Make tomorrow better.

engineering.curtin.edu.au
Chris Norman, a fourth-year engineering student, was invited to work on the mechanical design of a folding robot as part of a smartphone, designed to cover areas that are inaccessible to a future Mars rover. “My role over the six months was to contribute to the mechanical design of the folding robot and assist with the pop-up feature, which allows the disposable robots to move across the rough and dangerous areas on Mars,” he explains.

Norman worked in a team alongside five “super casual” and “really passionate” t-shirt and shorts-clad JPL engineers, who designed other elements of the pop-up robot, such as the electronics, power banks and folding structure. “Being around people so successful pushed me to succeed,” he says. “Everybody had their masters or PhDs—they were incredibly, incredibly knowledgeable and self-driven—and the way they tackled [extremely impossible] problems astounded me.”

“There is the very real chance that something they work on at JPL will one day be sort of an interplanetary mission, and that is incredibly exciting,” he says. “For Curtin, it provides a validation of the research skills we teach, and of the outstanding capabilities of our best students.”

The internship was established through Curtin University in late 2015 after an approach by 2002 Curtin mechatronics graduate Robert Reid, who now works at JPL. The internship was offered to third- and fourth-year science and engineering students and received an overwhelming response: “We had 24 students apply, and a panel of academics shortlisted seven, then JPL selected two final students to travel to California for the internship,” says Paxman.

The other intern, physics and electronic and communication engineering student Tom Paynter, worked on a drone project at JPL and is currently on academic exchange in Sweden.

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ACADEMIC CALENDAR
Our engineering courses are taught on a semester basis.

SEMESTERS 2017/2018

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<tr>
<td>Semester starts</td>
<td>31 Jul</td>
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<td>22 Nov</td>
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International students
International students studying in Australia on a student visa can only study full-time and there are also specific extra requirements that must be met. As some information contained in this publication may not be applicable to international students, refer to international.curtin.edu.au for further information. Australian citizens, permanent residents and international students studying outside Australia may have the choice of full-time, part-time and external study, depending on course availability and in-country requirements.

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CRICOS Provider Code 00001J

20/06/18

© Curtin University 2017. Copyright Curtin University depending on course availability and in-country requirements. Australia may have the choice of full-time, part-time and external study, depending on course availability and in-county requirements.
Curtin is a vibrant and collaborative place, where ideas, skills and cultures come together. With campuses in Western Australia, Malaysia and Singapore, as well as a global network of university partners such as the Sri Lanka Institute of Information Technology, Curtin is an international university with a rapidly expanding global footprint.

THE CURTIN EXPERIENCE
Curtin offers you the complete package, with our strong rankings, double degree options, generous scholarship opportunities and high-tech learning spaces.

By studying engineering with us, you can begin work as a professional graduate engineer in just four years. This is because our Bachelor of Engineering (Honours) degrees are recognised by Engineers Australia, which not only ensures our program meets international benchmarks such as the Washington Accord, but also recognises our graduates as having the skills to practise as a professional engineer.

ENGINEERING THE FUTURE
From ancient civilisations to the modern world, engineers have used their skills to improve the lives of people and their community.

As a future-focused engineer, you’ll find increasing opportunities for cross-disciplinary work. In addition to traditional engineering fields, you may find work in areas such as financial markets, film and music, robotics, health, aeronautics, renewable energy or computer networks.

These areas all need creative and innovative people like you, who can solve problems, communicate well and focus on making a positive difference to people and communities. And with opportunities all around the world for work, engineering is an exciting field that provides a passport to a global career.

BEGIN YOUR CAREER AS A GRADUATE ENGINEER IN JUST FOUR YEARS.
Our focus on teaching engineering skills right from the start of your degree means that by studying at Curtin, you can become a professional graduate engineer in just four years with an honours qualification.

NOT SURE WHAT FIELD YOU WANT TO SPECIALISE IN? CHOOSE YOUR MAJOR LATER.
Our award-winning Engineering First Year lets you sample multiple majors before deciding which one to specialise in from your second year.

GET PROFESSIONAL EXPERIENCE BEFORE YOU GRADUATE.
Over the course of your degree you’ll accrue at least 480 hours of exposure to professional practice, ensuring you graduate career-ready.

IMPROVE YOUR CAREER PROSPECTS WITH INTERNATIONAL EXPERIENCE.
Our engineering courses in Malaysia and Perth are identical in structure, meaning you can transfer between campuses with ease.

GET DOUBLE THE DEGREES IN LESS THAN DOUBLE THE TIME.
Our double degrees have a condensed course structure, meaning you’ll complete two qualifications faster than if you studied them separately, and graduate with expanded career options.
GET THE CURTIN EDGE

Studying at Curtin is about more than just getting a degree. We offer a range of outstanding, interdisciplinary services and opportunities to complement our courses, all designed to give you the Curtin edge and improve your career prospects.

LEADERSHIP OPPORTUNITIES
The Curtin Leadership Centre helps you develop your skills in public speaking, project management and self-awareness. You can learn how to apply your new skills through volunteering and community projects.

CURTIN CHALLENGE
This fun, interactive platform lets you develop your leadership skills, build your networks and shape your future. You can choose from the Curtin Leaders Program and the Careers Illuminate Challenge. The Curtin Leaders Program combines leadership skills modules with volunteering, to help you learn more about yourself, how you work in teams and how to make positive change in your community. The Careers Illuminate Challenge lets you create a personal brand, plan your career path and develop your job application tools.

challenge.curtin.edu.au

JOHN CURTIN LEADERSHIP ACADEMY
The John Curtin Leadership Academy is an intensive co-curricular leadership program. Completed over one semester, the program includes a four-day leadership camp, six leadership workshops and a team project with a not-for-profit organisation.

life.curtin.edu.au/jcla

PROFESSIONAL PRACTICE
By studying engineering at Curtin, you’ll have the opportunity to apply your learning in a real-world industry environment before you graduate. Engineers Australia’s requirements for recognition mean that you will undertake at least 480 hours of exposure to professional engineering practice (EPEP) over the course of your degree.

You’ll get support before and during your EPEP to ensure that you’re well prepared to get the greatest benefit from the experience. This includes help finding EPEP opportunities and help providing your host organisations with the correct documentation.

Your EPEP can include engineering vacation work, part-time jobs, site visits and technical presentations, volunteering and professional development. It can be paid or unpaid, and undertaken locally, nationally or internationally. EPEP provides an insight into industry and complements your formal studies. You’ll be encouraged to reflect on the link between your EPEP and what you learn in your course.

“IT PAYS TO BE A CURTIN GRADUATE

Employment rates for Curtin domestic graduates have been consistently higher than the national average, and they earn more than their national peers.

Graduate Outcomes Survey – Longitudinal data 2016

LEADERSHIP OPPORTUNITIES

“I was really honoured to be recently named a Member of the Order of Australia. This was for my work in executive roles in the mining industry as well as my work as a mentor for women in the industry. It’s been an important part of receiving this award that I’ve been able to go out there and share my story, and hopefully help other young women to realise that there are amazing careers to be had in mining.”

Sabrina Shugg AM
Bachelor of Engineering (Honours) (Mining Engineering)
National Lead, Mining Performance KPMG

“IT PAYS TO BE A CURTIN GRADUATE

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Graduate Outcomes Survey – Longitudinal data 2016

LEADERSHIP OPPORTUNITIES

“I was interested in robotics from childhood. When I watched NASA’s robot Sojourner driving on Mars in 1997, I thought, ‘Cool – that’s where I want to go work’, but I didn’t think there was any chance of that. But an awesome set of coincidences, being in the right place at the right time coupled with hard work and a PhD, got me there.”

Robert Reid
Bachelor of Engineering (Honours) (Mechatronics Engineering)
Robotics Software Engineer NASA’s Jet Propulsion Laboratory

CONNECT WITH INDUSTRY

At Curtin, we encourage you to build your industry network before you graduate. Our engineering courses are designed to include industry advisory panels, site visits and industry guest lecturers so that you’ll get exposure to some of the industry’s top employers.

During your final year, you could even have the opportunity to work on a research project that is directly connected with the needs of a particular employer within the industry, leading to potential job opportunities upon graduation.

Curtin enjoys strong partnerships with the following industry leaders, all of which are sponsors of our landmark Engineering Pavilion Complex.

Distinguished partner

Principal partners

Supporting partners

PROFESSIONAL PRACTICE

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CURTIN RESOURCES AND CHEMISTRY PRECINCT
The magnificent $116 million Resource and Chemistry Precinct is designed to educate and train the next generation of scientists and engineers. It is a meeting place for researchers and business people, as well as teachers, students and members of the community. Expansive, open-plan laboratories, floor-to-ceiling glass internal walls and full-length, line-of-sight corridors provide an inviting, interactive space in which to learn.
chemistry.curtin.edu.au/facilities

GREEN ELECTRIC ENERGY PARK
The Green Electric Energy Park (GEEP) is a laboratory that enables you to conduct advanced experiments and research projects on various types of renewable energy sources, such as solar, wind and hydro, distributed generation using hydrogen fuel cells, battery energy storage-based micro-grids, hybrid power systems, power converters and energy storage. GEEP is unmatched in Western Australia and serves as a model for future renewable energy laboratories due to how renewable energy sources are integrated and displayed.
ece.curtin.edu.au/facilities/geep

CURTIN ENGINEERING PAVILION COMPLEX
The $32.5 million Curtin Engineering Pavilion Complex is made up of an exhibition plaza and two buildings: the student-centred Curtin Engineering Pavilion and the Engineering Postgraduate Research Hub. An aerial bridge links to adjacent buildings to form an impressive engineering precinct. Rooftop water tanks and temperature banding, designed to reduce water usage and electricity consumption, contributed to the facility receiving a 5-star Green Star rating by the Green Building Council of Australia.

