2013
DEGREE AND
DIPLOMA
ENGINEERING

WEB EDITION
UPDATED 05 JULY 2012

DESIGN SOLUTIONS
ADVANCE INNOVATION
ENGINEER
POSSIBILITIES
TURN DISCOVERIES INTO PRACTICAL APPLICATIONS

RMIT is for students who are serious about finding an engineering speciality and getting stuck into it right from the start.

RMIT strikes the perfect balance between specialised degrees and transferable skills. Straight away you’ll start figuring out what sets your discipline apart from other types of engineering. By the time you graduate, you’ll already have four years’ experience in your specialisation.

At the same time you’ll share major subjects with other students in related degrees, so you’ll find out how your knowledge connects to different engineering disciplines. You’ll work with peers as part of multidisciplinary teams giving you insight into the big picture.

RMIT’s project-based learning approach gets you into teams and into the lab right from first year. Not just because that’s the way engineers work, but also because projects are the best way to harness your creativity and inventiveness.

Best of all, RMIT encourages you to see engineering on a global scale. Through community-building projects for Engineers Without Borders, or industry placements in top Asian, European and American companies, your horizons will expand, and you’ll understand how engineers can help create a more sustainable world.

HOT NEWS

Engineers Without Borders (EWB)

EWB was founded in 2001 by RMIT graduate Daniel Almagor, with the aim of improving life in developing communities through sanitation, energy, waste disposal systems and infrastructure projects. During their studies engineering students have the opportunity to take part in these incredible initiatives through EWB.

STUDENT PROFILE

‘I love travelling and thoroughly enjoy learning new things. In the second year of my aerospace engineering degree I travelled to China to study at the Nanjing University of Aeronautics and Astronautics (NUAA). It has always been a dream of mine to visit China, and in doing so I had the opportunity to work and build connections with people from a range of backgrounds who share the same interests.

‘RMIT is considered one of the best places to study aerospace engineering. It has many connections with relevant companies and different institutes worldwide. These networks give you opportunities to study abroad and to find interesting work after you graduate. I’m now looking forward to doing my overseas internship in the United States.’

Nita Wiroonsup (pictured)
Bachelor of Engineering (Aerospace Engineering)
Acknowledgement of country

The Wurundjeri people of the Kulin Nation are the traditional custodians of the land on which this organisation stands. We pay our respects to owners and Elders, both past and present.

interact with RMIT

Stay connected with everything that’s going on at RMIT through web, mobile and social networking. Visit www.rmit.edu.au/interact
During this study tour, students investigate what a sustainable city of the future will look like. Can we plan today to develop the models that we will need to maintain the expectations of current lifestyles as we adapt to climate change with a carbon neutral urban infrastructure?

The elective study tour course is aimed at addressing the major issues of climate change and meeting sustainability criteria. While based in the School of Civil, Environmental and Chemical Engineering, it provides a foundation for multidisciplinary involvement from all sectors of RMIT.

Two international cities, Melbourne and Paris, are chosen as reference points to study and research world-wide issues. The two cities have developed differently—in less than two centuries, Melbourne has become a bright star of the ‘new’ world with modern infrastructure spread out in one of the largest and sparsest urban networks in the world. In contrast Paris has evolved over many centuries while still retaining a dense urban centre as a vibrant world focus.

Learning opportunities exist for students at RMIT in Melbourne and at Ecole Speciale des Travaux Publics (ESTP) in Paris to compare social and technical attributes of the two cities.

The challenges ahead for our cities of the future mean that future generations must be skilled to address issues such as:

- liveability and sustainability
- quality of life
- climate change
- future economies based on carbon neutrality.

These are not just technological skills but skills based on social issues and adaptability to climate change and an understanding of the social capital of a successful city.

Students select a particular topic of interest relating to sustainability which they will study in detail as their project for the course.
"In 2009 I was awarded an RMIT Engineers Without Borders scholarship, which allowed me to undertake my vacation work placement with Habitat for Humanity in Vietnam. It was a fantastic cross-cultural experience and gave me a passion for water and sanitation."

Sarah Herkess  
Bachelor of Engineering (Environmental Engineering)
WHAT WILL AN INTERNATIONAL EXPERIENCE DO FOR YOU?

OPEN YOUR MIND TO GLOBAL OPPORTUNITIES AND BUILD YOUR NETWORKS FOR THE FUTURE

At RMIT there are so many ways to enrich your studies:

» semester exchanges to over 120 partner institutions around the world
» group study tours of up to one month in Europe, Asia and the Americas
» international work placements.

International recognition
With many programs being recognised internationally, RMIT graduates are employed in more than 100 countries around the world.

Recognition can include:

» full accreditation
» membership of overseas professional associations
» membership of Australian associations that have membership arrangements with overseas bodies.

RMIT INTERNATIONAL INDUSTRY EXPERIENCE AND RESEARCH PROGRAM (RIIERP)

RIIERP offers degree students the opportunity to undertake a paid internship with companies such as Rolls-Royce, BMW, IBM, Nestlé, Airbus, Boeing, CSIRO, Siemens, Bosch and more, in Europe, Asia and the USA!

Where will your dream internship take you?

www.rmit.edu.au/RIIERP

STUDY EXCHANGE

Always dreamt of exploring the bright lights of New York, the historic architecture of Vienna or the natural wonders of South America? There’s no better way to do this than by studying a semester or two abroad.

Did you know RMIT is ranked 5th in Australia for the number of students who undertake international experiences?

www.rmit.edu.au/globalpassport/educationabroad
SCHOLARSHIPS AT RMIT:
A WORLD OF POSSIBILITIES

Commencing and current students are strongly encouraged to apply for an RMIT scholarship.

Each year RMIT awards millions of dollars in scholarships to thousands of RMIT students across all TAFE, university and postgraduate program areas.

RMIT scholarships recognise academic achievement, leadership and community skills. RMIT also offers Equity and Aboriginal and Torres Strait Islander scholarships to assist students from a range of backgrounds to achieve their study ambitions.

Non-program specific scholarships include:
- Equity scholarships
- Scholarships for Aboriginal and Torres Strait Islander students
- Scholarships for academic achievement
- Leadership scholarships
- Research scholarships

Scholarships available for engineering students include:
- Advanced Manufacturing CRC Student Prize
- BMD Group Scholarship
- Bayside Group Indigenous Scholarship
- Boeing Achievement Awards (TAFE)
- Boeing Scholarship
- Dyne Industries Scholarship
- EnerNOC Scholarship
- Invergowrie Foundation Scholarships for Women
- John Storey Junior Scholarship in Mechanical Engineering
- QANTAS Summer School
- SEW-EURODRIVE Scholarship
- School of Aerospace Mechanical and Manufacturing Engineering Women in Engineering Scholarship
- School of Electrical and Computer Engineering Smart Services CRC Summer Research Scholarships
- School of Electrical and Computer Engineering Summer Internship
- School of Electrical and Computer Engineering Undergraduate Academic Merit Entry Scholarship

Further information on these and many more scholarships is available on the website: www.rmit.edu.au/scholarships
Engineering related

ASSOCIATE DEGREES

An associate degree is a two-year qualification with the option to fast-track into further study. Students benefit from small class sizes, work-integrated learning and good employment outcomes in a wide range of industries.

Associate degrees can be undertaken after Year 12 or following a certificate III or IV. Graduates with a GPA of 2.0 or higher are guaranteed a place in a relevant RMIT bachelor degree.

Pathways

ASSOCIATE DEGREE » BACHELOR DEGREE

Associate Degree in Aviation (Professional Pilots)
» Bachelor of Applied Science (Aviation)

Associate Degree in Engineering Technology (Civil)
» Bachelor of Engineering (Civil and Infrastructure)

Associate Degree in Engineering Technology (Electrical/Electronics)
» Bachelor of Engineering (Electrical and Electronic Engineering)
» Bachelor of Engineering (Electrical Engineering)
» Bachelor of Engineering (Electronic and Communication Engineering)

Associate Degree in Engineering Technology (Mechanical)
» Bachelor of Engineering (Aerospace Engineering)
» Bachelor of Engineering (Automotive Engineering)
» Bachelor of Engineering (Mechanical Engineering)

Associate Degree in Engineering Technology (Network)
» Bachelor of Engineering (Computer and Network Engineering)

STUDENT PROFILE

"I wanted to study engineering because I like that it deals with real-life problems. I’ve always loved machines, and after just a few weeks in the program I’ve gained a greater understanding of how they function.

'The program has also given me the knowledge needed to start my career as an engineer. We get lots of hands-on experience with lab sessions and work with real-life scenarios in lectures and tutorials. I’m also learning to be thorough and precise, traits that I think are essential for an engineer.

‘In the future, I plan on studying a Bachelor of Engineering (Mechanical Engineering). I would like to do some volunteer work, which will allow me to apply my knowledge and skills in a rewarding environment. Eventually I hope to have a career in the aerospace or automotive industry.

‘Uni isn’t just about study though. This year I will be travelling to the Gold Coast to represent RMIT in water polo at the University Games. University activities are a great way to meet new people, and experience things that you might not have the opportunity to otherwise.”

Rajitha Yasaratna
Associate Degree in Engineering Technology (Mechanical)
AVIATION

The Associate Degree in Aviation (Professional Pilots) program is designed to provide you with value-enhancing capabilities for the aviation industry. In addition to obtaining your associate degree you will also develop the necessary skills to obtain a full Commercial Pilots Licence.

In conjunction with your preparation as a graduate in the aviation industry, you will be able to undertake courses in Air Transport Pilot’s Licence, Instrument or Flight Instructor ratings. The program design and associated capability development have been endorsed by a range of aviation industry experts, consisting of senior pilots/operations personnel from Australia’s major airlines and aerospace organisations. The flying component of the program is conducted at RMIT Flight Training, located at Point Cook Airfield. This training area offers various types of airspace terrain and environments to maximise variety in navigational experience. At least five theory modules within this program will be delivered at the City campus.

WORKING WITH INDUSTRY

The flight training you will undertake within this program is to CASA standards. All flying will be undertaken in current model single engine Cessna aircraft with either analog or glass cockpits. Students studying the theory-based modules at the City campus may undertake industry-supported project work within the aviation industry.

WHAT YOU WILL STUDY

During your studies you will train in the following single- and multi-engine aircraft:
- Cessna 172S
- Cessna 182T
- Decathlon 8KCAB
- Frasca 242: Simulator
- PA-44 Piper Seminole (multi-engine)

Dual flight instruction inclusive of unlimited pre-and post-flight briefing time, Private Pilot Licence Theory, Commercial Pilot Licence Theory, Air Transport Pilot Licence Theory, and Instrument Rating Theory.

Total syllabus is 160 hours flying (minimum). This program exceeds the minimum 150-hour CASA requirements.

CAREER OUTLOOK

You will graduate with a CASA Commercial Pilots Licence plus either Command Instrument rating (multi-engine) or Flight Instructor rating (single engine).

Additional ratings or endorsements may be necessary in order to secure initial employment. Graduates should have researched and have an understanding of initial employment opportunities for newly graduated pilots. Initial job opportunities build pilot experience and may involve relocating to areas for charter or outback station flying, sightseeing flights, seasonal fire spotting, seasonal beach patrols, or (with an Instructor Rating) instructing.

With additional ratings and endorsements and experience gained it is possible to secure jobs in multi-engine charter operations flying higher performance aircraft, regional airlines, or high performance general aviation activities such as The Flying Doctor or Coast Watch services.

Employment opportunities in the role of First Officer exist in major airlines with experience gained over the required time period in the situations described above.

Later, with significant experience and managerial qualifications, you may also seek positions within major airlines as a Chief Pilot, Fleet Manager, Flight Operations Manager, or with an aviation regulator as a Flight Operations Inspector.

PROFESSIONAL RECOGNITION

The Associate Degree in Aviation (Professional Pilots) program conducted by RMIT University Flight Training meets all the Civil Aviation Safety Authority (CASA) requirements. All flying activities are conducted under RMIT University’s CASA approved Air Operator Certificate (AOC).

PREREQUISITE

Units 3 and 4—mathematics (any) and a study score of at least 25 in English (ESL) or at least 20 in any other English.

Note: Physics is highly recommended.

EXTRA REQUIREMENTS

You are required to undergo a CASA Class 1 Medical Examination performed by a medical practitioner known as a Designated Aviation Medical Examiner (DAME). For details please visit www.casa.gov.au/avmed

You will need to attend a mandatory interview at Point Cook site prior to enrolment. Please refer to the 2013 VTAC Guide for full details on extra requirements.

PATHWAY

Graduates of the Associate Degree in Aviation (Professional Pilots) may be eligible to apply for exemptions from the Bachelor of Applied Science (Aviation).

YOU MIGHT ALSO LIKE...

Aviation (degree) page 10
Engineering—aerospace page 13

The Associate Degree in Aviation is only offered as a full-fee paying program

Full-fee place

If you are offered a full-fee place you are required to pay a tuition fee that covers the full tuition costs of your program. The tuition fees vary according to each program and are adjusted on an annual basis. Only students who are Australian citizens, New Zealand citizens or hold an Australian permanent resident visa are eligible for a domestic full-fee place. Students who do not meet these citizenship and residency requirements may be offered a place as an onshore international student.

