support, giving you more opportunities to gain new skills and expand your horizons.

A scholarship is a sum of money or other financial assistance awarded to students to support their study. Scholarships are not loans – the money does not have to be repaid, provided you fulfil requirements such as academic performance.

Each scholarship has particular eligibility criteria, application procedures and closing dates. You can subscribe to receive email alerts when scholarships that match your criteria are open for applications.

Domestic students

There is a variety of scholarships available from Curtin. Some scholarships are offered for academic achievement, while others are designed to make university possible for students who face financial hardship.

scholarships.curtin.edu.au

International students

International students can access a range of merit-based and need-based scholarships including the Australian Government's Endeavour Leadership Program and the Australia Awards Scholarships.

curtin.edu/schol-int

For more information Curtin University Kent St, Bentley Western Australia 6102

Postal Address GPO Box U1987 Perth Western Australia 6845

Domestic students

Tel:1300 222 888FAQ:future.connect.curtin.edu.auWeb:study.curtin.edu.au

International students

Tel:	+61 8 9266 5888
FAQ:	future.connect.curtin.edu.au
Email:	study@curtin.edu.au
Web:	international.curtin.edu.au

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