The facility’s innovative design and technologies double as hands-on learning tools for Curtin’s engineering students. Referred to as a ‘living laboratory’, the pavilion provides interactive visualisations of the building’s mechanical and chemical processes. A data recorder and playback device interact with stress and vibration sensors installed on various parts of the building. And because the pavilion is designed to foster research and industry collaboration as well as meeting educational needs, on-demand, real-time and historical building data can be used for engineering education and research.
engineering.curtin.edu.au/pavilion

FACULTY OF ENGINEERING AND SCIENCE BUILDING, MALAYSIA
The new RM20 million Faculty of Engineering and Science Building at Curtin’s Malaysian campus in Sarawak, is a significant addition to the campus facilities. The four-storey building is a signature work of architecture and a landmark for the campus’s Skylark Precinct. It brings together the faculty’s administrative and teaching facilities, housing three lecture halls, four classrooms, meeting and discussion rooms and offices. It includes learning spaces equipped with the latest technological advances in teaching and learning to support active student learning and facilitate two-way learning activities between the Malaysian campus and Curtin’s main campus in Perth.
curtin.edu.my
EXPERIENCE CURTIN LIFE

There is a sense of community both in and out of the classroom, with new collaborative learning spaces replacing traditional classrooms, and outdoor leisure areas with bean bags, hammocks, outdoor games and food trucks to enjoy in-between classes.

STUDENT GUILD
The guild offers education, welfare and social services as well as lots of extracurricular activities such as the Guild Ball, tavern shows, multicultural week, sport and recreation, and market days.

STUDENT CLUBS
Get the most out of your time at university and join a student club. You’ll get to meet new people, attend great social and networking functions and make friendships that could extend beyond your university years.

CURTIN MOTORSPORT TEAM
The Curtin Motorsport Team designs and builds a small, open-wheel racing car for entry in the annual Formula SAE competition.

CURTIN ENGINEERS’ CLUB
The Curtin Engineers’ Club holds regular social events, including Curtin’s largest student ball, the Ignite Ball. Many of these events are sponsored and attended by industry members.

CURTIN ROBOTICS CLUB
Meet other students who are interested in robotics and electronics development. Get involved in exciting, educational projects as well as local and international competitions.

WOMEN IN ENGINEERING
The Women in Engineering Curtin Division (WIECD) supports female students in science, technology, engineering and maths. WIECD is sponsored by companies such as Hatch, Rio Tinto, Westformers, GE Oil and Gas, Monadelphous and Woodside.

WASH WOMBATS
The WASM Wombats train in various forms of traditional mining techniques and compete overseas at the World Mining Games, which has led to their international reputation for success. The team is based at Curtin’s Kalgoorlie Campus at the Western Australian School of Mines.

SPORT AND RECREATION
Curtin Stadium is the home of sport, fitness, recreation and events, with a main gym, women’s gym, large group fitness area, indoor cycling studio, sports hall and multi-purpose courts available for hire. There is a variety of registered and affiliated sports clubs catering for all levels of skill and experience, so you can participate whether you’re new to a sport or aim to compete at an elite level.

CAMPUS SERVICES

Curtin Connect
Career support
Current student services
Future student services
Housing services
Student wellbeing advisory services

Learning support
English language support
Leadership programs
Learning programs
Mentoring programs

Technology
24-hour computer lab access
Email services
Print and design services
Wi-Fi access

Body and mind
Counselling services
Disability services
Health and medical centre
Physiotherapy clinic
Prayer rooms
Sports centre and gym

Food and retail
Bookshops
Food outlets
Hairdresser
Newsagency
Optometrist
Pop-up food trucks

CAMPUS SERVICES

life.curtin.edu.au

*Main campus in Bentley, Perth. Services at other Curtin campuses may vary.
The academic programs, including course materials and examinations, are the same as the equivalent courses offered in Perth, so you can transfer easily, with no interruption to your studies.

PERTH
Our main campus in Bentley, located six kilometres from central Perth in Western Australia, is a place of inspiration and innovation. With technology-rich learning spaces and opportunities to meet people from around the world, your experience here can be life-changing.

We’ve recently embarked on a 20-year master plan to turn the campus into a cultural hub, bringing together education, business, technology, housing, public transport, the arts and recreation.

KALGOORLIE
Studying in Kalgoorlie puts you in the heart of Western Australia’s most renowned mining region. The Curtin WA School of Mines offers a wide range of internationally recognised courses in mining engineering, metallurgical engineering, geographic information science, surveying, extractive metallurgy, applied geology and exploration geophysics. Recently renovated student housing is located close to the campus.

MALAYSIA
Located near the city of Miri on the island of Borneo, Curtin Sarawak has a beautiful garden campus nestled between the world’s oldest rainforest and the South China Sea. You can enjoy warm weather all year, indulge in the local culture and food, and discover the area’s natural wonders.

EXPLORING THE WORLD
As a Curtin student you can explore the world, with opportunities to study for up to two semesters at one of our partner institutions in Europe, Asia or the US. Travelling and experiencing different cultures broadens your horizons and adds international experience and credit to your degree.

EXCHANGE OPPORTUNITIES
Curtin has exchange agreements with a number of partner universities around the world. Going on exchange has a number of benefits, including:
- improving your cultural awareness
- developing your independence and initiative
- boosting your confidence
- broadening your networks and potentially increasing your employability.

Financial assistance may be available to help with travel costs. Types of assistance include scholarships, travel bursaries, Commonwealth grants or an OS-HELP loan. Conditions apply.

outboundsudy.curtin.edu.au

SRI LANKA INSTITUTE OF INFORMATION TECHNOLOGY
Curtin has had a successful partnership with the Sri Lanka Institute of Information Technology (SLIIT) since 2002. The graduates from the partnership programs are well regarded in industry.

The Curtin courses offered at SLIIT in year 3 and 4 share the same course structure and curriculum as the courses at Curtin in Perth. Because of this, you can transfer between Curtin’s main campus in Perth and SLIIT to complete your degree with no interruption to your study plan.

The Bachelor of Engineering (Honours) majors offered at SLIIT for years 3 and 4 are:
- Civil and Construction Engineering
- Computer Systems Engineering
- Electrical Power Engineering
- Mechanical Engineering

STUDY ABROAD
Take yourself on a self-directed study experience to locations around the world. If you want to study overseas at an institution that Curtin doesn’t have a partnership with, you can go on Study Abroad. This is a self-directed experience in which you manage your application and study arrangements yourself. As you’ll be studying at a non-partner university, you may be required to pay international student fees, which you are unable to defer through HECS.

WORK ABROAD
As an engineering student, you can work all or part of your 480 hours of exposure to professional engineering practice at an institution overseas. See page 4 to find out more about professional practice.

AN ENGINEERING DEGREE IS A PASSPORT TO A GLOBAL CAREER
With an engineering degree from Curtin, you could work as a professional graduate engineer in multiple countries around the world. That’s because the Bachelor of Engineering (Honours) meets the international benchmarks set by the Washington Accord, a mutual recognition agreement between accrediting bodies from the Accord’s signatory countries, including Australia, Canada, China, Hong Kong, India, Ireland, Japan, Korea, Malaysia, New Zealand, Russia, Singapore, Sri Lanka, South Africa, Turkey, UK, and the US.

"I didn’t know what to expect going to Kalgoorlie in my fourth year as a metallurgical engineering student at the Western Australia School of Mines, but it has been one of the best decisions I have ever made. We get innumerable amounts of industry networking opportunities and the interactions are really rewarding. The regular visits to mine sites and processing plants provide practical insight into what we learn in class. In the final year, we have the opportunity to go on an international field trip to countries like Canada or Germany and learn about metallurgical processes from a different aspect. The WA School of Mines lives up to its reputation and is a very enriching experience for every student."

Omesh Bharatiya
Bachelor of Engineering (Honours) (Metallurgical Engineering) student

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outboundsudy.curtin.edu.au

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**COURSE TYPES**

**BACHELOR DEGREE**
A bachelor degree is awarded for successful completion of an undergraduate course.

**DOUBLE DEGREE**
A double degree means you study two complementary bachelor degrees within a shorter timeframe than it would take to complete the degrees separately.

**HONOURS**
Honours is research and coursework at an advanced level. Engineering degrees at Curtin are all honours degrees.

**MAJOR**
A major is a series of more than eight units combined to satisfy Curtin’s requirements in an area of specialisation within a bachelor degree. A major includes at least two units at final-year level.

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

**POSTGRADUATE STUDY**
A postgraduate course leads to a higher qualification and specialisation in a particular area. You may choose to study a postgraduate course once you have completed your bachelor degree.