FEE-HELP

FEE-HELP is an optional loan scheme that assists eligible students to pay all or part of their tuition fees. Associate Degree in Aviation applicants who are Australian citizens or holders of a permanent humanitarian visa are eligible to apply for a FEE-HELP loan. To learn more about FEE-HELP visit www.studyassist.gov.au to obtain a copy of the FEE-HELP Information booklet.
AVIATION

Bachelor of Applied Science (Aviation)

RMIT CODE | DURATION & APPLICATION | 2012 CLEARLY-IN ATAR
BP070 | FT3 | 75.55

www.rmit.edu.au/programs/bp070

Aviation is a dynamic and vibrant global industry which underpins enormous commercial and social benefits. The aviation industry is highly competitive and needs well-trained individuals capable of working effectively within a rapidly changing environment.

RMIT has been involved in aerospace and aviation education and training for over 70 years. RMIT’s suite of aerospace and aviation programs produces graduates who are equipped to be effective in their chosen industry in a wide range of roles and levels. RMIT graduates continue to be highly employable.

The Bachelor of Applied Science (Aviation) degree is designed to prepare you for employment in a range of operational management and planning roles within the aviation industry. These include airline operations management, airport airside operations, airport planning, aviation safety management, airline maintenance management and supervision.

The degree offers a career development option for people who already hold a Commercial Pilot’s Licence. Commercial pilots are eligible to receive one year of advanced standing towards this degree. You will gain a broad awareness of the aviation industry and a range of analytical skills that will enable you to work with a comprehensive appreciation of the operating environment for this special industry.

As a graduate, you will be able to demonstrate breadth and depth of thinking to be able to solve problems in the aviation industry workplace.

WORKING WITH INDUSTRY

In the first year of the program, industry based professionals deliver guest lectures that are designed to enhance your understanding of the aviation industry.

WHAT YOU WILL STUDY

The Bachelor of Applied Science (Aviation) degree combines studies in core discipline areas with elective studies that enable you to tailor your degree and to enhance your career opportunities. Areas of study include:

- Technical studies through which you develop an understanding of aircraft and aviation systems.
- Professional development courses where project activities develop and integrate discipline-specific skills and generic capabilities that are widely used across any profession.
- Industry systems and processes through which you develop knowledge and skills in planning and management.
- The specifics of planning and management relevant to the aviation industry, taking account of risk, safety, human factors, the industry environment, and other key themes.

CAREER OUTLOOK

Graduates may choose to embark on professional careers in the following areas:

- airline management
- airline operations
- airport management
- airport operations
- airport planning
- aviation charter business
- aviation consulting
- aviation regulation and safety.

PREREQUISITE

Units 3 and 4—mathematics (any) and a study score of at least 30 in English (ESL) or at least 25 in any other English.

Qualified commercial pilots and others with experience in the aviation industry are particularly encouraged to apply.

PATHWAY

Graduates of the following program may be eligible to apply for exemptions:

- Associate Degree in Aviation (Professional Pilots)

Students with relevant qualifications who are successful in gaining a place in the degree may apply for advanced standing. Applications for recognition of prior learning are considered on a case-by-case basis.

YOU MIGHT ALSO LIKE...

Engineering—aerospace page 13

Engineering—aerospace/management page 14

STUDENT PROFILE

“...My sister, who works for Emirates Airlines, inspired me to study aviation science. I have always wanted a challenging career and not just a nine-to-five job and aviation seemed to be ideal.

“I chose RMIT because it is ranked among the best universities in Melbourne for engineering and the aviation degree is really well structured.

“The aviation degree is great preparation for work. The assignments are challenging and emphasise case studies, so we apply what we are learning to real situations.

“A highlight of my studies so far has been researching my own project on the Emirates Airlines route network and product strategies in a global perspective. Applying theory to a practical problem will help me when applying for work in the future.

“I have enjoyed studying the human factors in aviation. Safety is crucial and I have learned how to ensure a safe workplace. I also liked the aircraft systems course because it contained a lot of engineering detail. I have gained team leadership skills and have become more responsible and self-reliant. These are very useful attributes to have.

“Because I’m studying something that I enjoy, I know that whatever situation I face at work in the future, my job will be satisfying.”

Jamuna Boodhram
Bachelor of Applied Science (Aviation)
In this double degree you will learn about both the aviation industry and management, providing you with a wide range of employment prospects.

The Bachelor of Applied Science (Aviation) component will prepare you for employment in a range of operational management and planning roles in the aviation industry. These include roles in areas such as:
- airline operations planning and management
- airline maintenance management and supervision
- airport landside operations
- airport airside operations
- airport planning and management
- aviation safety management.

The Bachelor of Business (Management) component will further enhance your understanding and skills and prepare you to manage contemporary organisations within complex and changing economic and social conditions.

WHAT YOU WILL STUDY
The double degree is composed of core courses that cover material essential for all students in the program, as well as elective courses through which you may tailor your degree. Core discipline areas include aviation and airport management, aviation strategy, aircraft maintenance, human factors, aviation safety and quality and business courses.

Through the business management studies, you will investigate the themes and concepts of management skills such as business skills, professional specialisations and business experience. Specialisations may include management, employment relations, management, accounting and finance, human resource management and marketing.

CAREER OUTLOOK
This program will prepare you for employment in a range of operational management and planning roles in the aviation industry. These include roles in areas such as:
- airline operations planning and management
- airline maintenance management and supervision
- airport landside operations
- airport planning and management
- aviation safety management.

PROFESSIONAL RECOGNITION
The Bachelor of Applied Science (Aviation) and the Bachelor of Business (Management) are not subject to external accreditation.

GLOBAL CONNECTIONS
Students in this program have opportunities for study abroad and student exchange.

EXTRA REQUIREMENTS
Non-Year 12 applicants must complete and submit a VTAC Personal History form (formerly Pi form), available online at www.vtac.edu.au, if they wish other information to be considered. Please refer to the 2013 VTAC Guide for full details on extra requirements.

PATHWAY
You may be eligible for credit into other RMIT University programs after successfully completing this program.

There are no articulation agreements with this double degree, however students with related qualifications in aviation or management may be considered for exemptions on a case-by-case basis. Your GPA will be considered as part of the application for advanced standing.

YOU MIGHT ALSO LIKE...
Aviation (degree) page 10
Management refer to the business brochure
The Advanced Diploma of Engineering provides advanced technical and managerial training for technicians and engineers working in aerospace manufacturing, design and maintenance at a paraprofessional level.

Aircraft maintenance engineers install, maintain and repair aircraft engines, airframes, airframe systems, electrics, instruments, radio systems and aircraft sheet metalwork.

Specialist areas include aircraft design and layout, mechanical (fault diagnosis of airframe and engine systems) and structures (producing, maintaining and repairing sheetmetal, bonded and non-metallic composite materials and components on aircraft).

You will develop the necessary industry skills to work in small, medium and large enterprises and the defence forces.

The program has been developed through extensive consultation with industry to address identified training needs and establish structured career pathways.

**WORKING WITH INDUSTRY**

Students are expected to gain relevant industrial experience when they design, implement and evaluate their work placement projects in industry.

**WHAT YOU WILL STUDY**

The advanced diploma will extend your skills and knowledge of aerospace engineering. You will learn aerodynamics and stability analysis, problem solving and high-speed flight, as well as skills in aerospace mechanisms and power transmission devices.

Aircraft and control concepts and integrated control systems are introduced, covering areas including automatic flight controls, multi-axis stability and design and operation of power assisted controls.

Training in aircraft systems includes the principles, purpose and operation of aircraft fluid power systems. Aerospace drawing is also covered.

You will learn how to undertake technical investigation, reporting and troubleshooting for the aerospace industry.

**CAREER OUTLOOK**

Graduates may find work in a range of roles including:

- production supervisor/planner
- maintenance supervisor/planner
- technical officer
- systems technician
- design supervisor
- quality supervisor
- drafting supervisor.

**PROFESSIONAL RECOGNITION**

The advanced diploma is nationally accredited and is recognised by industry, defence forces and universities.

**GLOBAL CONNECTIONS**

Students have the opportunities to become exchange students or industrial interns overseas.

**PREREQUISITE**

There are no prerequisite studies.

**EXTRA REQUIREMENTS**

Non-Year 12 applicants must complete and submit a VTAC Personal History form (formerly Pi form), available online at www.vtac.edu.au, if they wish other information to be considered.

Please refer to the 2013 VTAC Guide for full details on extra requirements.

**PATHWAY**

Graduates may be eligible to apply for exemptions of up to two years from the Bachelor of Engineering (Aerospace Engineering).
Aerospace engineering is an exciting profession focusing on the analysis, design and operation of sophisticated aerospace hardware and software systems. The term ‘aerospace’ includes atmospheric and space flight.

As with all fields of engineering, aerospace engineering is complex and demanding, requiring talented, creative and highly motivated people. Those considering the aerospace engineering degree need well-developed skills in mathematics and physical sciences, as aerospace is a highly analytical field of engineering. In addition, you must have excellent communication skills. The aerospace industry in Australia is international and export-oriented. The emphasis is firmly on value-added design and manufacture activities that are internationally competitive and that make effective use of RMIT’s excellent standard of aerospace education.

The degree equips you with the analytical, technological and managerial skills required to practise aerospace engineering. You will also learn to appreciate the wider social implications of the engineering profession, while generating innovative engineering concepts.

WORKING WITH INDUSTRY

You are strongly advised to obtain a minimum of 12 weeks of vacation employment, allowing you to gain first-hand experience in an engineering practice environment in which professional engineers are involved. This employment is typically undertaken in the vacation prior to final year.

Opportunities also exist for an overseas work placement of between six and 12 months duration that satisfies the work experience requirement. These placements are normally taken during a one-year break in the middle or at the end of the third year of the degree. You will also have the opportunity to work with industry leaders on real-world projects in your final year. Projects will use the theory and practical experience gained through the program to solve a problem.

WHAT YOU WILL STUDY

The degree is composed of core discipline areas covering essential material and elective studies. You may tailor your education to satisfy your developing interest in aerospace and enhance your career opportunities. Core discipline areas include engineering design, engineering practice, engineering professional development and engineering sciences courses. Sustainability issues are built in to multiple areas of the program in line with the increasing demand for long term solutions in this area.

These studies are contained within the aerospace disciplines of aerodynamics, aerospace materials and structures, aerospace systems, design, dynamics and control, mathematics, professional skill development, structural analysis, thermodynamics, aerospace propulsion and engineering project management. Aerospace students will be provided with exposure to unmanned aerial vehicles (UAVs) through a course that teaches the engineering principles of UAVs. Specific aerospace focus commences in the first semester of the program. All students will also be provided with multiple opportunities for experimental learning across the degree. These learning opportunities include a design, build, fly challenge for micro-aerial vehicles—an Engineers Without Borders challenge—and other hands-on activities.

CAREER OUTLOOK

The most likely destinations for graduates are:

- design and manufacturing companies including Boeing Australia, EADS (Airbus), Hawker de Havilland, BAE Systems Australia, GKN Aerospace Engineering Services and Aerostructures and Australian Aerospace
- defence forces: Royal Australian Navy, Australian Army and Royal Australian Air Force
- Defence Science and Technology Organisation
- passenger transport airlines in Australia and internationally
- airworthiness organisations: Civil Aviation Safety Authority, Department of Defence
- general aviation.

Aerospace engineering graduates are also in high demand in non-aerospace organisations.

PROFESSIONAL RECOGNITION

The Bachelor of Engineering (Aerospace Engineering) is accredited by Engineers Australia. Graduates are eligible to apply for graduate membership of Engineers Australia and are recognised as professional engineers in all member countries of the Washington Accord. www.engineersaustralia.org.au www.washingtonaccord.org

GLOBAL CONNECTIONS

RMIT offers a range of excellent study abroad and exchange opportunities including an agreement with NUAA (Nanjing University of Aeronautics and Astronautics, China) providing aerospace engineering students with an opportunity to take part in an international exchange program. Each year second year students are selected to attend the program, which runs from early September to the middle of January the following year. Students will gain credit points for their studies, which will include: elementary Chinese, aerodynamics, experimental aerodynamics, project: design of aircraft, course: design of aircraft, optimisation design of structures.

PREREQUISITE

Units 3 and 4—mathematical methods (CAS) and a study score of at least 30 in English (ESL) or at least 25 in any other English.

EXTRA REQUIREMENTS

Non-Year 12 applicants must complete and submit a VTAC Personal History form (formerly PI form), available online at www.vtac.edu.au, if they wish other information to be considered. Please refer to the 2013 VTAC Guide for full details on extra requirements.

PATHWAY

Graduates of the Associate Degree in Engineering Technology (Mechanical) who achieve a grade point average (GPA) of 2.0 or greater are guaranteed entry with two years exemption (equivalent to 192 credit points) into the Bachelor of Engineering (Aerospace Engineering).

Graduates with a GPA of less than 2.0 may apply, and if successful in gaining a place, may be eligible for exemptions.

Graduates of the following programs may also be eligible to apply for exemptions:

- Advanced Diploma in Engineering (Aeronautical)
- Advanced Diploma of Engineering (Aerospace—Mechanical)

TELL ME MORE

Aerospace engineering students at RMIT University are set the challenge of designing and building their own micro aerial vehicle (MAV) in teams, before flying their MAV on a simulated rescue mission. MAVs are also known as Unmanned Aerial Vehicles (UAV).