**UNDERGRADUATE STUDY**
Education that leads to a first qualification from a university, usually a bachelor degree.

**COURSE ESSENTIALS**

**ATAR**
The Australian Tertiary Admission Rank (ATAR) is used for allocating places in university courses. It is calculated from the Tertiary Entrance Aggregate (TEA) for school leavers. This name replaced Tertiary Entrance Rank (TER) as of 2010.

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

**DESIRABLE**
A subject that is desirable but not essential for you to complete before starting a course.

**PRIEREQUISITE**
A subject or unit you must complete before starting a course or taking a higher level unit in a particular area.

**STAT**
The Special Tertiary Admissions Test (STAT) is a pathway to university for mature-age students who don’t meet the entry requirements.

**STUDY MODE**

**DOMESTIC STUDENTS**
To study full-time, you will enrol in three or four units per semester (75 to 100 credits). To study part-time, you will enrol in one or two units per semester (25 to 50 credits). Studying part-time reduces your weekly workload, but extends the duration of the course.

**INTERNATIONAL STUDENTS**
International students studying in Australia on a student visa must study four units a semester (100 credits) for most courses. A small number of courses allow a study load of three units (75 credits).

**COURSE STRUCTURE**

**CORE UNIT**
A compulsory unit of study as specified in the course outline.

**ELECTIVE UNIT**
A unit you can choose that is not specified in the course outline.

**OPTIONAL UNIT**
A unit you can choose from a specified list provided in the course outline.

**STREAM**
A specialised structure of units within a course.

**UNIT**
A distinct area of study that is a component of a course.

**OTHER UNIVERSITY TERMS**

**FACULTY**
A faculty is a teaching area. It comprises university schools and departments within that teaching area.

**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.

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

**TISC**
The Tertiary Institutions Service Centre (TISC) processes university applications on behalf of the four public Western Australian universities. It also administers the Special Tertiary Admissions Test (STAT).

**STUDY AT UNIVERSITY**

**A TYPICAL DAY AT UNIVERSITY**

**UNIVERSITY TERMS**

**A TYPICAL DAY FOR A FIRST-YEAR STUDENT**

7 am
Check your timetable and class locations for the day in elsie

7.30 – 8.30 am
Moming workout at Curtin Stadium

9 – 10 am
Engineering Programming lecture

10 am – 1 pm
Hands-on laboratory for Engineering Mechanics

1 – 1.45 pm
Grab a bite to eat from one of the pop-up food trucks

1.45 – 1.50 pm
Check your emails in OASIS

2 – 3 pm
Professional development with one of Curtin’s industry partners

5 – 6 pm
Access iLecture to review yesterday’s lecture

7 – 9 pm
Log on to Blackboard to begin your readings for next week’s classes.

*example only.*
ENGINEERING FOUNDATION YEAR

The Bachelor of Engineering (Honours) begins with the award-winning Engineering Foundation Year (EFY). Developed in partnership with industry, the program and its purpose-built first-year studios encourage learning by doing.

You will study the fundamental concepts and develop the required skills common to all areas of engineering. You will have a great opportunity to explore the range of engineering majors available to you before choosing the one you wish to specialise in from your second year.

Our engineering majors are:
- chemical engineering
- civil and construction engineering
- computer systems engineering
- electrical power engineering
- electronic and communication engineering
- mechanical engineering
- mechatronic engineering
- metallurgical engineering
- mining engineering
- petroleum engineering.

THE PROGRAM

The EFY program was developed as a base for all Curtin engineering disciplines to produce graduates with solid theoretical grounding, strong practical experience and cultural awareness.

ENGINEERING YEARS 2 TO 4

In years 2 to 4 of your engineering degree, you will study units relevant to your chosen major. You can find more information about the majors in the following pages of this guide.

In your fourth year, you will undertake an honours-level research project that will give you an in-depth understanding of a chosen thesis topic. It involves an independent research project structured across two units of study, showing employers your skills in planning and carrying out a complex body of work within defined deadlines.

PROFESSIONAL PRACTICE

To graduate from this course, you must undertake 480 hours of exposure to professional practice and complete senior first-aid training.

Alongside your academic studies, exposure to professional practice can be obtained by a combination of real-world experiences. Examples include work placements (paid or voluntary), university-based experience in industrial projects, attending extra-curricular technical lectures/workshops and industry site visits in Australia or overseas.

More information on professional practice can be found on page 4.

PROFESSIONAL ACCREDITATION

All Curtin engineering degrees meet the stage one requirements for the pathway to professional engineer status (CPEng) from Engineers Australia.

NEW ENTRY REQUIREMENTS

Entry into engineering at Curtin changed in 2017, with the prerequisites changing to accommodate an industry shift into an increasingly cross-disciplinary profession.

In addition to the standard Curtin English requirements, you will need to have passed the following subjects:
- Mathematics: Methods ATAR
- at least one of the following:
  - Physics ATAR
  - Chemistry ATAR
- Engineering Studies ATAR

Mathematics: Specialist ATAR is desirable but not essential.
Chemical engineering covers the development, design and management of processes and equipment for the extraction, conversion and upgrading of raw materials into higher-value products. Chemical or ‘process’ engineering involves finding the best sequence of chemical and physical processing operations, and the right operating conditions, to convert raw materials into higher value products.

In the general Chemical Engineering board manufacture, biomass and sugar, metals extraction and refining, paper and treatment, fertiliser manufacture, cement processing, water and wastewater bio-processing, pharmaceuticals, food petrochemical and polymer production, petroleum refining, gas processing, biological operations.

As our built environment becomes increasingly complicated, ambitious construction projects can only be completed by teams of people with different skills, working together. The civil engineer is central to this process.

In your first two years you will develop basic scientific, mathematical and practical skills. You will learn how to use these skills to solve engineering problems, first in our Engineering Foundation Year and then by developing specific civil engineering attributes.

In your third year you will learn to apply these skills in structural analysis and design, materials, environmental engineering, construction engineering, hydraulics and professional practice.

In your final year of study you will undertake a major research or design project. Speciality options include the environment, transport, public health or advanced structural design.

Civil engineers design and construct our infrastructure. Every structure that is on or in the ground is the work of civil engineers. They build bridges, roads, harbours, highways, dams, irrigation and water supplies, hydro-electric projects, tall buildings and other large structures.

As our built environment becomes increasingly complicated, ambitious construction projects can only be completed by teams of people with different skills, working together. The civil engineer is central to this process.

In your first two years you will develop basic scientific, mathematical and practical skills. You will learn how to use these skills to solve engineering problems, first in our Engineering Foundation Year and then by developing specific civil engineering attributes.

In your third year you will learn to apply these skills in structural analysis and design, materials, environmental engineering, construction engineering, hydraulics and professional practice.

In your final year of study you will undertake a major research or design project. Speciality options include the environment, transport, public health or advanced structural design.
The most important job of a computer systems engineer is not simply to engineer computer technology, but to understand how that technology fits into a bigger picture. Computer systems engineers work with computer hardware, software, and circuits to engineer solutions that seamlessly integrate these elements to produce faster, more efficient network and communication systems.

Many recent technological advancements are underpinned by computer systems. The range of uses for microprocessors is increasing, from smart phones and games consoles to aircraft brakes, aircraft flight control systems, robots and global telecommunications. These tiny control devices function as part of a much larger system and the technology is advancing rapidly.

This major combines elements of electrical engineering and computer science. Through this, you will gain the skills and understanding needed to design and operate the next generation of embedded computer systems, accurately, reliably and safely.

In your final year of study you will undertake a major research or design project.

Employment for ICT support and test engineers is expected to grow very strongly.

Your future in Computer Systems Engineering

Career Opportunities
- Communications engineer
- Computer engineer
- Electronics engineer
- Systems engineer

Further Study
Coursework
- Master of Engineering Science (Electrical Engineering)
Research
- Master of Philosophy
- Doctor of Philosophy

Further Study
Coursework
- Master of Engineering Science (Electrical Engineering)
Research
- Master of Philosophy
- Doctor of Philosophy

Career Opportunities
- Electrical engineer
- Electrical power engineer
- Power systems engineer

Employment Industries
- Solar and renewable energies
- Electricity supply and distribution
- Electricity generation
- Electricity transportation
Electronics and communications engineering is a growing area driving many everyday technologies, including text messaging, Wi-Fi, TV and radio astronomy.

This major will give you an appreciation of the whole field. You will explore analogue and digital communications, sensors, imaging, control instruments, electronic design, signal processing, and telecommunications and computer networks.

In your final year of study you will undertake a major research or design project.

You can also choose to study part of this course at our campus in Malaysia under the new Electrical and Electronic Engineering major offered there.

"Electronic and communication engineering is to do with the transfer of data, like from your phone to a satellite, for example. But it’s also about developing devices for home security, such as sensors."

Earlier this year I joined the STEMnistas group. STEM stands for science, technology, engineering and mathematics, and the group unites pre-service teachers with mainly female engineering students. I joined because their purpose was to go to primary schools and encourage younger kids to get involved with STEM subjects, and I just thought I’d love to show these kids that science and engineering is actually really fun, and that you can do some amazing things."

Rachel Forman
Bachelor of Engineering (Honours) (Electronic and Communication Engineering) and Bachelor of Science (Physics) student

Working closely with audio wearable company Nuheara, a Curtin research team led by Professor Sven Nordholm from the Department of Electrical and Computer Engineering is developing algorithms that are achieving an exceptional level of sophistication in blending audio streams from the digital world with sounds from the physical world.

The earbuds connect with Bluetooth devices and allow the wearer control over what they hear. They can be used to augment sounds in the environment like a hearing aid does, or block them out for some peace and quiet.

They can also let you blend the music you are listening to with the sounds around you for situational awareness, making riding your bike on the street or crossing roads safer.

Sweet-proof, water-resistant and designed with your comfort in mind, IQbuds are changing the way millions of people listen to the world. It’s just another way engineers are changing the world we live in.

THE NEW WORLD OF INTELLIGENT HEARING

Control what you want to hear with the intelligent wireless earbuds, IQbuds. Combining Bluetooth technology with complex algorithms, IQbuds let you turn up the volume on the things you want to hear, and block out the stuff you don’t.

COURSE ESSENTIALS

LOCATION

Perth

INTAKE

Feb, Jul

PERMANENT EMPLOYMENT INDUSTRIES

• Communications engineer
• Electrical engineer
• Electronics engineer
• Network controller

YOUR FUTURE IN ELECTRONIC AND COMMUNICATION ENGINEERING

FURTHER STUDY

COURSEWORK

• Master of Engineering Science (Electrical Engineering) RESEARCH
• Master of Philosophy
• Doctor of Philosophy

COURSE STRUCTURE

Available as a double degree (see page 30).

Year 1
Electrical Circuits
Mathematics and Probability Theory
Foundations of Digital Design

Year 2
Advanced Engineering Programming
Electromagnetic and Electromechanical Energy Conversion
Electronic Fundamentals
Signals and Systems
Microprocessors

Year 3
Engineering Electromagnetics and Transmission Lines
Control Systems
Digital Signal Processing
Data Communications and Networking
Electronic Design
Renewable Energy Principles
Communications Engineering

Year 4
Engineering Sustainable Development
Law for Engineers

COURSES OF THE YEAR

• Concurrent Systems
• Engineering Research Project 2

Optional units

Year 1
Power Electronics
Smart Grids and Renewable Energy Systems
Wireless Data Networks
Quantum Physics
Operating Systems
Advanced Computational Quantum Mechanics

Year 2
Advanced Optimisation Techniques

Year 3
Power System Analysis
Electrical Machines and Stability

Year 4
Embedded Systems Engineering
Network Engineering Exploring the Radio Universe
Solid State Physics
Mechanical engineers analyse and develop technological systems that involve motion. They help society to harness the energy and forces that exist in nature.

This course is fundamentally oriented to provide learning and skills development opportunities with hands-on experience. You will learn how to apply your knowledge and skills to invent or develop solutions to a wide range of exciting and challenging problems in industry.

You will appreciate the applicability of the multidisciplinary problem-solving skills of a mechanical engineer across areas of science and a wide spectrum of engineering endeavours that extends all the way to biomedical engineering.

In your final year you will undertake an individual design or research project.

"I feel that some of the key units really focus on the application of knowledge. I had a mechanical design project in one of my units that required me to design a gearbox, and that involved everything from working out the actual application of the gearbox, to sizing it to make it work in a real world situation. I think that really exposed me to report writing and how the actual engineering design process works. I really liked learning the application of it."

My ideal job would be an engineer working in response to crises in Australia or overseas. If, for example, there’s an earthquake in Haiti, you need a team of engineers to go in and inspect the buildings and make sure the systems and infrastructure that was in place before the earthquake are still functioning, assess what needs to be repaired and stop people from accessing places that are unsafe."

Liam Richer
Bachelor of Engineering (Honours) (Mechanical Engineering) student.

**FRICITION SPARKS NEW IDEAS**

At Curtin’s Tribology Laboratory, researchers are developing an innovative technique to identify and predict osteoarthritis in knee joints and hands at a much earlier stage than is currently possible. And it all comes down to understanding the science and technology of lubrication, friction and wear.

Tribology originated from the art of lubrication but has since developed to a much broader range of applications. It deals with the phenomena occurring at the interfaces between moving surfaces in machinery, electrical contacts and even in biology – as can be seen from the knee osteoarthritis research. Without research in tribology we wouldn’t have modern ships, cars, planes, hand drives, satellites or even artificial hip or knee implants. Since tribology is an interdisciplinary area of science, it requires knowledge from fields of chemistry, physics, material science, engineering, computational science and many others.

The Tribology Laboratory is a leading research laboratory in Australia, and the knee osteoarthritis research is just one example of the many projects they have underway. The laboratory is led by Professor Gwidon Stachowiak, who has recently been awarded the UK Institution of Mechanical Engineers Tribology Gold Medal. This is the highest award in this discipline and Professor Stachowiak is the first Australian to receive the annual accolade. Professor Stachowiak is also a recipient of the title of Doctor honoris causa from Ecole Centrale de Lyon, one of the most prestigious distinctions awarded by the French engineering school.

**YOUR FUTURE IN MECHANICAL ENGINEERING**

**CAREER OPPORTUNITIES**
- Aeronautical engineer
- Mechanical engineer
- Mechanotronic engineer

**EMPLOYMENT INDUSTRIES**
- Aerospace and automotives
- Manufacturing
- Mining
- Mineral and material processing
- Plant operation and maintenance
- Power generation
- Robotics
- System design
- Transport
- Water supply

**FURTHER STUDY**
- Coursework:
  - Master of Engineering Management
  - Master of Science (Industrial Engineering)
- Research:
  - Master of Philosophy
  - Doctor of Philosophy

**COURSE ESSENTIALS**

**LOCATION**
- Perth, Malaysia, Sri Lanka*
- *July intake is not available in Sri Lanka.

**INTAKE**
- Feb, Jul

*Only years 3 and 4 of this course are available to study in Sri Lanka.*

**COURSE STRUCTURE**

Correct as at December 2016, but subject to change.

<table>
<thead>
<tr>
<th>Year</th>
<th>Units</th>
</tr>
</thead>
<tbody>
<tr>
<td>Year 1</td>
<td>Engineering Foundation (see page 15)</td>
</tr>
<tr>
<td>Year 2</td>
<td>Engineering Graphics</td>
</tr>
<tr>
<td>Year 3</td>
<td>Engineering Mathematics</td>
</tr>
<tr>
<td>Year 4</td>
<td>Mechanical Engineering Research Project 1 (see page 15)</td>
</tr>
</tbody>
</table>

Optional units list 2
- Sustainable Energy Systems and Technologies |
- Engineering Design Methodology |
- Heat Transfer |
- Vibration |
- Measurement Science and Technology |
- Materials Engineering |

Optional units list 2
- Engineering Noise Control |
- Fluids Engineering |
- Advanced Refrigeration |
- System Design |

*Only years 3 and 4 of this course are available to study in Sri Lanka.*
Mechatronic engineers work in advanced manufacturing environments such as aerospace, biotechnology, robotics and agrotechnology. With hybrid skills in mechanical, electrical and computer engineering, mechatronic engineers are in high demand for the jobs of the future.

Advances in automation applications, such as self-driving cars, are resulting in an increased awareness of the need for innovative mechatronic engineers. As the number of industries being disrupted by digital technologies grows, so do opportunities for mechatronic engineers. Industries such as transportation, agriculture and biomedical engineering all require the expertise of mechatronic engineers to continually improve society’s quality of life.

As a mechatronic engineering student, you will design and maintain electronic and computer-controlled systems, including power generators, mining and chemical plant machinery, and intelligent machines such as unmanned aerial vehicles and autonomous robots. You will develop sound theoretical knowledge in the key disciplines of mechanics, electronics and computer systems. In your final year of study you will undertake a major research or design project.

YOUR FUTURE IN MECHATRONIC ENGINEERING

CAREER OPPORTUNITIES
- Automation engineer
- Engineering data specialist
- Mechanical engineer
- Mechatronic engineer

EMPLOYMENT INDUSTRIES
- Aerospace
- Agritech
- Autonomous vehicles
- Biosensors and security systems
- Biotechnology and biometrics
- Drone and unmanned vehicle technologies
- Nanotechnology and nanorobotics
- Renewable energy grids
- Robotics

A TECHNICAL INNOVATION WITH A HUMAN TOUCH

After doctors operate on a finger tendon, specialists apply a splint so unwanted movement doesn’t damage the repairs. However, to return to normal, healthy motion, the finger will gradually need to start moving.

Curtin’s Dr Lei Cui has designed a splint that immobilises fingers as long as necessary, but then starts to move them, gently and precisely. The device is set up by a health professional and tailored to the individual, becoming an integral part of the rehabilitation process.

Dr Cui said the finger orthosis project is the simplest design that can achieve active movement of all three finger joints from a single actuator or driver.

“Robotic exoskeletons can protect a patient’s tendons while minimising the risk of complications after hand tendon surgery,” Dr Cui says.

“A tailormade exoskeleton that fits an individual’s hand perfectly will define the future of hand rehabilitation.”