Scan this code to watch the online video at www.youtube.com/user/mitmedia

YOU MIGHT ALSO LIKE...

Aviation (degree) page 10
Engineering—aerospace/management page 14
**ENGINEERING—AEROSPACE/AVIATION**

**MANAGEMENT**

**DD** Bachelor of Engineering (Aerospace Engineering) and Bachelor of Business (Management)

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**City and Bundoora**

www.rmit.edu.au/programs/bp071

Aerospace engineering is an exciting profession concerned with the analysis, design and operation of sophisticated aerospace hardware and software systems. The term ‘aerospace’ includes atmospheric and space flight. Aerospace engineering is complex and demanding, requiring talented, creative and motivated people. If you are considering entering the aerospace engineering degree you will need well-developed skills in mathematics and physical sciences, as well as good communication skills.

Management involves the planning, organising, coordination and direction of the resources of organisations. The manager draws on technical skills as diverse as accounting and organisational behaviour, and builds on personal abilities including analysis and leadership. Many graduates of this double degree move into management roles soon after graduating, as the double degree meets the needs of those who seek management education.

**WORKING WITH INDUSTRY**

You are strongly advised to obtain a minimum of 12 weeks of vacation employment of a type that allows you to gain first-hand experience in an engineering practice environment in which professional engineers are involved. This employment is typically undertaken in the vacation prior to final year. Opportunities also exist for an overseas work placement of between six and 12 months duration, which satisfies the work experience requirement. These placements are normally taken during a one-year break at the middle or end of the third year of the program.

You will also have the opportunity to work with industry leaders on real-world projects in your final year. Projects will use the theory and practical experience gained through the program to solve a problem.

**WHAT YOU WILL STUDY**

The double degree is composed of core courses that cover material essential for all students in the program, and elective courses through which you may tailor your degree. Core discipline areas include engineering design, engineering practice, engineering professional development, engineering sciences and business courses. These studies are contained within the aerospace disciplines of aerodynamics, aerospace materials and structures, aerospace systems, design, dynamics and control, mathematics, professional skill development, structural analysis, thermodynamics, aerospace propulsion and engineering project management. Specific aerospace focus commences in the first semester. Sustainability issues are built in to multiple areas of the program in line with the increasing demand for long-term solutions in this area.

Aerospace students will also be provided with multiple opportunities for experimental learning across the degree. These learning opportunities include a design, build, fly challenge for micro-aerial vehicles—an Engineers Without Borders challenge—and other hands-on activities. Through the business management studies, you will investigate the themes of management skills, business skills, professional specialisations and business experience. Specialisations may include management, employment relations, management accounting and finance, human resource management and marketing.

**CAREER OUTLOOK**

The double degree gives graduates the opportunity to find work in management roles soon after graduation. Graduates may find work in:
- design and manufacturing companies including Boeing Australia, EADS (Airbus), Hawker de Havilland, BAE Systems Australia, GKN Aerospace Engineering Services and Aerostructures and Australian Aerospace
- defence forces: Royal Australian Navy, Australian Army and Royal Australian Air Force
- Defence Science and Technology Organisation
- Australian and international airlines
- airworthiness organisations: Civil Aviation Safety Authority, Department of Defence.

Aerospace engineers also gain skills in various fields of advanced technology that are in high demand in non-aerospace organisations, including the automotive industry, power generation industry, software support companies, and research organisations. Graduates may also undertake further study.

**PROFESSIONAL RECOGNITION**

The Bachelor of Engineering (Aerospace Engineering) is accredited by Engineers Australia. Graduates are eligible to apply for graduate membership of Engineers Australia and are recognised as professional engineers in all member countries of the Washington Accord. www.engineersaustralia.org.au www.washingtonaccord.org

By selecting appropriate studies, graduates of the business program may be able to obtain professional membership of the Australian Human Resources Institute or CPA Australia. www.ahri.com.au www.cpaaustralia.com.au

**GLOBAL CONNECTIONS**

RMIT offers a range of excellent study abroad and exchange opportunities including an agreement with NUAA (Nanjing University of Aeronautics and Astronautics, China) providing aerospace engineering students with an opportunity to take part in an international exchange program. Each year second year students are selected to attend the program, which runs from early September to the middle of January the following year. Students will gain credit points for their studies, which will include: elementary Chinese, aerodynamics, experimental aerodynamics, project: design of aircraft, course: design of aircraft, optimisation design of structures.

**PREREQUISITE**

Units 3 and 4—mathematical methods (CAS) and a study score of at least 50 in English (ESL) or at least 25 in any other English.

**EXTRA REQUIREMENTS**

Non-Year 12 applicants must complete and submit a VTAC Personal History form (formerly Pi form)), available online at www.vtac.edu.au, if they wish other information to be considered. Please refer to the 2013 VTAC Guide for full details on extra requirements.

* Years one and two are conducted on the City campus and years three to five are shared between the City and Bundoora campuses. The management component is studied on the City campus for all five years.

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**STUDENT PROFILE**

‘The highlight of my degree has been the four months I spent on exchange at the Nanjing University of Aeronautics and Astronautics (NUAA), in China. NUAA is a very well known university and the knowledge and experience I gained from studying there was incredible. ’

‘Going on exchange really opens your eyes to what the rest of the world has to offer. It’s also good preparation, if you decide to work overseas.’

David Boktor
Bachelor of Engineering (Aerospace Engineering)/Bachelor of Business Management

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Legend: see page 59
AUTOMOTIVE AND MECHANICAL ENGINEERING

ENGGINEERING—AUTOMOTIVE

Bachelor of Engineering (Automotive Engineering)

RMIT CODE DURATION & APPLICATION 2012 CLEARLY IN ATAR
BP067 FT4—1 88.05

City and Bundoolan
www.rmit.edu.au/programs/bp067

Automotive engineering is the application of principles drawn from the sciences in order to develop economical and sustainable automotive designs or to solve automotive problems. Encompassing complete car design, automotive engineering is global in scope and increasingly environmental in outlook.

The industry generates and applies new technologies (e.g. full-electric, hybrid power trains and fuel cells) for the betterment of society. The degree has resulted from industry and student demand. It builds on a core program of mechanical engineering and offers specialist courses that enable a graduate to be immediately industry ready. Reflecting the increasing interaction between industry and higher education, you may also have the opportunity to take a one-year paid industrial placement with associated academic credit.

WORKING WITH INDUSTRY

Australian students are expected to complete a minimum of 12 weeks of relevant vacation employment that allows you to gain first-hand experience in an engineering practice environment in which professional engineers are involved. This is typically undertaken in the vacation prior to your final year.

You may choose to undertake a one-year industry placement position, commencing in the middle or at the end of third year in either Australia or overseas. You will gain valuable industrial experience, which may lead to a full-time job upon completion of the degree. RMIT will help you to find placements. This optional industry placement may increase the time needed to graduate by six or 12 months. In the final year of your degree, you will undertake a major final year research project that is either industry based or simulates a project in an industrial situation using RMIT test and analysis tools.

WHAT YOU WILL STUDY

Automotive engineering courses include:

Vehicle power systems
An introduction to the development, design, specification, and operation of internal combustion engines for mobile applications with a focus on traditional spark-ignited and diesel engines. It also covers alternative power plants and fuels.

Sustainable vehicle design and Sustainable automotive manufacturing
Tackle and solve advanced engineering problems, particularly in the structural design and manufacturing of vehicles and automotive components. The course represents the basis for the analysis and solution of problems related to modern automotive sustainable design and manufacturing and advanced computer modelling techniques of real engineering problems. Future vehicles will have extremely low or zero emissions, use less fossil-based fuels and be characterised by low levels of noise and vibration. Advanced computer-aided engineering (CAE) will further assist automotive engineers to optimise their design for lighter and high performance cars. Vehicles will feature advanced smart sensors and smart materials to offer higher levels of passenger safety and comfort.

Vehicle handling and control
Covers dynamic models of vehicles on the road. Manoeuvring, power performance, gear box requirements and ride comfort according to vibrating models of a car are also covered.

Vehicle aerodynamics
Emphasis is placed on solving aerodynamic problems using a balance of computation and experimental techniques. The growing influence of styling on body shape is approached from both an artistic and a scientific viewpoint.

Vehicle noise and vibration
Understand the nature of sound, effectively document human non-linear response to sound, understand the automotive body structure design for improved noise and vibration, and characterise the relationship between noise and vibration. Appreciate the difference between structure-borne and air-borne sources.

CAREER OUTLOOK

Automotive engineers are employed by major car, truck and bus companies, as well as racing teams and parts manufacturers.

Graduates from RMIT are working in F1 teams, Porsche, Ford, General Motors, Toyota, Audi, BMW, Daimler-Chrysler and Bosch.

PROFESSIONAL RECOGNITION

The Bachelor of Engineering (Automotive Engineering) is accredited by Engineers Australia. Graduates are eligible to apply for graduate membership of Engineers Australia and are recognised as professional engineers in all member countries of the Washington Accord.
www.engineersaustralia.org.au
www.washingtonaccord.org

The degree also satisfies the requirements of the Society of Automotive Engineers, Australia for graduate membership.
www.saeea.com.au

GLOBAL CONNECTIONS

One of the buzzwords in automotive engineering is ‘globalisation’. Car companies are linking up around the world, and mergers and takeovers are common. Many manufacturers produce vehicles for the world market. Engineers are increasingly expected to move around the world, and some manufacturers use Australia as the base for launching models into South East Asia. Reflecting this international theme, RMIT has strong links with universities and automotive companies worldwide.

You can elect to take some courses in European universities, and student exchanges and industrial placements have taken place with Germany, Switzerland, France, the UK and USA.

PREREQUISITE

Units 3 and 4—mathematical methods (CAS) and a study score of at least 30 in English (ESL) or at least 25 in any other English.

EXTRA REQUIREMENTS

Non-Year 12 applicants must complete and submit a VTAC Personal History form (formerly Pi form), available online at www.vtac.edu.au, if they wish other information to be considered. Please refer to the 2013 VTAC Guide for full details on extra requirements.

PATHWAY

Graduates of the Associate Degree in Engineering Technology (Mechanical) who achieve a grade point average (GPA) of 2.0 or greater are guaranteed entry with two years exemption (equivalent to 192 credit points) into the Bachelor of Engineering (Automotive Engineering).

Graduates with a GPA of less than 2.0 may apply, and if successful in gaining a place, may be eligible for exemptions. Graduates of the following program may also be eligible to apply for exemptions:

» Advanced Diploma of Engineering Technology (Mechanical and Manufacturing)

YOU MIGHT ALSO LIKE...

Engineering—mechanical (degree) page 18
Engineering—mechanical/ management page 21
ENGINEERING—AUTOMOTIVE/MANAGEMENT

**Bachelor of Engineering (Automotive Engineering) and Bachelor of Business (Management)**

In this double degree you will gain expertise in both automotive engineering and management, improving your employment prospects in a management career in the automotive or related industries.

The Bachelor of Engineering (Automotive Engineering) component will prepare you to become an engineer adept in core mechanical and automotive engineering skills.

The Bachelor of Business (Management) component will prepare you to manage contemporary organisations within complex and changing economic and social conditions.

**WORKING WITH INDUSTRY**

You are expected to complete a minimum of 12 weeks of relevant vacation employment that allow you to gain first-hand experience in an engineering practice environment in which professional engineers are involved. This is typically undertaken in the vacation prior to your final year.

In the final year of your studies, you will undertake a major project that is either industry based or simulates an industrial situation.

**WHAT YOU WILL STUDY**

This degree consists of core automotive engineering and management courses, and elective course from the two disciplines. The electives on offer enable you to develop specialist skills and enhance your learning in areas of particular interest to you in management and engineering.

Electives within automotive engineering offer specialisation centred on the following main areas of expertise:

- Computer aided engineering
- Vehicle aerodynamics
- Vehicle noise and vibration.

**CAREER OUTLOOK**

Graduates may move to management positions. Areas of employment include transport, petrochemical industries, energy supply, building services, defence forces, governments and general engineering and consulting organisations.

**PROFESSIONAL RECOGNITION**

Accreditation timelines are set by Engineers Australia. Full accreditation will be sought as soon as possible following the first cohort of graduates. Once fully accredited, graduates of the program will be eligible for graduate membership of Engineers Australia. Note: the automotive engineering single degree is already fully accredited by Engineers Australia.

**GLOBAL CONNECTIONS**

Students in this program have opportunities for study abroad and student exchange, and there are also opportunities for paid internships overseas under RMIT’s RIIERP program.

**PREREQUISITE**

Units 3 and 4—mathematical methods (CAS) and a study score of at least 30 in English (ESL) or at least 25 in any other English.

**EXTRA REQUIREMENTS**

Non-Year 12 applicants must complete and submit a VTAC Personal History form (formerly PI form), available online at www.vtac.edu.au, if they wish other information to be considered. Please refer to the 2013 VTAC Guide for full details on extra requirements.

**PATHWAY**

You may be eligible for credit into other RMIT University programs after successfully completing this program.

There are no articulation agreements with this double degree, however students with related qualifications in automotive engineering or management may be considered for exemptions on a case-by-case basis. Your GPA will be considered as part of the application for advanced standing.