Using similar engineering and design principles, Dr Cui is now developing a leg exoskeleton to help people with spinal cord injuries to walk again. The leg exoskeleton has a single motor to control the hip, knee and ankle joints, allowing fluid coordination and a more natural walking gait.

Dr Cui is enthusiastic about continuing advances in robotics and believes that in the future, robotic rehabilitation and robotic limbs will become commonplace.

James Linwin
Bachelor of Engineering (Honours) (Mechatronic Engineering) student

"I’m currently working on my research thesis – my honours thesis – which is the development of an autonomous wheeled robot for meteor detection. This is a part of the Desert Fireball Network, which is a big initiative out of Curtin for locating meteoretes. I am working on the sensor payload, the meteorite detection, and high-level pathfinding."

COURSES

- Automation engineer
- Engineering data specialist
- Mechanical engineer
- Mechatronic engineer

FURTHER STUDY
- Master of Engineering Management
- Master of Engineering Science (Electrical Engineering)
- Master of Science (Industrial Engineering)

RESEARCH
- Master of Philosophy
- Doctor of Philosophy

COURSE ESSENTIALS

LOCATION
Perth

RETAKE
Feb, Jul

Please refer to page 15 for additional course essentials information, such as RME and prerequisites.

COURSE STRUCTURE

Correct as at December 2016, but subject to change.

Year 1
- Engineering Foundation
- Year (see page 15)
- Foundations of Digital Design
- Engineering Mathematics
- Mechatronics
- Microcontroller Project
- Machine Dynamics
- Electrical Circuits
- Unix and C Programming

Year 2
- Linear Signals and Systems
- Mechatronics Modelling Project
- Engineering Management
- Engineering Graphics

Year 3
- Embedded Systems Engineering
- Mechatronics
- Automation Project Design of Mechanical Components
- Dynamic Modelling and Control
- Power Electronics
- Mechatronics Design Project
- Manufacturing for Mechatronics
- Law for Engineers
- Engineering Sustainable Development

Year 4
- Research Project 1
- Mechatronic Engineering Research Project 2
- Professional Engineering Practice

Optional units
- 2 optional units from list 1
- 2 optional units from list 2
- 2 optional units from list 1
- 1 Sustainable Energy Systems and Technologies
- Engineering Design Methodology
- Power Electronics and Drives
- Vibration
- Renewable Energy Systems
- Advanced Digital Design

Correct as at December 2017 and is subject to change at any time. This course may change after this publication is printed, and may not be offered in 2018. Please refer to courses.curtin.edu.au for the most up-to-date information.
Metallurgical engineers mostly work in converting raw metals into more useable forms, such as converting iron ore and coal into steel. They extract, refine and recycle metals to produce products that are stronger, more durable and more energy efficient.

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

You will receive a strong grounding in chemical and physical engineering, economic, environmental and sustainable principles, and the extraction of metals from ores. The course also includes a strong management component.

After your Engineering Foundation Year study for a second year in Perth before completing your third and final years in Kalgoorlie. Studying in Kalgoorlie will provide you with meaningful exposure to the mining industry. In your final year of study you will undertake a major research or design project.

**ADDITIONAL PROFESSIONAL RECOGNITION**

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

**YOUR FUTURE IN METALLURGICAL ENGINEERING**

**CAREER OPPORTUNITIES**

- Hydrometallurgist
- Metallurgist
- Metallurgical engineer
- Minerals engineer
- Process control specialist
- Process engineer
- Process mineralogy specialist
- Pyrometallurgy specialist

**RESEARCH**

- Master of Philosophy
- Doctor of Philosophy

**EMPLOYMENT INDUSTRIES**

- Banking and finance
- Consultancies
- Engineering
- Equipment design and sales
- Mining and mineral processing
- Research and development

**FURTHER STUDY**

**COURSEWORK**

- Master of Engineering Management
- Master of Engineering Science (Metallurgy)
- Master of Engineering Science (Mining)

**RESEARCH**

- Master of Philosophy
- Doctor of Philosophy

**LOCATION**

Perth then Kalgoorlie

**INTAKE**

Feb, Jul*

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**MINING ENGINEERING**

Mining engineers may supervise other engineers, surveyors, geologists, scientists and technicians working on a mine site. Working in metropolitan or regional locations around the world, mining engineers can have adventurous careers.

In this major you will study engineering as well as basic science subjects. As you progress, emphasis will be placed on mining science and technology, which involves the study of soil and rock mechanics, explosives and rock breakage, materials transport, mining methods, mine planning, project evaluation and the environment.

After your Engineering Foundation Year in Perth, you can go directly to Curtin WA School of Mines in Kalgoorlie, or study for a second year in Perth before completing your third and final years in Kalgoorlie. Studying in Kalgoorlie will provide you with meaningful exposure to the mining industry. In your final year of study you will undertake a major research or design project.

**ADDITIONAL PROFESSIONAL RECOGNITION**

The course is recognised by Mining Education Australia and the Australasian Institute of Mining and Metallurgy.

**PROFESSIONAL CERTIFICATION**

After a set period of practical experience in the industry, graduates can apply to the WA Department of Mines and Petroleum to sit for examinations that can qualify them for various statutory Certificates of Competency (First Class Mine Manager, Underground Supervisor, and Quarry Manager).

**YOUR FUTURE IN MINING ENGINEERING**

**CAREER OPPORTUNITIES**

- Management consultant
- Mine manager
- Mine planner and designer
- Mining company director
- Mining engineer
- Operations manager

**EMPLOYMENT INDUSTRIES**

- Government
- Mining and resources
- Research and development
- Risk analysis and investment

**FURTHER STUDY**

**COURSEWORK**

- Master of Engineering Management
- Master of Engineering Science (Metallurgy)
- Master of Engineering Science (Mining)

**RESEARCH**

- Master of Philosophy
- Doctor of Philosophy

**LOCATION**

Perth then Kalgoorlie

**INTAKE**

Feb, Jul*

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*July intake students are required to attend the Kalgoorlie Campus for their second year.

Please refer to page 15 for additional course essentials information, such as ATN and prerequisites.

Available as a double degree (see page 30).

**COURSE STRUCTURE**

Correct as at December 2016, but subject to change.

**Year 1**

- Engineering Foundation Year (see page 15)
- Mathematics and Statistics
- Mining and Metallurgy
- Geological Principles
- Thermofluids
- Mining Surveying and Geographic Information Systems
- OR
- Mechanics of Solids
- Metallurgical Processes and Materials Handling
- Process Phenomena
- Resource Geology
- Introduction to Geometallurgy Theory and Practice

**Year 3**

- Metallurgical Chemistry
- Metallurgical Thermodynamics
- Mineral Processing – Communion and Separation
- Process Control
- Metallurgical Laboratory Techniques
- Hydrometallurgy
- Mine Management
- Mineral Processing – Flotation and Dewatering
- Pyrometallurgy
- OR
- Socio-Environmental Aspects of Mining
- Minerals Engineering
- Process Engineering
- Methods of Metallurgical Research
- Metallurgical Process Design
- Metallurgical Engineering Research Project

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Petroleum engineers figure out the best way to extract oil and gas from deposits below the Earth’s surface. They work closely with other professionals to understand the geological and geophysical characteristics of particular reservoirs, before designing, testing and implementing the most effective and profitable extraction method for that site.

Currently, reservoirs yield only about 30 per cent of their oil, so petroleum engineers are needed to develop methods to increase oil and gas production. They are also needed to help develop newly discovered and future offshore gas fields.

Curtin is located in the hub of the oil and gas industry in Australia. We are building a strong reputation for excellence in the sector with our researchers and academics collaborating closely with industry to develop solutions that enhance resource performance, technology and environmental management.

In this major you will learn how to evaluate, drill and then develop and mine oil and gas reserves. You will examine issues involving fluid flow through reservoirs, basic geology, the role of engineering in oil and gas production, chemical engineering, thermodynamics, hydrocarbon phase behaviour, drilling and well engineering.

You will also develop an understanding of global economic trends and corporate profit margins through the study of economics, risk and project management. You will have the opportunity for practical study in fluid and reservoir rock laboratories and geodynamics laboratory work, and you will gain industry exposure through field trips to service company offices and drilling sites.

In your final year of study you will undertake a major research or design project.

"Engineering is all about solving problems, and petroleum engineering in particular is an area where projects require innovation. A degree in engineering can lead to many different career options and experiences, and gives you the chance to work on important projects that make a real difference. Curtin’s petroleum engineering degree provides lots of practical experiences, covers a wide range of subjects and teaches you to use technology relevant to your field."

Emily James
Bachelor of Engineering (Honours)
(Petroleum Engineering) Student

INDUSTRY SNAPSHOT: OIL AND GAS

Hydrocarbon resources play an important role in sustaining our current living standards. The global oil and gas exploration and production industry produces hydrocarbons both offshore and on land. This is predicted to continue for the next century, with our ever-increasing population leading to rising energy demands.

In 2020, Perth is expected to become the centre of world exports of LNG. Accordingly, Western Australia has the largest concentration of global oil and gas companies in Australia, such as Chevron, GE Oil & Gas and Shell.

The sector also works closely with universities such as Curtin, where a lot of research is done on areas such as improving extraction methods and optimising processes to increase profits.

Petroleum reservoirs are located deep underneath the surface of the Earth. With many land-based reservoirs already developed, Western Australia has turned its eye to reservoirs in offshore locations.

Recent investment in a range of megascalar offshore subsea developments in the North West of Australia will play a key role in the future of petroleum engineers and subsea engineers, with the latter working as specialists in the challenges of underwater drilling and extraction.

YOUR FUTURE IN PETROLEUM ENGINEERING

CAREER OPPORTUNITIES

• Drilling engineer
• Petroleum engineer
• Production engineer
• Reservoir engineer
• Subsurface or completions engineer

EMPLOYMENT INDUSTRIES

• Oil and gas
• Research and development

FURTHER STUDY

COURSEWORK

• Graduate Diploma in Corrosion Engineering
• Master of Chemical Engineering
• Master of Engineering Management
• Master of Petroleum Engineering
• Master of Engineering Science (Petroleum Engineering)
• Master of Subsea Engineering
• Master of Science (Global Subsea Engineering)

RESEARCH

• Master of Philosophy
• Doctor of Philosophy

YOUR FUTURE IN PETROLEUM ENGINEERING

POTENTIAL EMPLOYERS

OIL AND GAS COMPANIES

• BP
• BHP Billiton Petroleum
• Shell
• Chevron
• Exxon Mobil
• Woodside
• Santos

SERVICE COMPANIES

• Halliburton
• Schlumberger
• Baker Hughes
• Weatherford

COURSE ESSENTIALS

LOCATION

Perth, Malaysia

INTAKE

Feb, Jul

Please refer to page 15 for additional course essentials information, such as ATAR and prerequisites.

COURSE STRUCTURE

Correct as at December 2016, but subject to change.

Year 1

Engineering Foundation Year (see page 15)

Year 2

Process Principles
Fluid Mechanics
Engineering Sustainable Development
Introduction to Petroleum Engineering
Geological Principles
Chemical Engineering Thermodynamics
Principles and Processes in Chemistry
Mechanics of Solids
Petrophysics and Reservoir Properties Laboratory

Year 3

Reservoir Engineering Fundamentals
Hydrocarbon Phase Behaviour
Formation Evaluation
Petroleum Geology and Geophysics
Process Engineering and Analysis
Reservoir Engineering Practices
Petroleum Production Technology
Drilling Engineering and Fluids Laboratory

Year 4

Petroleum Economics, Risk and Project Management
Numerical Reservoir Simulation
Advanced Drilling Engineering
Petroleum Engineering Research Project 1
Crude Oil Processing
Process Instrumentation and Control
Petroleum Engineering Research Project 2
Petroleum Geomechanics

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Studying a double degree is a smart choice if you are interested in more than one area. With two separate qualifications and a more diverse set of skills and knowledge, you could expand your options upon graduation and go on to enjoy a particularly interesting career. You’ll study units from both courses, but the condensed program structure means you will complete two degrees faster than if you studied them separately.

"Doing a double degree in chemistry and chemical engineering has helped in my vacation work placement. The chemistry side allows me to understand how reactions occur on a molecular level and gives me the analytical skills needed to obtain properties of the materials, and the engineering process then looks at the macroscopic scale and the safety and environment issues involved. So overall, both courses complement each other as I gain an overall picture of production processes."

Natalie Elridge
Bachelor of Engineering (Honours) (Chemical Engineering) and Bachelor of Science (Chemistry) student

### DOUBLE DEGREES

<table>
<thead>
<tr>
<th>Bachelor of Engineering (Majors)</th>
<th>PLUS</th>
<th>Bachelor of Commerce (Majors)</th>
<th>OR</th>
<th>Bachelor of Science (Majors)</th>
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<tbody>
<tr>
<td>Chemical Engineering</td>
<td>Accounting Economics</td>
<td>Finance Management</td>
<td>Excessive Metallurgy</td>
<td>Chemistry</td>
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<td>Civil and Construction Engineering</td>
<td>Accounting Economics</td>
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<td>Computer Systems Engineering</td>
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<td>Electronic and Communication Engineering</td>
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<td>Accounting Economics</td>
<td>Finance Management</td>
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### COURSE ESSENTIALS

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<tr>
<th>COURSE TITLE</th>
<th>INDICATIVE ATAR 2018</th>
<th>CRICOS CODE</th>
<th>LOCATION</th>
<th>DURATION</th>
<th>INTAKE</th>
<th>STAT</th>
<th>STUDY MODE</th>
<th>PREREQUISITES</th>
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<tr>
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<td>Chemical Engineering and Chemistry</td>
<td>80</td>
<td>050336F</td>
<td>Perth</td>
<td>5 years full-time</td>
<td>Feb, Jul*</td>
<td>Not accepted</td>
<td>Full-time, part-time*</td>
<td>Mathematics: Methods ATAR, and at least one of the following courses: Physics ATAR, Chemistry ATAR or Engineering Studies ATAR, or equivalent</td>
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<tr>
<td>Chemical Engineering and Extractive Metallurgy</td>
<td>80</td>
<td>044775C</td>
<td>Perth</td>
<td>5 years full-time</td>
<td>Feb, Jul*</td>
<td>Not accepted</td>
<td>Full-time, part-time*</td>
<td>Mathematics: Methods ATAR, and at least one of the following courses: Physics ATAR, Chemistry ATAR or Engineering Studies ATAR, or equivalent</td>
<td></td>
</tr>
<tr>
<td>Civil and Construction Engineering and Mining</td>
<td>80</td>
<td>050568A</td>
<td>Perth</td>
<td>5 years full-time</td>
<td>Feb, Jul*</td>
<td>Not accepted</td>
<td>Full-time, part-time*</td>
<td>Mathematics: Methods ATAR, and at least one of the following courses: Physics ATAR, Chemistry ATAR or Engineering Studies ATAR, or equivalent</td>
<td></td>
</tr>
<tr>
<td>Computer Systems Engineering and Computer Science</td>
<td>80</td>
<td>044775D</td>
<td>Perth</td>
<td>5 years full-time</td>
<td>Feb, Jul*</td>
<td>Not accepted</td>
<td>Full-time, part-time*</td>
<td>Mathematics: Methods ATAR, and at least one of the following courses: Physics ATAR, Chemistry ATAR or Engineering Studies ATAR, or equivalent</td>
<td></td>
</tr>
<tr>
<td>Electronic Communication Engineering and Computer Science</td>
<td>80</td>
<td>044775F</td>
<td>Perth</td>
<td>5 years full-time</td>
<td>Feb, Jul*</td>
<td>Not accepted</td>
<td>Full-time, part-time*</td>
<td>Mathematics: Methods ATAR, and at least one of the following courses: Physics ATAR, Chemistry ATAR or Engineering Studies ATAR, or equivalent</td>
<td></td>
</tr>
<tr>
<td>Electronic Communication Engineering and Physics</td>
<td>80</td>
<td>044800F</td>
<td>Perth</td>
<td>5 years full-time</td>
<td>Feb</td>
<td>Not accepted</td>
<td>Full-time, part-time*</td>
<td>Mathematics: Methods ATAR, and Physics ATAR, or equivalent</td>
<td></td>
</tr>
<tr>
<td>Bachelor of Engineering / Bachelor of Commerce</td>
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</tr>
<tr>
<td>Engineering (parts in Chemical, Civil and Construction, Mechanical, Metallurgical or Mining and Commerce (both majors in Accounting, Economics, Finance or Management))</td>
<td>80</td>
<td>091673J</td>
<td>Perth</td>
<td>5 years full-time</td>
<td>Feb, Jul**</td>
<td>Not accepted</td>
<td>Full-time, part-time*</td>
<td>Mathematics: Methods ATAR, and at least one of the following courses: Physics ATAR, Chemistry ATAR or Engineering Studies ATAR, or equivalent</td>
<td></td>
</tr>
</tbody>
</table>

*International students studying in Australia as a student visa must study full-time.
*Due to unit availability, beginning in July may increase the duration of this course. July intake is not available to international students studying in Australia as a student visa, unless they have sufficient credit for recognised learning.
*Bachelor of Engineering / Bachelor of Commerce students in Chemical, Civil and Construction, Mechanical, Metallurgical or Mining and Commerce (both majors in Accounting, Economics, Finance or Management) may complete part of their degree in Kalgoorlie.

# July intake is available for all majors except Civil and Construction Engineering.
ENTRY REQUIREMENTS AND PATHWAYS: DOMESTIC STUDENTS

AM I A DOMESTIC STUDENT?
You are a domestic student if you are:
• an Australian citizen or Australian dual citizen
• a permanent resident of Australia
• a holder of an Australian permanent humanitarian visa
• a New Zealand citizen.

ENTRY REQUIREMENTS
To be eligible to study a bachelor degree at Curtin, you normally need to have achieved the following:
• graduated from high school and met the requirements of the Western Australian Certificate of Education (WACE) or equivalent interstate high school certificate
• obtained an ATAR equal to or above the cut-off score of the course you wish to study
• achieved a scaled mark of at least 50 in each prerequisite for your chosen course.