* Years one, two and three are conducted on the City campus and years four and five are conducted on the Bundoora campus. The management component is studied on the City campus.

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**STUDENT PROFILE**

‘I have a real passion for motor sports. After working for a few years, I decided the time was right to go back to uni and follow my passion and study automotive engineering.

‘I chose RMIT as it is well known for its hands-on approach to learning and has a good reputation in engineering.

‘A highlight of my studies has been joining the Formula SAE team, which has taught me a lot, not only about engineering concepts, but how to work in a professional environment.

‘As well as the engineering theory that I’m learning, I am learning a lot about organisation, research techniques and collaborating with my peers.

‘My favourite course so far has been materials as it is an area that I’m very interested in, especially looking at things like fibre reinforced composites.

‘This degree not only teaches the knowledge required to practice as an engineer, but also the skills required in a professional environment.

‘Once I complete my degree, I hope to get an internship with an automotive company in Germany or the UK. Ultimately, my dream job is to be an F1 racing engineer.

‘I would tell anyone considering a career in engineering to go for it! Engineering is challenging and fun and leads to a very rewarding career. And it’s not just for boys.’

Robyn Lee

Bachelor of Engineering (Automotive Engineering)
The Associate Degree in Engineering Technology (Mechanical) provides training in the basic engineering skills, which can provide you with a pathway into degrees in aerospace engineering, automotive engineering and mechanical engineering.

Mechanical engineers apply their knowledge of materials, structures, energy and management to design, analyse and improve a range of products. These can include refrigerators, washing machines, solar water heaters, pumps, engines, compressors, wind turbines and air-conditioning systems.

The second year of the associate degree will allow you to specialise in either mechanical, automotive or aerospace engineering. Associate degrees are relatively new qualifications in Australia. The degrees are broad-based and allow you to develop employment-related skills relevant to your discipline/s.

Associate degree graduates will have diverse job opportunities in areas such as mechanical design, aircraft systems and automotive manufacturing.

Classes are taught through a combination of lectures, seminars, tutorials, online reading, workshop, practical and laboratory sessions.

WORKING WITH INDUSTRY

In the final semester you will undertake an engineering project.

Projects topics are developed by you with industry partners and your lecturers. You will be required to design, develop and present a product. Past projects have included:

- Design and development of a miniature gas powered F1 racing car. This car was designed using CAD/ CAM software to analyse, manufacture, test. At the completion of the project the vehicles are competitively raced.
- Using CAD/CAM processes you will design, build and fly an unmanned aerial vehicle (UAV). This project culminates in a competition focusing on time of flight and flight control.

The engineering project is carried out either in conjunction with industry or simulates a real engineering work environment.

WHAT YOU WILL STUDY

Year one

Year one covers basic engineering skills including drafting, use of hand and power tools, and machine processes and manufacture.

Electrical fundamentals, and the basic concepts of AC motors, electrical concepts and PLCs are covered, along with the use of CAD to produce complex drawings.

You are introduced to materials engineering, which includes metals, composites, plastics and adhesives. You will learn the processes used to construct objects from these materials and the external factors that can change the effectiveness of these materials.

Basic management techniques include organisational management, teamwork, leadership, and sustainability and environmental impacts.

You will build on your secondary school mathematics and lay the foundation for more advanced mathematics.

Year two

During second year, you will be able to specialise in either automotive/mechanical or aerospace engineering.

The automotive engineering/mechanical stream will include studies in thermo-fluids, while the aerospace stream introduces you to aerodynamics and aircraft systems and integration.

You will also be required to undertake an engineering project.

CAREER OUTLOOK

Graduates will have diverse job opportunities in areas including mechanical design, aircraft systems and automotive manufacturing.

Areas of employment include the automotive industry, computer design and manufacture, high-speed automation, aviation and biotechnology, engineering and management consultancy.

You will also be able to fill a diverse range of middle management positions.

PROFESSIONAL RECOGNITION

Graduates are eligible to seek membership of Engineers Australia at the engineering officer level.

GLOBAL CONNECTIONS

You have the opportunity to apply for a one semester exchange with VIA University College in Denmark in the final year of the program.

EXTRA REQUIREMENTS

Non-Year 12 applicants must complete and submit a VTAC Personal History form (formerly Pi form), available online at www.vtac.edu.au, if they wish other information to be considered. Please refer to the 2013 VTAC Guide for full details on extra requirements.

PATHWAY

Graduates of the Associate Degree in Engineering Technology (Mechanical) who achieve a grade point average (GPA) of 2.0 or greater are guaranteed entry with two years exemption (equivalent to 192 credit points) into the following programs:

- Bachelor of Engineering (Aerospace Engineering)
- Bachelor of Engineering (Automotive Engineering)
- Bachelor of Engineering (Mechanical Engineering)

Graduates with a GPA of less than 2.0 may apply, and if successful in gaining a place, may be eligible for exemptions.

YOU MIGHT ALSO LIKE...

Engineering—civil (associate degree) page 30
Engineering—electrical/electronics (associate degree) page 43
Engineering—network (associate degree) page 38
Mechanical engineering involves the conversion and control of energy and motion in machinery and systems. Mechanical engineers apply knowledge of materials, structures, energy and management to the solution of technical problems. They design, analyse and improve products as diverse as refrigerators, washing machines, solar water heaters, pumps, engines, compressors, wind turbines and air-conditioning systems.

WORKING WITH INDUSTRY
You are expected to complete a minimum of 12 weeks of relevant vacation employment that allows you to gain first-hand experience in an engineering practice environment in which professional engineers are involved. This is typically undertaken in the vacation prior to your final year. Australian students may choose to do a one-year industry placement position at the middle or end of third year either in Australia or overseas. This allows you the opportunity to gain academic credit, and is a valuable paid industrial experience which may lead to future employment. This optional industry placement may increase the time to graduate by six or 12 months. In the final year of your studies you will undertake a major project that is either industry based or simulates an industrial situation.

WHAT YOU WILL STUDY
In the first six semesters, you will study basic mechanical engineering and science courses aimed at developing competence in essential analytical problem-solving skills and design capabilities.

Courses dealing with professional practice include report writing and other communication skills, and work modules on organisations, ethics, design and build activities, project management, occupational health and safety, and sustainability. These courses support the development of leadership skills, initiative, self-reliance, personal and group organisation skills, and encourage a sense of group responsibility and accountability.

In the later stages of the degree, you are able to tailor your study program by specialising in automotive engineering degree for the first four elements, applied to specific industry problems. The program offers specialisations centred on the following:
» computer-aided engineering and design
» industrial aerodynamics and computational fluid dynamics
» energy conservation and renewable energy
» mechatronics, dynamics and control.

The degree has strong design and analysis elements, applied to specific industry problems. The degree has a common core with the automotive engineering degree for the first four semesters and shares some specialist electives. The major project, normally undertaken in final year, and some engineering design courses are frequently linked with industry.

CAREER OUTLOOK
Job opportunities exist in the design, manufacture and testing of Australian-built cars; the design, specification and installation of large air conditioning systems; the design of materials handling systems in the packaging and mining industries; power generation; construction and maintenance in the petrochemical industry; the design of Victoria’s trains; computerised control in the pharmaceutical industry; the aeronautical industry; the implementation of new manufacturing methods in the electronics industry; the development of engineering computer software; research and development in industry and other technical institutions; technical sales in the marketing divisions of engineering companies; and engineering management in large and small organisations, both in Australia and overseas.

PROFESSIONAL RECOGNITION
The Bachelor of Engineering (Mechanical Engineering) is accredited by Engineers Australia. Graduates are eligible to apply for graduate membership of Engineers Australia and are recognised as graduate professional engineers in all member countries of the Washington Accord.

GLOBAL CONNECTIONS
Opportunities are available to students to carry out a work placement overseas with industry partners. Additionally, the option to link with a multinational organisation is available for final year projects.

YOU MIGHT ALSO LIKE...

STUDENT PROFILE
‘I chose RMIT because I had heard that their applied approach to learning ensured graduates were more capable in the workforce. I also enjoyed visiting Open Day. And you can’t beat the location!’

‘A highlight of my studies has been testing the scientific theory that we are taught in practical laboratories. We also learn about the non-technical aspects of engineering, such as teamwork, time management and ethics, which helps prepare us for the workforce.’

Martin Goddard
Bachelor of Engineering (Mechanical Engineering)
What you will study

The program includes core mechanical engineering and biotechnology courses. The electives on offer enable you to develop specialist skills in areas of particular interest to you.

Core courses in the program include engineering, science and design courses, and biotechnology courses such as engineering mechanics, chemistry principles, thermo-fluid mechanics, cell structures and functions, mechanical design, food microbiology, renewable energy systems, immunology, introduction to computational engineering, gene technology, engineering and enterprise, science project and professional engineering project. These project courses and some engineering design courses are frequently linked with industry. Courses dealing with professional practice include report writing and other communication skills and work modules on organisations, ethics, design and build activities, project management, occupational health and safety and sustainability. These courses support the development of leadership skills, initiative, self-reliance, personal and group organisational skills and encourage a sense of group responsibility and accountability. The program offers mechanical electives centred on the following:

- computer-aided engineering and design
- industrial aerodynamics and computational fluid dynamics
- energy conservation and renewable energy
- mechatronics, dynamics and control.

Career outlook

Graduates of this new double degree program will be well equipped to deal with the technical and professional challenges in the growing interface of mechanical engineering and biotechnology. It is expected that graduates will find employment in a variety of areas such as design, manufacturing and testing in both government and commercial institutions. Significant opportunities are anticipated in processing industries such as fermentation, food, cell products and vaccines both in Australia and overseas.

Professional recognition

Accreditation timelines are set by Engineers Australia. Provisional accreditation will be sought as soon as possible after the first significant intake of students. Full accreditation will be sought as soon as possible after the first significant cohort of graduates. Once fully accredited, graduates of the program will be eligible for graduate membership of Engineers Australia. Note: the automotive engineering single degree is already fully accredited by Engineers Australia.

www.engineersaustralia.org.au

Global connections

Students in this program have opportunities for study abroad and student exchange, and there are also opportunities for paid internships overseas under RMIT’s RIIERP program.

Prerequisites

Units 3 and 4—mathematical methods (CAS) and a study score of at least 30 in English (ESL) or at least 25 in any other English.

Extra requirements

Non-Year 12 applicants must complete and submit a VTAC Personal History form (formerly PI form), available online at www.vtac.edu.au, if they wish other information to be considered. Please refer to the 2013 VTAC Guide for full details on extra requirements.

Pathway

You may be eligible for credit into other RMIT University programs after successfully completing this program. There are no articulation agreements with this double degree, however students with related qualifications in mechanical engineering or biotechnology may be considered for exemptions on a case-by-case basis. Your GPA will be considered as part of the application for advanced standing.

*Years one, two and three are conducted on the City campus and years four and five are conducted on the Bundoora campus. The biotechnology component is studied on the City campus.
**INDUSTRIAL DESIGN**

**Degree Program**

**Bachelor of Engineering (Mechanical Engineering) and Bachelor of Design (Industrial Design)**

**NEW**

**CITY** and **BUNDOORA**


The **Bachelor of Engineering (Mechanical Engineering)/Bachelor of Design (Industrial Design)** double degree combines two distinct, yet highly complementary, individual bachelor degrees. In addition to the objectives of the individual programs, the double degree program enables students to broaden and contextualise their learning in a way that is possible only by studying the different disciplines together.

Industrial design involves linking industry and economy with people, culture, society and environment. Mechanical engineering involves the conversion and control of energy and motion in machinery and systems. The combined Bachelor of Engineering (Mechanical Engineering) and Bachelor of Design (Industrial Design) will allow integration of these highly complementary disciplines.

The combined qualification in mechanical engineering and industrial design provides graduates with the technical and creative skills to engage at a professional level with the design and development of advanced manufactured products. In particular, students of the double degree program will be well placed to take advantage of new RMIT facilities such as the Advanced Manufacturing Precinct (AMP).

**WHAT YOU WILL STUDY**

The program includes core mechanical engineering and industrial design courses, and elective mechanical engineering courses. The electives on offer enable you to develop specialist skills in areas of particular interest to you.

Core courses studied in the program include engineering science and industrial design courses. Project courses and some engineering design courses are frequently linked with industry. Course dealing with professional practice include report writing and other communication skills, and work modules on organisations, ethics, design and build activities, project management, occupational health and safety, and sustainability. These courses support the development of leadership skills, initiative, self-reliance, personal and group organisation skills, and encourage a sense of group responsibility and accountability.

The program offers mechanical electives centred on the following:

- computer-aided engineering and design
- industrial aerodynamics and computational fluid dynamics
- energy conservation and renewable energy
- mechatronics, dynamics and control.

**CAREER OUTLOOK**

The double degree in mechanical engineering and industrial design provides graduates with the technical and creative skills to engage at a professional level with the design and development of advanced manufactured products.

The program will enable strong work integrated learning opportunities and will develop highly employable, work ready graduates.

It is expected that graduates will find employment in a variety of areas within mechanical and industrial design, including: biomedical, automotive and electro-mechanical product design.

**WORKING WITH INDUSTRY**

You are expected to complete a minimum of 12 weeks of relevant vacation employment that allows you to gain first-hand experience in an engineering practice environment in which professional engineers are involved. This is typically undertaken in the vacation prior to your final year.

In the final year of your studies you will undertake a major project that is either industry based or simulates an industrial situation.

**PROFESSIONAL RECOGNITION**

Accreditation timelines are set by Engineers Australia. Provisional accreditation will be sought as soon as possible after the first significant intake of students. Full accreditation will be sought as soon as possible after the first significant cohort of graduates. Once fully accredited, graduates of the program will be eligible for graduate membership of Engineers Australia. Note: the mechanical engineering single degree is already fully accredited by Engineers Australia.

www.engineersaustralia.org.au

**GLOBAL CONNECTIONS**

Students in this program have opportunities for study abroad and student exchange. The option to link with a multinational organisation is available for final year projects.

**PREREQUISITE**

Units 3 and 4 — mathematical methods (CAS) and a study score of at least 30 in English (ESL) or at least 25 in any other English.

**EXTRA REQUIREMENTS**

Non-Year 12 applicants must complete and submit a VTAC Personal History form (formerly Pi form), available online at www.vtac.edu.au, if they wish other information to be considered. Please refer to the 2013 VTAC Guide for full details on extra requirements.

**PATHWAY**

You may be eligible for credit into other RMIT University programs after successfully completing this program. Such credits, if any, will be considered upon application to those other programs.

There are no articulation agreements with this double degree, however students with related qualifications in mechanical engineering or biotechnology may be considered for exemptions on a case-by-case basis. Your GPA will be considered as part of the application for advanced standing.

* Years one and two are conducted on the City campus, third year is conducted primarily at the City campus with some Bundoora attendance and years four and five are conducted on the Bundoora campus, with year five having some City campus attendance.
Mechanical engineering involves the conversion and control of energy and motion in machinery and systems. Mechanical engineers design, analyse and improve products as diverse as refrigerators, washing machines, solar water heaters, pumps, engines, compressors, wind turbines and air-conditioning systems. They apply knowledge of materials, structures, energy and management to the solution of technical problems.

Management involves the planning, organising, coordination and direction of the resources of organisations. The manager draws on technical skills as diverse as accounting and organisational behaviour, and builds on personal abilities including analysis and leadership.

WORKING WITH INDUSTRY
You are expected to complete a minimum of 12 weeks of relevant vacation employment that allows you to gain first-hand experience in an engineering practice environment in which professional engineers are involved. This is typically undertaken in the vacation prior to your final year.

In the final year of your studies you will undertake a major project that is either industry based or simulates an industrial situation.

WHAT YOU WILL STUDY
The degree consists of core mechanical engineering and management courses, and elective courses from the two disciplines. The electives on offer enable you to develop specialist skills in areas of particular interest to you.

Electives within mechanical engineering offer specialisations centred on the following main areas of project work, research and staff expertise:

- computer-aided engineering and design
- industrial aerodynamics and computational fluid dynamics
- energy conservation and renewable energy
- mechatronics dynamics and control.

CAREER OUTLOOK
Job opportunities exist for graduates within the automotive and transport industries; petrochemical and mineral processing industries; energy supply; building services; defence forces; government; or general engineering and consultancy organisations.

This double degree gives graduates the opportunity to propel themselves into management roles soon after graduation.

PROFESSIONAL RECOGNITION
The Bachelor of Engineering (Mechanical Engineering) is accredited by Engineers Australia. Graduates are eligible to apply for graduate membership of Engineers Australia and are recognised as graduate professional engineers in all member countries of the Washington Accord. Corporate membership may be gained after a period of approved professional experience. Graduates of this degree may also be eligible to join professional bodies relevant to their area of specialisation.

www.engineersaustralia.org.au
www.washingtonaccord.org

GLOBAL CONNECTIONS
The option to link with a multinational organisation is available for final year projects.

PREREQUISITE
Units 3 and 4—mathematical methods (CAS) and a study score of at least 30 in English (ESL) or at least 25 in any other English.

EXTRA REQUIREMENTS
Non-Year 12 applicants must complete and submit a VTAC Personal History form (formerly Pi form), available online at www.vtac.edu.au, if they wish other information to be considered.
Please refer to the 2013 VTAC Guide for full details on extra requirements.

* Years one to three are conducted on the City campus and years four and five are shared between the City and Bundoora campuses. The management component is studied on the City campus for all five years.

YOU MIGHT ALSO LIKE...
- Engineering—aerospace page 13
- Engineering—automotive page 15
- Engineering—mechanical (degree) page 18
- Engineering—mechatronics and manufacturing page 54
The Advanced Diploma of Engineering Technology trains mechanical and manufacturing paraprofessional engineers. You will gain the theoretical and practical skills to work as a technical officer or engineering supervisor/manager. The program is flexible, allowing you to study either a generic mechanical/manufacturing program or a specialised stream that suits your particular interests or the needs of your employer. The advanced diploma is equivalent to 1400 hours of training effort, with an embedded diploma consisting of 800 hours. A qualified tradesman with a Certificate III in Mechanical Trade or equivalent can claim 200 hours towards this program. The program is delivered through lectures, tutorials, practical/laboratory exercises, work-simulated projects, competency-based assessments, online and offline learning and balanced hands-on practice.

WORKING WITH INDUSTRY
This program has no formal work experience requirements, but some courses may require research and liaison with industry to complete coursework.

YOU MIGHT ALSO LIKE...
Engineering—mechanical (associate degree)   page 17

WHAT YOU WILL STUDY

Diploma
The diploma covers basic engineering skills including drafting, computer-aided drafting (CAD), use of hand and power tools, machining and manufacturing processes. This includes learning to produce a range of basic engineering components using cutting, grinding and turning techniques. You will learn skills in basic machining operations and fabrication tasks, as well as learning how to select, set up and use a range of test equipment to measure voltage, current and resistance. You are also introduced to basic engineering mathematics (including calculus techniques) and materials engineering. You may also learn to apply computer-aided manufacturing (CAM) processes and programming.

Advanced diploma
The advanced diploma builds on the skills learned in the diploma. The main course areas include:
- 3D computer-aided drafting and solid modelling
- Advanced statics and dynamics
- Design of machinery
- Metrology
- Project and quality management
- Strength of materials
- Thermodynamics and fluid mechanics.

CAREER OUTLOOK
Graduates can be employed as a technical officer/engineering assistant, supervisor or manager. They work in offices, technical laboratories, workshops or on-site. Mechanical and manufacturing paraprofessional engineers assist professional engineers:
- in mechanical design
- supervise and manage manufacturing and assembly plants
- construct, operate and maintain machines, and manufacture
- maintain mechanical equipment, mechanical installations and mechanical facilities.

It is estimated that 90% of the total workforce across all disciplines in the mechanical and manufacturing industry are TAFE graduates. With further training it is possible to become a registered/fully qualified engineer.

PROFESSIONAL RECOGNITION
The Advanced Diploma of Engineering Technology is recognised in the Federal Metal Industry Award and relates directly to the C3 classification of Engineering Associate—Level II. The qualification is a pathway for entry into the professional body Engineers Australia as an engineering associate.

www.engineersaustralia.org.au

PREREQUISITE
There are no formal prerequisites. However, successful completion of mathematics (preferably mathematical methods and physics in your Year 12 studies) will facilitate progress in this program.

EXTRA REQUIREMENTS
Non-Year 12 applicants must complete and submit a VTAC Personal History form (formerly Pi form), available online at www.vtac.edu.au, if they wish other information to be considered. Please refer to the 2013 VTAC Guide for full details on extra requirements.

PATHWAY
Graduates who are successful in gaining a place may be eligible to apply for exemptions of up to one and half years from the following degrees:
- Bachelor of Engineering (Advanced Manufacturing and Mechatronics)
- Bachelor of Engineering (Automotive Engineering)
- Bachelor of Engineering (Mechanical Engineering)

* A new program title and code will be applicable for 2013 entry
Biomedical engineers design systems ranging from cardiac monitors to computer processors, artificial hearts to artificial tendons and limbs. The degree covers several areas of engineering, including electronics, mechanical, chemical and materials engineering, as well as biomedical sciences. The degree also focuses on problem-solving and communication skills. These skills, combined with the technical knowledge you will learn, will help you to think critically and independently. You will be able to come up with innovative ways to apply science and engineering to biomedical and healthcare.

WORKING WITH INDUSTRY
In addition to the compulsory 12 weeks of work experience required, you will have the opportunity to complete industry-sponsored projects. Final year students can apply for summer research scholarships.

WHAT YOU WILL STUDY
In this degree you will study courses from many areas of RMIT University. This will provide you with knowledge in a number of different fields, including physics, mathematics, biochemistry and medical science. In the first years of the degree you will study the fundamentals of engineering, along with the basics of biology, anatomy and physiology. In the engineering field, you will learn about electronics in relation to biomedical applications, as well as nano-electronics. You will also study fundamental sciences including biomechanics, biomaterials and human physiology. You will study both compulsory and elective courses. The range of choices will help you select courses according to your own interest and chosen specialisation. You will also complete major design projects in third and fourth year that are very similar to the work of practising engineers. These projects are designed to make you industry-ready.

CAREER OUTLOOK
One of the biggest industries in Australia in terms of research and government funding is biotechnology. This vibrant, expanding industry produces devices for medical electronics, clinical and rehabilitation engineering and biomaterials. There are wide-ranging employment opportunities for graduates, including work in hospitals (servicing and optimising equipment), medical device manufacturing, nanotechnology and biotechnology. Graduates are employed as regulators in government organisations, or as researchers for government, universities or private companies. You can also work in private medical and pathology laboratories.

PROFESSIONAL RECOGNITION
Accreditation is being sought with Engineers Australia. Once fully accredited, graduates of the program will be recognised as professional engineers in all member countries of the Washington Accord.

GLOBAL CONNECTIONS
RMIT encourages students to participate in Study Abroad and other centrally run opportunities. You also have the opportunity of undertaking an industry placement for six or 12 months either locally as advertised by local businesses, or internationally through the RMIT International Industry Experience and Research Program (RIERP).

STUDENT PROFILE

‘I have always had an interest in the medical industry and I wanted a career that would allow me to apply technology and practical skills to facilitate medical research, enhance diagnostic capabilities and improve treatment options. I also wanted to be able to go home at the end of the day feeling like I had made a contribution.

‘The biomedical engineering field is expanding rapidly and the breadth of industries you can work in with this qualification is vast, and job prospects are good.

‘I was lucky enough to be one of 24 graduates selected to take part in the Graduate Development Program at the Australian Nuclear Science and Technology Organisation. There were more than 460 applicants for the program and I feel extremely fortunate to have secured a spot.

‘I work in the Life Sciences division. My position involves creating automated devices that radio-chemists can use in their work, which help limit their exposure to radiation and chemicals.

‘In final year I undertook a research project using microfluidics to assist in malaria research. It was a completely new experience for me, and a big learning curve, but it was thoroughly enjoyable and gave me the confidence to tackle unfamiliar problems.

‘I also received a Summer Research Scholarship from the School of Computer and Electrical Engineering, which I used to get a head start on my final year research project. Having that on my résumé was a bonus when applying for graduate programs.

‘I love what I do because my job is very hands-on and I have a lot of freedom to experiment with my design ideas. Also, the novelty of telling people I work at a nuclear reactor will never get old!’

Bonnie Howe
Bachelor of Engineering (Biomedical Engineering)
This program combines the studies in applied chemistry and chemical engineering and gives you the skills to help you deliver processes that could change the world.

The program includes in-depth studies in chemistry and analytical science, along with the full range of chemical engineering courses that will put you at the forefront of developing new and established technologies.

**WHY DOUBLE-UP?**
As a graduate with a multidisciplinary qualification, you will be highly employable, as you will have a better understanding of the requirements of team members from both specialties. You will interact with a wide range of relevant industries and broaden your career prospects.

**WORKING WITH INDUSTRY**
Many courses are designed in collaboration with industry partners and people working in the industry are often invited to talk about their jobs and the opportunities available to you. Industry field trips will allow you to see first-hand how the industry works. You may also complete 12 weeks of professional engineering work experience, giving you the opportunity to put what you have learnt into practice and discover the career you would like to pursue when you graduate. Final year projects will give you the opportunity to work on industry-based problems. In addition, selected students travel to the Alcoa mines and refineries in Western Australia to see large-scale mineral extraction and processing.

**WHAT YOU WILL STUDY**

**Year one**
You will be introduced to the fundamentals of chemical engineering design, combined with chemistry theory and laboratory skills. Sustainable engineering is also introduced.

**Year two**
An example of courses studied include:
- Analytical spectroscopy
- Biochemical engineering
- Fluid flow and particle mechanics
- Heat and mass transfer
- Instrumental and environmental analysis
- Mathematics for engineers
- Process thermodynamics
- Reaction engineering.

**Year three**
You will select your chemical engineering specialisation:
- Chemistry theory and laboratory
- Process control and simulation
- Process principles.

**Year four**
An example of courses studied include:
- Advanced instrumental analysis
- Engineering experimental investigation
- Environmental and hazard analysis
- Process plant design and economics.

**Year five**
The focus in your final year is on your design and research projects, which will depend on your specific area of interest. These projects give you the edge in a wide range of industry roles.