Your year 12 WACE results are valid indefinitely. Scores dating back to 1992 can be converted to the current ranking via the TISC ATAR calculator: tisc.edu.au/calculator/atar-calculator.tisc

Entry can be competitive and you may need to achieve scores higher than the minimum indicative ATAR requirements for admission to some courses. You can apply to Curtin before you sit for your WACE exams.

IF YOU DON’T MEET THE ENTRY REQUIREMENTS
There are a number of different ways to gain entry into a Curtin course.

If you don’t meet the entry requirements outlined above, consider one of the entry pathways listed here, or visit curtin.edu/ug-entry to explore other pathways.

ENTRY PATHWAYS
MULTIDISCIPLINARY SCIENCE
The Bachelor of Science (Multidisciplinary Science) can be an alternative entry pathway into Curtin’s engineering courses. By selecting appropriate units in your first year, the multidisciplinary science major can be used as a stepping-stone to catch up on course prerequisites and to demonstrate your capacity to complete the engineering program.

To study the multidisciplinary science program, you must meet the necessary entry requirements.
courses.curtin.edu.au

ENABLING COURSE IN SCIENCE, ENGINEERING AND HEALTH
The Enabling Course in Science, Engineering and Health runs for one year and starts in February, although in some cases you may start in July. It’s designed for students who don’t meet the minimum university entrance requirements, but who wish to undertake foundation studies that can lead to a degree course at Curtin with specific subject prerequisites.

Successfully completing this enabling program will guarantee you a place in a science course in the Faculty of Science and Engineering or the Bachelor of Science (Health Sciences) offered in the Faculty of Health Sciences.

A number of places are also available on a competitive basis in engineering, medical radiation science, occupational therapy, pharmacy, physiotherapy, and speech pathology for high-achieving students.

This program is free for domestic students.
curtin.edu.au/scienchealth-enabling

HOW TO APPLY
HOW TO APPLY:
FIRST SEMESTER INTAKE
If you have never studied at Curtin before, you will apply through the Tertiary Institutions Service Centre (TISC).
tisc.edu.au

If you have studied at Curtin before or are wishing to switch courses, you will need to apply directly to Curtin.

http://howtoapply.curtin.edu.au/undergraduate

SECOND SEMESTER INTAKE
To apply for second semester, whether as a new student or a returning one, you will need to apply directly to Curtin.

http://howtoapply.curtin.edu.au/undergraduate

ENTRY PATHWAYS
If you wish to enter Curtin through one of our pathway options, please contact one of our Future Students Advisors to find out how to apply.
futurestudents.curtin.edu.au

HOW TO APPLY: DOMESTIC STUDENTS

CREDIT FOR PREVIOUS LEARNING OR EXPERIENCE
You may be able to complete your degree in a shorter amount of time at Curtin. We grant credit for units within your course based on your previous study or work experience. It is called credit for recognised learning.
curtin.edu/ug-cr

TAKING A GAP YEAR
Once you have been offered a place at Curtin, you can delay starting your course for up to a year. This gives you the opportunity to take a break after high school, travel or get some work experience in your field of interest.
curtin.edu/defer

SCHOLARSHIPS
A scholarship at Curtin can offer you great opportunities. The financial, academic and career support you could receive will help you graduate with the skills and networks to make tomorrow better. A scholarship is a sum of money or other financial assistance given to students to help support their study.

Scholarships are not loans; the money is given to you provided you fulfilled key requirements such as academic performance, work experience or volunteer commitments.

Scholarships are more than just financial support – they can enhance your portfolio of achievements.

WHO IS ELIGIBLE FOR A SCHOLARSHIP?
We offer a range of scholarships for students who are:
• from low-income backgrounds
• from Indigenous backgrounds
• high-achievers
• from regional areas
• studying specific courses.

Each scholarship has different eligibility criteria, application procedures and closing dates, so check these early in the process.

Visit our scholarships website for up-to-date information and eligibility criteria for available scholarships, and tips for writing a good scholarship application.

SCHOLARSHIP EMAIL ALERT
Get an email alert whenever a scholarship that matches your criteria is open for applications.
scholarships.curtin.edu.au
ENTRY REQUIREMENTS AND PATHWAYS: INTERNATIONAL STUDENTS

ENTRY PATHWAYS
MULTIDISCIPLINARY SCIENCE
The Bachelor of Science (Multidisciplinary Science) can be an alternative entry pathway into Curtin’s engineering courses. By selecting appropriate units in your first year, the multidisciplinary science major can be used as a stepping stone to catch up on course prerequisites and to demonstrate your capacity to complete the engineering program. If you are successful in switching into the engineering program, you will need to ensure you update your visa details with immigration.

To study the multidisciplinary science program, you must meet the necessary entry requirements.
international.curtin.edu.au/courses

CURTIN ENGLISH
If you don’t meet the English language entry score required for your course, consider taking a study program at Curtin English. Curtin English is located at the Curtin University campus in Perth and gives you access to university facilities and support services. Your Curtin English course can be packaged together with your chosen undergraduate program to streamline your enrolment and visa application process.
english.curtin.edu.au

CURTIN COLLEGE
Located on Curtin’s main campus in Perth, Curtin College offers various courses, ranging from Certificate IV to Diploma level, that can help you gain eligibility to apply to Curtin University.
Tel: +61 8 9266 4888 curtincollege.edu.au

HOW TO APPLY
You can apply to Curtin yourself or through a registered Curtin agent.

To apply for a course at Curtin University, you will need to provide certified copies of your previous qualifications and English proficiency documents. Additional documentation may be required for particular courses or personal circumstances. See international.curtin.edu.au/apply/application-documents.

STEP 1: APPLY FOR A PLACE
This step is only relevant if you are applying to Curtin yourself. If you are using the services of a Curtin registered agent, you should lodge your application with the agent and contact them if you have any questions throughout the admission process.

Option 1: Online
Complete the online application form at curtin.edu/international-application. Please attach certified copies of the required application documents.

If your documents are not in an electronic format or cannot be scanned in, submit your application via email, mail or fax (see option 2).

Option 2: Email, mail or fax
Download and complete the International Application for Admission form (see international.curtin.edu.au/apply/how-to) and email, mail or fax it to Curtin, together with certified copies of the required application documents. The email address, postal address and fax number are provided at the end of the application form.

STEP 2: RECEIVE YOUR OFFER
Assessing your application will take approximately two weeks. Some applications may take longer to assess, dependent on course specifics. You will be notified if further documents are required and your assessment may be delayed until we receive these documents.

STEP 3: ACCEPT YOUR OFFER
When you receive your offer package, carefully review your Letter of Offer and make sure your name, course title and semester details are correct.

Once you meet all the conditions on your Letter of Offer, submit the Acceptance of Offer form along with your deposit for tuition fees, the Overseas Student Health Cover fee and a photocopy of your passport details page.

Students under 18 years of age If you will be under 18 years old when you start your studies at Curtin, you will need to nominate an approved carer, who will have responsibility for your welfare in Australia until you turn 18, after which you are considered an adult by Australian law. You will also need to complete a local carer form and other documentation required by the relevant Australian authorities when you apply for your Australian student visa. Visit immi.gov.au for more details.

Note: The documentation required for students aged under 18 can take up to six weeks to process. If the correct documentation is not provided, you will not be able to enrol at Curtin.

STEP 4: APPLY FOR A STUDENT VISA
You will receive an email confirming your enrolment, called an electronic Confirmation of Enrolment (eCoE). You should apply for a student visa once you receive your eCoE.

SCHOLARSHIPS
A scholarship can offer you financial, academic and career support, giving you more opportunities to gain new skills and expand your horizons. Scholarships are not loans – the money is given to you provided you fulfil key requirements such as academic performance, work experience or volunteer commitments. They are offered through a competitive process.

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

GOVERNMENT SCHOLARSHIPS
The Australian Government may also provide scholarships to international students intending to study in Australia, including the Australia Awards Scholarships and the Endeavour Scholarships.
international.curtin.edu.au/scholarships

SCHOLARSHIP EMAIL ALERT
Get an email alert whenever a scholarship that matches your criteria is open for applications.
scholarships.curtin.edu.au
FEE INFORMATION: INTERNATIONAL STUDENTS

The following notes on fees should be read in conjunction with the course fees table on page 38. This information is only for international students. Domestic students seeking fee information should visit fees.curtin.edu.au.

FEE INFORMATION

The tuition fees (shown in Australian dollars) are based on a normal full-time workload of 100 credits per semester (200 credits per year) unless otherwise stated. If you study more than 100 credits per semester, you will have a higher annual tuition fee. The tuition fee is calculated and charged on a semester basis.

Individual unit (subject) fees are listed at fees.curtin.edu.au/course_fees.cfm. Note: all listed fees are subject to annual increases.

OFFER LETTER (100 CREDIT) PUBLISHED FEE

As an international student, you need to pay the fees for your first study period (one semester or 100 credits) before arriving in Australia in order to receive a confirmation of enrolment. The fee quoted on the international offer letter is only an approximation and may differ slightly in accordance with the units you choose to study upon your enrolment.

INDICATIVE ESSENTIAL INCIDENTAL FEES

Some courses require compulsory additional payment for retunable materials and course-related fees, known as essential incidental fees. Some individual units may have optional fees for course materials and other course-related items.

The indicative essential incidental fees listed in this guide are correct for 2017 and are subject to change.