**CAREER OUTLOOK**
As a graduate of a multidisciplinary qualification, you will be highly employable. Graduates are employed in a range of chemical industries in Australia, typically in the areas of oil and gas, food, biotechnology, pharmaceuticals, agricultural chemicals and polymers. In the process design sector, RMIT graduates typically work on developing production processes from the lab to large-scale. You will be well placed to take leading roles in the development and commercialisation of new chemical products.

**PROFESSIONAL RECOGNITION**
This double degree is recognised by the Royal Australian Chemical Institute, the Institute of Engineers (Australia) and the Institution of Chemical Engineers (IChemE), UK.

**GLOBAL CONNECTIONS**
You may take one or more semesters at an overseas institution through the RMIT Education Abroad program at more than 120 partner universities.

**PREREQUISITE**
Units 3 and 4—chemistry and one of mathematical methods (CAS) or specialist mathematics, and a study score of at least 30 in English (ESL) or at least 25 in any other English.

**EXTRA REQUIREMENTS**
Non-Year 12 applicants must complete and submit a VTAC Personal History form (formerly Pi form), available online at www.vtac.edu.au, if they wish other information to be considered. Please refer to the 2013 VTAC Guide for full details on extra requirements.
WORKING WITH INDUSTRY
There are opportunities for you to spend a week in a process industry in third year and learn about the roles of chemical engineers. Twelve weeks of professional engineering work experience is also recommended, usually between third and fourth years. Work experience gives you the chance to polish workplace skills and evaluate the kind of industry and employer you would like to work for. Work experience is a great motivator for success and RMIT students have worked for organisations such as BAE, BP, Cadbury, Cytovac, CSL, CUB, ExxonMobil, Kraft, Moldflow and Rio Tinto.

WHAT YOU WILL STUDY
The chemical engineering program covers the application of chemical, physical and biological sciences and technology for the improvement of industrial processes. The first year of the program further develops your skills in chemistry and mathematics, and introduces you to biochemistry, fundamentals of chemical engineering (mass and energy balance) and the design of chemical processes. The second year of the program develops your knowledge of core chemical engineering areas such as fluid flow, reaction engineering, thermodynamics, and heat transfer. The third year of the program develops your skills in environmental, safety and economic analysis of processes, design of process equipment and control schemes. The final year of the program helps you to consolidate your core chemical engineering skills and apply them in a major process design project. You will specialise in major chemical engineering industry areas such as environmental, metallurgical, petroleum, and fluids engineering in third and final years. Each semester in this program involves project-based courses which have been designed to develop your generic skills such as teamwork, project management, sustainability analysis, and communication.

CAREER OUTLOOK
Chemical engineering is a truly international career. The RMIT degree is recognised around the world, and many Australian companies provide the opportunity for engineers to travel.

In Australia, the major areas of employment are chemical, petroleum, and petrochemical industries; food industry; water; environmental management and pollution control; mineral and metallurgical industries; plastics/polymer; biomaterials and diagnostic agents; pharmaceuticals and vaccines; cosmetics; electricity and gas utilisation; research and development; and project design and consulting. Chemical engineers can work in a variety of areas, from process and project engineering to marketing or research. Approximately half of all graduates will hold senior management positions at some stage in their careers.

PROFESSIONAL RECOGNITION
The Bachelor of Engineering (Chemical Engineering) degree is accredited by Engineers Australia. Graduates are eligible for graduate membership of Engineers Australia as a professional engineer. www.engineersaustralia.org.au

The Institution of Chemical Engineers (IChemE), based in the UK, is the primary international professional society for the chemical engineer. The Bachelor of Engineering (Chemical Engineering) degree is accredited by IChemE, UK, at the MEng level.

GLOBAL CONNECTIONS
You can spend one or two semesters in universities in Canada, USA, Mexico, Denmark, Germany, Sweden, China and Korea. You can also undertake industry work experience with some of the world’s leading companies in Europe.

PREREQUISITE
Units 3 and 4—chemistry and mathematical methods (CAS) and a study score of at least 30 in English (ESL) or at least 25 in any other English.

EXTRA REQUIREMENTS
Non-Year 12 applicants must complete and submit a VTAC Personal History form (formerly Pi form), available online at www.vtac.edu.au, if they wish other information to be considered. Please refer to the 2013 VTAC Guide for full details on extra requirements.

* Part-time study may be available. Please contact the relevant RMIT school for more information.

YOU MIGHT ALSO LIKE...

<table>
<thead>
<tr>
<th>Subject</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>Applied chemistry/ engineering—chemical</td>
<td>page 24</td>
</tr>
<tr>
<td>Engineering—chemical/ biotechnology</td>
<td>page 26</td>
</tr>
<tr>
<td>Engineering—chemical/ management</td>
<td>page 27</td>
</tr>
<tr>
<td>Food technology/ engineering—chemical</td>
<td>page 29</td>
</tr>
</tbody>
</table>
**Chemical engineering brings together science with engineering practice and design. Biotechnology uses knowledge at the molecular level of living systems to devise strategies to solve important practical problems, for example, controlling disease and making the environment safer. Chemical engineers apply biotechnology to make products on a large scale.**

These integrated skills can be applied to environmental management, agriculture and natural resource management, as well as a range of biological-based products and processes. Chemical engineers also make the processing industries work more efficiently and minimise their environmental impact by using less energy and producing less waste.

**WHY DOUBLE-UP**

The double degree program at RMIT covers the application of chemical engineering and biotechnology methodologies and technologies for better management of the environment; preventing, diagnosing and curing disease; improving crop plants and livestock; detecting pollutants and contaminants; and using organisms to produce chemicals, including drugs and food, and agrichemicals.

**WHAT YOU WILL STUDY**

The program builds on the basic sciences of chemistry and mathematics studied in Year 12, and goes on to cover chemical, physical and biological sciences and technology. It introduces microbiology, immunology and genetics, as well as fluid flow, particle mechanics, heat and mass transfer, process thermodynamics, and sustainable engineering. Cell and tissue culture and molecular biology are also included at third year, together with engineering process principles.

You will develop knowledge in the fundamentals of chemical engineering and biotechnology as well as developing generic skills such as team building. Project work is a feature of each year.

**CAREER OUTLOOK**

Chemical engineering is a truly international career. The RMIT degree is recognised around the world, and many Australian companies provide the opportunity for engineers to travel. A chemical engineering graduate can work in a variety of areas, from process and project engineering to marketing or research. Graduates from this program are employed in research; production and testing; positions in government and commercial laboratories; and in industry. Graduates from the program are currently employed by government departments (local, state and Commonwealth), CSIRO, medical research institutes, hospitals, universities, secondary teaching, and private industry such as CSL Ltd and other employers. Options include forensics and food processing, and with experience or further qualification graduates are employed at higher levels of responsibility.

**PROFESSIONAL RECOGNITION**

Graduates qualify for professional membership of scientific societies such as the Australian Institute of Biology, the Australian Society for Microbiology, and the Australian Biochemical Society. Graduates are also eligible for graduate membership of Engineers Australia and the Institution of Chemical Engineers (IChemE), UK. IChemE is the primary international professional society for the chemical engineer. The double degree is accredited by IChemE (UK) at the MEng Level.

**GLOBAL CONNECTIONS**

You can spend one or two semesters in universities in Canada, USA, Mexico, Denmark, Germany, Sweden, China and Korea. You can also undertake industry work experience with some of the world’s leading companies in Europe.

**EXTRA REQUIREMENTS**

Non-Year 12 applicants must complete and submit a VTAC Personal History form (formerly Pi form), available online at [www.vtac.edu.au](http://www.vtac.edu.au), if they wish other information to be considered. Please refer to the 2013 VTAC Guide for full details on extra requirements.

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**YOU MIGHT ALSO LIKE...**

- Applied chemistry/engineering—chemical page 24
- Biotechnology see the science brochure
- Biotechnology/biomedical science see the science brochure
- Engineering—chemical page 25
- Engineering—chemical/management page 27
- Food technology/engineering—chemical page 29

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* Year one is conducted on the City campus and years two to five are shared between the City and Bundoora campuses.
WORKING WITH INDUSTRY
There are opportunities for you to spend a week in a process industry in third year and learn about the roles of chemical engineers. Twelve weeks professional engineering work experience is recommended, usually between fourth and fifth years. Work experience gives you the chance to polish workplace skills and evaluate the kind of industry and employer you would like to work for. Work experience is a great motivator for success and RMIT students have worked for organisations, such as Basell, BP, Cadbury, Cryovac, CSL, CUB, ExxonMobil, Kraft, Moldflow and Rio Tinto.

WHAT YOU WILL STUDY
Building on the sciences of chemistry and mathematics you will develop skills in the fundamentals of chemical engineering. You will also be able to specialise in major chemical engineering industry areas such as environmental, metallurgical, petroleum, and fluids engineering in your final years. The management degree introduces core business concepts and analysis skills, which you build on in the areas of organisational behaviour, leadership, governance, ethics, microeconomics and commercial law. Later you can specialise in management areas including employment relations, health services management, management accounting, finance, marketing, international business or logistics and supply chain management.

CAREER OUTLOOK
The RMIT degree is recognised around the world, and many Australian companies provide the opportunity for engineers to travel. In Australia, the major areas of employment are chemical, petroleum and petrochemicals; food industry; water; environmental management and pollution control; mining; plastics/polymer; biomaterials and diagnostic agents; pharmaceuticals; vaccines; cosmetics; electricity and gas; and project design and consulting. A chemical engineering graduate can work in a variety of areas, from process and project engineering to marketing or research. Nearly two-thirds of all double degree graduates will hold senior management positions at some stage in their careers. With appropriate experience your management degree will prepare you for a range of additional roles in commercial, industrial and not-for-profit organisations.

PROFESSIONAL RECOGNITION
The Bachelor of Engineering (Chemical Engineering)/Bachelor of Business (Management) double degree is accredited by Engineers Australia. Graduates are eligible for graduate membership of Engineers Australia as a professional engineer. www.engineersaustralia.org.au
The Institution of Chemical Engineers (IChemE), based in UK, is the primary international professional society for the chemical engineer. The double degree is accredited by IChemE (UK) at the MEng level. www.icherme.org
Students may also be able to obtain professional membership of the Australian Human Resources Institute (AHRI) and CPA Australia by selecting appropriate minor studies.

GLOBAL CONNECTIONS
You can spend one or two semesters in universities in Canada, USA, Mexico, Denmark, Germany, Sweden, China and Korea. You can also undertake industry work experience with some of the world’s leading companies in Europe.

PREREQUISITE
Units 3 and 4 — chemistry and mathematical methods (CAS) and a study score of at least 30 in English (ESL) or at least 25 in any other English.

EXTRA REQUIREMENTS
Non-Year 12 applicants must complete and submit a VTAC Personal History form (formerly PI form), available online at www.vtac.edu.au, if they wish other information to be considered. Please refer to the 2013 VTAC Guide for full details on extra requirements.

* Part-time study may be available. Please contact the relevant RMIT school for more information.

YOU MIGHT ALSO LIKE...

Applied chemistry/engineering — chemical page 24
Engineering — chemical page 25
Engineering — chemical/biotechnology page 26
Food technology/engineering — chemical page 29

STUDENT PROFILE

‘In my third year, I spent six months on exchange at DHBW Mannheim University in Germany. As one of the leading countries for engineering and business, I could not have selected a better country to do my exchange in. Mannheim is home to the first Mercedes and has several universities. At times it seems like the whole city is a university campus.

‘An exchange program is an opportunity not to be missed. You will never be given such an experience and you make memories that will never be forgotten. Studying in another country will give you a global perspective.’

Amel Dzaferovic
Bachelor of Engineering (Chemical Engineering)/Bachelor of Business (Management)
Chemical engineering and pharmaceutical science at RMIT bring together engineering, science, practice and design with pharmaceutical science. RMIT focuses on industrial applications and links fundamental knowledge to real situations. RMIT’s practical and vocational focus is well recognised in industry.

The engineering degree uses problem-based learning courses to develop your interpersonal, leadership and teamwork skills. Project planning, communication, critical thinking and leadership are key attributes in a good engineer. The pharmaceutical science degree provides a thorough grounding in all aspects of pharmaceutical science. Creativity, critical analysis and specialist knowledge are key attributes in a good scientist. Graduates from this double degree will deal with a range of complex projects and issues, including research, development and maximising benefits of scientific discoveries for society.

WORKING WITH INDUSTRY
There are opportunities for you to spend a week in a process industry in third year and learn about the roles of chemical engineers. Twelve weeks professional engineering work experience is recommended, usually between fourth and fifth years. Work experience gives you a chance to polish your workplace skills and evaluate the kind of industry and employer you want to work for. Work experience is a great motivator for success and RMIT students have worked for many organisations such as Basell, BP, Cadbury, CSL, CUB, Kraft and Institute of Drug Technology Australia.

WHAT YOU WILL STUDY
The program builds on the basic sciences of chemistry and mathematics studied in Year 12, and goes on to cover biochemical, chemical and pharmaceutical science and technology. You will develop skills in the fundamentals of chemical engineering and apply these to relevant industries.

It introduces microbiology, therapeutics, pharmacology, and drug research, as well as covering all core chemical engineering subjects, and generic skills such as teamwork and communications. Project work is a feature of every year.

CAREER OUTLOOK
As a graduate with a multidisciplinary qualification you will be highly employable. Graduates are employed in a wide range of industries in Australia and overseas, including the chemical, pharmaceutical, drug manufacture, biotechnology and food industries as well as the process design sector. RMIT graduate engineers typically work on scaling up from the lab to large-scale, design and commissioning of new equipment, and existing process improvement.

PROFESSIONAL RECOGNITION
Graduates are eligible for graduate membership of Engineers Australia and the Institution of Chemical Engineers, UK.

GLOBAL CONNECTIONS
You can spend one or two semesters in universities in Canada, USA, Mexico, Denmark, Germany and Sweden. You can also undertake industry work experience overseas with some of the world’s leading companies.

PREREQUISITE
Units 3 and 4—chemistry and mathematical methods (CAS) and a study score of at least 30 in English (ESL) or at least 25 in any other English.

EXTRA REQUIREMENTS
Non-Year 12 applicants must complete and submit a VTAC Personal History form (formerly Pi form), available online at www.vtac.edu.au, if they wish other information to be considered. Please refer to the 2013 VTAC Guide for full details on extra requirements.
WHAT YOU WILL STUDY

This degree provides you with in-depth studies of selected food science and chemical engineering courses. The first year of the double degree develops your skills in chemistry, mathematics and fundamentals of chemical engineering. The second year develops your knowledge on core chemical engineering and food science courses. The third year further develops your knowledge in food science, and process design and control skills. The fourth year develops your skills in environmental, safety, and economic analysis of processes and design of process plant. The final year of the program helps you to consolidate your chemical engineering and food science skills and apply them in major process design and science projects. A design project and a science project will be the focus of your final year. These projects will give you important practice skills and the competitive edge in a wide range of industry roles.

CAREER OUTLOOK

Double degree graduates with multidisciplinary qualifications are highly employable as professionals who have a better understanding of the requirements of other team members. Industry recognises this, and statistics show that 90–100% of RMIT double degree graduates have found jobs in the first few months after completing their double degree. Food processing is Victoria's largest manufacturing industry and offers excellent employment opportunities for food and chemical engineers. RMIT graduates typically find employment in large food processing companies such as Nestlé, Cadbury, Simplot or Kraft. Many work in research and development; others move into marketing or quality assurance. Graduates have also secured managerial roles.

PROFESSIONAL RECOGNITION

Graduates are eligible for membership of the Australian Institute of Food Science and Technology (AIFST). The Bachelor of Engineering (Chemical Engineering) degree is accredited by Engineers Australia and graduates are eligible to apply for graduate membership.

www.engineersaustralia.org.au

The Institution of Chemical Engineers (IChemE), based in London, is the primary international professional society for the chemical engineer. All RMIT chemical engineering degrees fully satisfy the (UK) requirement for accreditation at the MEng level.

www.icheme.org

GLOBAL CONNECTIONS

RMIT offers student exchange scholarships for student exchange programs with USA and Canada. Many students also spend a semester or two in food science and technology programs in England, Germany and other European countries.

PREREQUISITE

Units 3 and 4—chemistry and one of mathematical methods (CAS) or specialist mathematics, and a study score of at least 30 in English (ESL) or at least 25 in any other English.

EXTRA REQUIREMENTS

Non-Year 12 applicants must complete and submit a VTAC Personal History form (formerly Pi form), available online at www.vtac.edu.au, if they wish other information to be considered. Please refer to the 2013 VTAC Guide for full details on extra requirements.
The Associate Degree in Engineering Technology (Civil) gives you the skills to move into a wide range of paraprofessional positions in the civil and structural engineering fields, and also provides a pathway into the civil and infrastructure engineering degree.

Civil engineers plan, design, draft, construct, and maintain infrastructure such as roads, bridges, dams, water supply schemes, sewage systems, transportation systems, harbours, canals, dockyards, airports, railways, factories and large buildings.

Civil and structural engineering associates provide technical support to civil engineers. Associate degrees are relatively new qualifications in Australia. The degrees are broad-based and allow you to develop employment-related skills relevant to your discipline/s.

Classes are taught through a combination of lectures, seminars, tutorials, online reading, workshop, practical and laboratory sessions.

**YOU MIGHT ALSO LIKE...**

- Engineering—electrical/electronics (associate degree) page 43
- Engineering—mechanical (associate degree) page 17
- Engineering—network (associate degree) page 38

**WORKING WITH INDUSTRY**

In the final semester you will undertake an engineering project.

Project topics are developed by you with industry partners and your lecturers. You will be required to design, develop and present a product. The project requires the full development of a simulated civil engineering project, such as:

- designing a water supply for a rural township
- designing a sub-development for a real estate project including road and channel design.

Projects require analysis of environmental impact and mitigation as well as full working drawings and materials sourced and costed.

The engineering project is either carried out in conjunction with industry or simulates a real engineering work environment.

**WHAT YOU WILL STUDY**

**Year one**

The first year introduces you to basic engineering skills including drafting, use of hand and power tools, machine processes and manufacture. Materials engineering includes metals, composites, plastics and adhesives. You will learn the processes used to construct objects from these materials and the external factors that can change the effectiveness of these materials.

A focus of first year is environmental awareness, which covers the effects on the Earth’s environment of various types of pollutants.

You will also develop key skills in computer-aided drafting (CAD) using software to produce complex CAD drawings.

**Year two**

Year two builds on your first year studies but contains more specialised courses relevant to civil engineering. This includes fluid mechanics, structural design, soil mechanics, roads and transport. You will learn to design and analyse reinforced concrete beams, slabs, footings and columns, along with the ability to design simple steel structures.

Lab sessions will also develop your knowledge of soil mechanics. The design of safe and efficient methods of controlling traffic on the road is also covered.

You will also be required to undertake an engineering project.

**CAREER OUTLOOK**

This qualification will help you find employment in the public or private sector in positions such as laboratory technician, research assistant, construction supervisor or CAD draftsperson working under the supervision of a professional engineer.

**PROFESSIONAL RECOGNITION**

Graduates are eligible to apply for membership of Engineers Australia as engineering officers.

[www.engineersaustralia.org.au](http://www.engineersaustralia.org.au)

**PREREQUISITE**

Units 3 and 4—mathematical methods (CAS) and a study score of at least 25 in English (ESL) or at least 20 in any other English.

**EXTRA REQUIREMENTS**

Non-Year 12 applicants must complete and submit a VTAC Personal History form (formerly PI form), available online at [www.vtac.edu.au](http://www.vtac.edu.au) if they wish other information to be considered. Please refer to the 2013 VTAC Guide for full details on extra requirements.

**PATHWAY**

Graduates of the Associate Degree in Engineering Technology (Civil) who achieve a grade point average (GPA) of 2.0 or greater are guaranteed entry with up to two years exemption (equivalent to 192 credit points) into the Bachelor of Engineering (Civil and Infrastructure).

Graduates with a GPA of less than 2.0 may apply, and if successful in gaining a place, may be eligible for exemptions.
**WHAT YOU WILL STUDY**

Years one and two introduce key graduate capabilities in sustainability, problem solving, engineering analysis, teamwork, leadership and communications. In first year you will extend your mathematical skills to engineering applications and gain some basic concepts around engineering applications. Year two concentrates on the big theoretical ideas around practical engineering, including site investigation, geotechnical, water and transport engineering, and more structural engineering and mathematical modeling.

Years three and four cover the application areas of structures, water resources, geomechanics and transport. Specialisation and diversification in these years is also possible.

Sub-disciplines include:
- Construction/project management: civil infrastructure projects
- Geotechnical: earthworks, tunnels, dams and ground improvement
- Structural: bridges, power stations, sports stadiums, towers, factories and other large buildings
- Transport: roads, railways, airports, canals and harbours
- Water resources: water supply, wastewater treatment, protection of coasts and river banks.

The program has strong links with industry, organisations and departments concerned with civil engineering, and relationships are established between students and their entities through project-based teaching modes used in a number of courses.

The program also maintains an environmental sustainability focus, in line with continuing trends in the global engineering profession.

**CAREER OUTLOOK**

Graduates are employed as project managers, design engineers, construction managers, environmental engineers and engineering asset managers.

The majority of 2010 graduates are employed in either a full-time or part-time capacity.

**PROFESSIONAL RECOGNITION**

The Bachelor of Engineering (Civil and Infrastructure) degree is accredited by Engineers Australia and graduates are eligible to apply for graduate membership.

[www.engineersaustralia.org.au](http://www.engineersaustralia.org.au)

**GLOBAL CONNECTIONS**

RMIT has agreements with a number of universities in America, Canada, Europe and Asia on civil and infrastructure engineering student exchange programs.

Optional tours are organised to Paris to study practical applications related to sustainable cities of the future.

**PREREQUISITE**

Units 3 and 4—mathematical methods (CAS) and a study score of at least 30 in English (EAL) or at least 25 in any other English.

Completing specialist mathematics and/or chemistry/physics will earn selection credits.

**EXTRA REQUIREMENTS**

Non-Year 12 applicants must complete and submit a VTAC Personal History form (formerly PI form), available online at [www.vtac.edu.au](http://www.vtac.edu.au), if they wish other information to be considered.

Please refer to the 2013 VTAC Guide for full details on extra requirements.

**PATHWAY**

Graduates of the Associate Degree in Engineering Technology (Civil Engineering) who achieve a grade point average (GPA) of 2.0 or greater are guaranteed entry with up to two years exemption (equivalent to 192 credit points) into the Bachelor of Engineering (Civil and Infrastructure).

Graduates with a GPA of less than 2.0 may apply, and if successful in gaining a place, may be eligible for exemptions.

Graduates of the following program may also be eligible to apply for exemptions:
- Advanced Diploma in Engineering Design

**STUDENT PROFILE**

‘Having spoken with senior engineers I was encouraged by RMIT’s reputation of not only providing a solid theoretical education but also experience in the practical application of my knowledge.

‘Last year I was awarded the Civil Contractors Federation Prize for my first year results. It was exciting to have my hard work acknowledged.

‘The degree places a strong emphasis on group work, where you need to work together and use the skills and experiences of each group member to ensure an outstanding result. Working in this way is reflective of working in industry.

‘I was fortunate enough to gain a position as a student engineer with BMD Constructions last summer and I have continued working with them one day a week this year while studying. This has been great as I have gained a better understanding of the professional environment as well developing my technical skills.’

Alexandra Meek
Bachelor of Engineering (Civil and Infrastructure)
The double degree combines studies from the civil and infrastructure engineering and management degree programs. Civil and infrastructure engineers plan, design, construct, supervise, manage and maintain the essential infrastructure that services communities.

The civil and infrastructure engineering degree at RMIT is at the forefront of engineering education and designed to meet industry demands in Australia and globally.

Sub-disciplines include construction/project management; geotechnical; structural; transport; and water resources. (For more information on civil and infrastructure please see page 30).

The management degree provides a thorough core of knowledge related to the roles and functions of business management. Clear judgement, working well with people, ethical behaviour, leadership and problem solving are all key attributes of a good manager. Managers deal with a range of complex issues, including wider economic and social factors.

Flexibility and the ability to work with others, effectively prioritise tasks, and operationalise financial, marketing and human resource aspects of an organisation are essential. In short, a good manager will be able to effectively coordinate a range of activities, process information to realise business outcomes, and resolve problems with well-considered solutions.

WORKING WITH INDUSTRY
The double degree has strong links with industry, and offers opportunities for project-based and work-integrated learning. You will be required to undertake 12 weeks of professional engineering work experience, usually between years three and four. Approximately 50% of students in their final year will undertake industry-based engineering projects.

WHAT YOU WILL STUDY
The early stages of the engineering degree introduce key capabilities in sustainability, problem solving, engineering analysis, teamwork, leadership and communications.

Years three, four and five cover the application areas of structures, water resources, geomechanics and transport. Specialisation and diversification in these years are also possible. Throughout the five years of engineering study, students develop an in-depth understanding of the theory and practice of project management. The management degree introduces core business concepts, analysis skills, and encourages you to apply business theories and models. Specialist courses in areas including employment relations are also available.

You will build on fundamental business theory in the areas of organisational behaviour, leadership, management and governance, ethics, microeconomics and commercial law. In addition, you will begin specialist studies in areas including employment relations, health services management, management accounting, finance, marketing, international business or logistics and supply chain management. The final stages enable you to improve your management skills in a practical context. Studies in strategic management are supplemented by further specialist courses.

CAREER OUTLOOK
Graduates have a wide range of career opportunities in Australia and overseas. There is a growing demand for engineering managers capable of providing leadership and decision-making across both technical and financial business systems. Engineering managers are involved in large scale capital investment projects as well as infrastructure policy and planning.

After gaining professional experience, double degree graduates typically move more quickly into middle and senior management or consultant positions.

Your management degree will prepare you for a range of additional roles, and with appropriate experience you can expect to advance to management positions in commercial, industrial and not-for-profit organisations.

GLOBAL CONNECTIONS
RMIT has agreements with a number of universities in America, Canada, Europe and Asia on civil and infrastructure engineering student exchange programs.

Optional tours are organised to Paris to study practical applications related to sustainable cities of the future. The civil and infrastructure engineering degree is also offered through Vocational Training Council in Hong Kong.