REFUND AGREEMENT

The categories under which the University Fees Centre will assess an application for refund are laid out in the University’s International Student Refund Agreement. The agreement is supplied to you with your Letter of Offer and can also be accessed online at fees.curtin.edu.au/refunds.cfm, where you can also view the most up-to-date information as the policy is subject to change.

UNDERGRADUATE CUT-OFF SCORES KEY

| Score conversion for GCE A-Level |
|-------------------------------|----------------|
| A grade                       | 5 points       |
| B grade                       | 4 points       |
| C grade                       | 3 points       |
| D grade                       | 2 points       |
| E grade                       | 1 point        |

| Subject grades conversion for STPM |
|-------------------------------|----------------|
| A                             | 5 points       |
| A- or B+                      | 4 points       |
| B                             | 3 points       |
| B- or C+                      | 2 points       |
| C                             | 1 point        |

Please note: Scores for individual prerequisites may be taken into consideration for assessment purposes.
## COURSE FEES AND PREREQUISITES: INTERNATIONAL STUDENTS

<table>
<thead>
<tr>
<th>COURSE</th>
<th>CRICOS CODE</th>
<th>DURATION (FULL-TIME)</th>
<th>LOCATION</th>
<th>INTAKES</th>
<th>PREREQUISITES</th>
<th>INDICATIVE CUT OFF SCORES</th>
<th>OFFER LETTER (100 CREDIT) PUBLISHED FEE (A$)</th>
<th>INDICATIVE 1 YEAR FEE (A$)</th>
<th>TOTAL INDICATIVE COURSE FEE (A$)</th>
<th>INDICATIVE ESSENTIAL INCIDENTAL 2017 FEE (A$)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Engineering (honours) with majors in Chemical, Civil and Construction, Computer Systems, Electrical Power, Electronic and Communication, Mechanical, Mechatronic-Metallurgical, Mining, and Petroleum</td>
<td>072467B</td>
<td>4 years</td>
<td>Perth, Kalgoorlie*</td>
<td>Feb, Jul</td>
<td>Mathematics (including calculus) and either chemistry, physics or engineering studies. Further mathematics is desirable</td>
<td>8  18  28  70  80  59  76%  8  19,000  36,200  162,600  500</td>
<td></td>
<td></td>
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<tr>
<td></td>
<td>N/A</td>
<td></td>
<td>Malaysia*</td>
<td>Feb, Jul</td>
<td>Mathematics (including calculus) and either chemistry, physics or engineering studies. Further mathematics is desirable</td>
<td>8  18  28  70  80  59  76%  8  19,000  36,200  162,600  500</td>
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<tr>
<td></td>
<td>N/A</td>
<td></td>
<td>Sri Lanka*</td>
<td>Feb</td>
<td>Mathematics (including calculus) and either chemistry, physics or engineering studies. Further mathematics is desirable</td>
<td>8  18  28  70  80  59  76%  8  19,000  36,200  162,600  500</td>
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<tr>
<td><strong>DOUBLE DEGREES</strong></td>
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<tr>
<td>Chemical Engineering and Chemistry</td>
<td>050336F</td>
<td>5 years</td>
<td>Perth</td>
<td>Feb, Jul</td>
<td>Mathematics (including calculus), chemistry and either physics or engineering studies. Further mathematics is desirable</td>
<td>8  18  28  70  80  59  76%  8  19,000  36,200  197,700  50</td>
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</tr>
<tr>
<td>Chemical Engineering and Extractive Metallurgy</td>
<td>043753C</td>
<td>5 years</td>
<td>Perth, Kalgoorlie,</td>
<td>Feb, Jul</td>
<td>Mathematics (including calculus) and either chemistry, physics or engineering studies. Further mathematics is desirable</td>
<td>8  18  28  70  80  59  76%  8  19,000  36,200  203,200  500</td>
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<tr>
<td>Civil and Construction Engineering and Mining</td>
<td>050568A</td>
<td>5 years</td>
<td>Perth</td>
<td>Feb, Jul</td>
<td>Mathematics (including calculus) and either chemistry, physics or engineering studies. Further mathematics is desirable</td>
<td>8  18  28  70  80  59  76%  8  19,000  36,200  204,400  25</td>
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<tr>
<td>Computer Systems Engineering and Computer Science</td>
<td>043754B</td>
<td>5 years</td>
<td>Perth</td>
<td>Feb, Jul</td>
<td>Mathematics (including calculus) and either chemistry, physics or engineering studies. Further mathematics is desirable</td>
<td>8  18  28  70  80  59  76%  8  19,000  36,200  199,500  50</td>
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<tr>
<td>Electronic and Communication Engineering and Computer Science</td>
<td>041777M</td>
<td>5 years</td>
<td>Perth</td>
<td>Feb, Jul</td>
<td>Mathematics (including calculus) and either chemistry, physics or engineering studies. Further mathematics is desirable</td>
<td>8  18  28  70  80  59  76%  8  19,000  36,200  199,500  50</td>
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<tr>
<td>Electronic and Communication Engineering and Physics</td>
<td>041800F</td>
<td>5 years</td>
<td>Perth</td>
<td>Feb</td>
<td>Mathematics (including calculus) and physics. Chemistry, engineering studies or further mathematics is desirable</td>
<td>8  18  28  70  80  59  76%  8  19,000  36,200  201,000  50</td>
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<tr>
<td>Engineering and Commerce (with majors in Chemical, Civil and Construction, Mechanical, Metallurgical, Mining, Accounting, Economics, Finance, and Management)</td>
<td>066675M</td>
<td>5.5 years</td>
<td>Perth*</td>
<td>Feb, Jul</td>
<td>Mathematics (including calculus) and either chemistry, physics or engineering studies. Further mathematics is desirable</td>
<td>8  18  28  70  80  59  76%  8  19,000  36,200  217,000  675</td>
<td></td>
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</tr>
</tbody>
</table>

*This course may not be offered at all locations every year. Course majors and streams may vary across campuses. Refer to individual majors for more information.

**For Malaysia, fees are correct for 2017 and are subject to change for 2018. Visit curtin.edu.my for the most up-to-date information. Incidental fees depend on your chosen course and units.

*Students studying Mining Engineering, Metallurgical Engineering, or the Chemical Engineering and Extractive Metallurgy double degree will complete part of their degree in Kalgoorlie.

**July intake is not available to international students unless they have sufficient credit for recognised learning.

*July intake is available for all majors except Civil and Construction Engineering.

Information in this publication is correct as of March 2017 and is subject to change at any time. This course may change after this publication is printed, and may not be offered in 2018. Please refer to courses.curtin.edu.au for the most up-to-date information.
Your journey at Curtin doesn’t have to end after you’ve finished your studies. Opportunities to connect with your fellow graduates, pursue further study or gain career support mean there are a variety of ways for you to remain a member of the Curtin community.

Pursue Further Study
After you’ve finished your undergraduate degree, you can advance your career by undertaking further study.
You can find suggestions for further study in the preceding course pages of this guide, or you can visit courses.curtin.edu.au to search all our postgraduate courses on offer.

Get Career Support
The Curtin Careers and Employment Centre offers advice, programs, services and tools to support you with career development and job applications.

CareerHub
CareerHub is our comprehensive job search engine displaying part-time and full-time vacancies, tailored career resources and access to a suite of on-campus discipline specific workshops and employer events. careehrhub.curtin.edu.au

Global Careers
Global Careers connects you with employers around the world. You can view hundreds of job opportunities advertised by some of the world’s largest and most prestigious employers, and can search for jobs based on your course of study, citizenship and individual working rights. globalcareers.curtin.edu.au

Connect with Alumni
Over 200,000 individuals make up Curtin’s community of alumni (former students and graduates), with many being influencers, creators, innovators and game changers who are striving to make tomorrow better. The Curtin Alumni Network can provide you with lifelong access to a range of benefits and opportunities to support your professional development and help you maintain a connection with Curtin. alumni.curtin.edu.au

About Perth
Perth is consistently ranked as one of the world’s most liveable cities. As the capital of Western Australia, Perth is safe, prosperous and multicultural – an ideal destination for students and tourists alike.

The city is set against the stunning backdrop of the Indian Ocean and combines natural beauty with period architecture. Browse for fashion along the Murray Street mall, learn to surf at the iconic Scarborough Beach or enjoy a cappuccino in historic Fremantle.

A Convenient Time Zone
As Perth is located in the same time zone as cities like Hong Kong, Singapore, Beijing and Kuala Lumpur, it’s easy to stay in touch if you have friends and family living there.

Food and Entertainment
Perth offers a huge range of dining and entertainment options that reflect the cultural diversity of the city. In Northbridge, the city’s cultural precinct, the restaurant and small bar scene is growing rapidly. Beyond Perth there are areas of outstanding beauty, where you can experience diverse wildlife and natural wonders.

Try one of the hiking or cycling trails in the ancient Karri forests, go canoeing, camping or caving, and explore the spectacular regional marine parks.

Work While You Study
If you are an international student, some student visas will allow you to work up to 40 hours per fortnight during semester and full-time during holiday periods.

For more information on moving to Perth to study, see international.curtin.edu.au.

Our 30,194 science and engineering alumni live in more than 114 countries around the world.