PREREQUISITE
Units 3 and 4 — mathematical methods (CAS) and a study score of at least 30 in English (ESL) or at least 25 in any other English.

Completing specialist mathematics and/or chemistry/physics will earn selection credits.

EXTRA REQUIREMENTS
Non-Year 12 applicants must complete and submit a VTAC Personal History form (formerly Pi form), available online at www.vtac.edu.au, if they wish other information to be considered.

Please refer to the 2013 VTAC Guide for full details on extra requirements.

* Part-time study may be available. Please contact the relevant RMIT school for more information.
Civil and structural engineering involves the design and construction of roads, airports, railways, buildings, bridges, dams and drainage systems.

The advanced diploma will give you the practical and technical skills to work with civil engineers in the research, design and construction of infrastructure projects.

This can include:
- using computer aided drafting (CAD) software to produce detailed drawings, plans and designs for construction work
- carrying out cost estimates and preparing material specification
- liaising with construction workers and project managers
- undertaking inspection of completed works to ensure they meet specifications and regulations
- conducting laboratory and/or field testing of materials, soil and water quality.

WORKING WITH INDUSTRY
You will complete an engineering project in the second year of the program. As part of this you will design a simulated project that involves a design brief, including communication strategies and teamwork. You will be encouraged to seek an industry mentor to oversee the project.

WHAT YOU WILL STUDY
Year one
In the first year you will focus on computer-aided drafting (CAD). A large proportion of the CAD courses are included in the first year of the program specifically to provide you with the skills to enter employment at an early stage.

Core elements of the program include mathematics, structural mechanics, materials science, computer-aided drafting (CAD), concrete and timber technology, environmental issues, computer applications, surveying, and estimating

Year two
During second year you will focus more on the design of roads, drains, sewers, and concrete/steel structures.

Complementary studies in areas such as hydrology and the mechanics of structures, fluids, site investigation and soils (including laboratory testing) provide you with a well-rounded education across a broad spectrum of civil and structural topics.

CAREER OUTLOOK
Graduates may work in the public or private sector in positions such as laboratory technician, research assistant, construction supervisor or CAD draftsperson working under the supervision of a professional engineer.

Many Melbourne consulting organisations visit RMIT to provide seminars about their operations and advise students to contact them about job prospects. Companies who have visited to date include GHD, SKM, Kingston City Council and a variety of civil contracting companies.

PROFESSIONAL RECOGNITION
Upon completion of the program, graduates are eligible to apply for membership of Engineers Australia as an engineering officer. Visit www.engineersaustralia.org.au

GLOBAL CONNECTIONS
In line with RMIT’s commitment to provide you with a global passport, you are given the opportunity to undertake your engineering project for a period of at least six months at a reputable company.

YOU MIGHT ALSO LIKE...
Engineering—civil and infrastructure page 31
Computer systems engineers work with personal computers (PCs) and computer networks in positions such as technical officers or service supervisors.

The Advanced Diploma of Computer Systems Engineering gives you a blend of practical experience with computer hardware and software applications, as well as a strong theoretical foundation.

You will achieve competencies in assembly, installation, testing and maintenance of office personal computers and computer networks. This program provides the opportunity to gain knowledge and skills towards numerous industry certifications, e.g. Cisco’s CCNA (Exploration), CCNA Security, IT Essentials, Microsoft’s MCTS and wireless (CWNA), which are highly valued by employers. It distinguishes itself from similar IT courses by putting emphasis on the underlying hardware platforms and engineering aspects of computer systems and networks. It also offers a specialised articulation stream if you decide to undertake a degree.

It is based on the nationally-accredited electrotechnology training package and includes a number of core and elective competency units in the major study areas.

WORKING WITH INDUSTRY

RMIT is committed to providing you with an education that strongly links formal learning with professional or vocational practice.

You will complete a structured activity of work-integrated learning providing you with job seeking skills and industrial work experience.

WHAT YOU WILL STUDY

Areas of specialised study include:

- Administer unix-based computers
- Assemble and test personal computers
- Client-server networks
- Commission computer systems
- Design and implement internetworking systems
- Electrical principles
- Embedded systems
- Engineering applications
- Engineering mathematics
- Enterprise networks
- Install and configure internetworking systems
- Local area networks
- Microprocessors
- Network operating systems
- Network security
- Network services
- Object oriented coding
- Project management
- Web services
- Wireless local area networks
- Work-integrated learning (industrial work experience).

CAREER OUTLOOK

Computer systems officers are responsible for administering and upgrading networking facilities in small, medium or large enterprises. The program is well structured to support future technical officers in the installation, maintenance and administration of large computer networks and computer infrastructure. You will be able to apply your skills to a wide range of business, manufacturing and operational occupations.

PROFESSIONAL RECOGNITION

Graduates are eligible to seek membership of Engineers Australia at the engineering officer level. www.engineersaustralia.org.au

Industry certification training for Cisco Certified Network Associate (CCNA), Microsoft Certified Technology Specialist (MCTS), CCNA Network Security, Wireless (CWNA) and Comptia A+ certificates are integrated into the course. To enhance your employability, you are encouraged to sit for the external examinations associated with these qualifications.

PREREQUISITE

There are no prerequisite studies.

EXTRA REQUIREMENTS

Non-Year 12 applicants must complete and submit a VTAC Personal History form (formerly Pi form), available online at www.vtac.edu.au, if they wish other information to be considered. Please refer to the 2013 VTAC Guide for full details on extra requirements.

PATHWAY

Graduates who are successful in gaining a place may be eligible to apply for exemptions of up to two years from the Bachelor of Engineering (Computer and Network Engineering).

* A new program code will be applicable for 2013 entry.
ENGINEERING—COMPUTER AND NETWORK

Bachelor of Engineering (Computer and Network Engineering)

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CITY
www.rmit.edu.au/programs/bp263

Computer and network engineers devise engineering solutions that make businesses more productive and competitive. They can design and install new products and computer systems, work with organisations to improve an existing product, or integrate more than one system so that the whole works more efficiently. They can also provide ongoing support as technology is updated.

By driving new technologies, computer engineering creates new opportunities for businesses. It can assist businesses to develop robotics and multimedia systems including speech and image processing. Computer engineers work with embedded computer systems, such as the control system for a car’s electrics.

Network engineers also design, implement and maintain digital communication networks, which are used everywhere around us. In this degree, network engineering looks at VOIP technology (internet telephony), optimising network performance and network security.

The degree focuses on work in the laboratory, conducting experiments and designing your own projects.

The opportunity to specialise in both computer and network engineering is unique to this degree.

WORKING WITH INDUSTRY

In addition to the compulsory 12 weeks of work experience required, you will have the opportunity to complete industry-sponsored projects. As a final year student you can apply for summer research scholarships.

WHAT YOU WILL STUDY

In the first two years of the degree you will learn about the basic principles of computer and network engineering and how they work. You will also study areas of mathematics and physics that are important for engineers.

Through your project work, you will gain teamwork and communication skills and learn how to be an effective leader.

In the second two years of the degree you will study your chosen specialist area in more depth. There are four compulsory courses. The rest of your courses will come from electives in computer or network engineering, or a combination of both.

You will complete individual and team-based projects that are similar to the work of practitioners. This will provide you with the skills to work in the industry.

CAREER OUTLOOK

Computer and network engineering graduates can work in industry and business to design and build computer and communication networks. They are also sought-after by universities and research organisations to improve their computer technologies. Job opportunities exist with governments to improve defence, security and emergency services.

Telecommunication operators such as Telstra and Optus employ a large number of network engineers. Similarly, many opportunities exist with equipment manufacturers such as Cisco and Huawei, and the IT departments of various organisations.

With the skills from this course you could also run your own business, providing computer or network services.

PROFESSIONAL RECOGNITION

The Bachelor of Engineering (Computer and Network Engineering) is accredited by Engineers Australia. Graduates are eligible to apply for graduate membership of Engineers Australia and are recognised as professional engineers in all member countries of the Washington Accord. Corporate membership may be obtained after an appropriate period of professional practice.

GLOBAL CONNECTIONS

RMIT encourages students to participate in Study Abroad and other centrally run opportunities. You also have the opportunity of undertaking an industry placement for six or 12 months either locally as advertised by local businesses, or internationally through the RMIT International Industry Experience and Research Program (RIERP). www.rmit.edu.au/rierp

PREREQUISITE

Units 3 and 4—mathematical methods (CAS) or specialist mathematics and a study score of at least 30 in English (ESL) or at least 25 in any other English.

Studies in specialist mathematics and physics or chemistry will earn selection credits.

EXTRA REQUIREMENTS

All applicants must complete and submit a VTAC Personal History form (formerly PI form), available online at www.vtac.edu.au, if they wish other information to be considered.

Please refer to the 2013 VTAC Guide for full details on extra requirements.

PATHWAY

Graduates of the Associate Degree in Engineering Technology (Network) who achieve a grade point average (GPA) of 2.0 or greater are guaranteed entry with two years exemption (equivalent to 192 credit points) into the Bachelor of Engineering (Computer and Network Engineering).

Graduates with a GPA of less than 2.0 may apply, and if successful in gaining a place, may be eligible for exemptions.

Graduates of the following programs, who are successful in gaining a place, are also eligible to apply for exemptions:

» Advanced Diploma of Computer Systems Engineering
» Advanced Diploma of Engineering Technology—Electrical
» Advanced Diploma of Electronics and Communications Engineering

YOU MIGHT ALSO LIKE...

Engineering—computer and network engineering/computer science
Engineering—computer and network engineering/management
Engineering—electrical
Engineering—electrical and electronic engineering
ENgINEERING—COmPUTER AND
NETWoRK/CoMPUteR SCiENCE

Bachelor of Engineering (Computer and Network Engineering) and
Bachelor of Computer Science

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www.rmit.edu.au/programs/bp002

Engineers with this qualification can work with both the hardware and structure of computer systems, as well as the software that is used to control them. With embedded technology becoming increasingly popular and complex in everyday items, engineers who can provide efficient solutions using embedded technology are in high demand.

Computer engineers work with embedded computer systems, or ‘smart devices’, and are responsible for many of the downloadable apps available today.

Network engineers design, implement and maintain digital communication networks, which are vital for many big businesses.

This degree features lots of laboratory work. You will work on designing and building specialised equipment, often using wireless communication. Lectures and tutorials will help you with technical theory. You will add to this with self-directed learning, undertaking your own research and investigation.

WORKING WITH INDUSTRY

In addition to the compulsory 12 weeks of work experience required, you will have the opportunity to complete industry-sponsored projects. As a final year student you can apply for summer research scholarships.

WHAT YOU WILL STUDY

The first topics you will study in the degree are programming basics, circuit theory and database concepts. You will also study engineering methods, mathematics and physics courses that are essential for engineers.

The second year is more technical and looks at electronics, design, embedded systems and more advanced programming, including for the web.

The third year features a mix of compulsory and elective courses. From here you have the chance to specialise in a particular area of computer and network engineering or computer science by choosing electives that will deepen your technical knowledge.

The focus in these final years is on making you industry ready. You will do a lot of project work, which will help you develop teamwork, management and communication skills. Your study will closely resemble the work of practising engineers.

CAREER OUTLOOK

Graduates of this degree can work in many industries. These include defence, health and science, business, communication and security. Graduates can work in industry and business to design and build computer and communication networks. Telecommunication operators such as Telstra, equipment manufacturers such as Cisco, and IT departments of all organisations employ network engineers to carry out design, implementation and maintenance tasks.

Universities and research organisations also seek computer scientists and engineers to improve their computer technologies. Job opportunities exist with governments to improve defence, security and emergency services. Businesses will spend more on software and computer systems in the years to come, so the demand for graduates with both engineering and computer science expertise is expected to be very high.

PROFESSIONAL RECOGNITION

The Bachelor of Engineering (Computer and Network Engineering) is accredited by Engineers Australia. Graduates are eligible to apply for graduate membership of Engineers Australia and are recognised as professional engineers in all member countries of the Washington Accord. Corporate membership may be obtained after an appropriate period of professional practice.

www.engineersaustralia.org.au
www.washingtonaccord.org

The computer science component of this double degree program is accredited at professional level by the Australian Computer Society, which accredits information and communication technology-related programs in Australia.

www.acs.org.au

GLOBAL CONNECTIONS

You have the opportunity of undertaking an industry placement for six or 12 months either locally as advertised by local businesses, or internationally through the RMIT International Industry Experience and Research Program (RIIERP).

www.rmit.edu.au/riierp

PREREQUISITE

Units 3 and 4—one of mathematical methods (CAS) or specialist mathematics and a study score of at least 30 in English (ESL) or at least 25 in any other English.

EXTRA REQUIREMENTS

All applicants must complete and submit a VTAC Personal History form (formerly Pi form), available online at www.vtac.edu.au, if they wish other information to be considered.

Please refer to the 2013 VTAC Guide for full details on extra requirements.
Computer and network engineers devise technologies that will improve information, electronics and renewable energy industries in the future.

Engineers in these fields work with professionals in project teams in manufacturing, automation, agriculture, transport, education, medicine and environmental monitoring.

This degree will help you find creative solutions to problems. RMIT has consulted with industry to develop a degree that is strong in theory and practice. Graduates may work on international telecommunications networks or environmental monitoring projects.

WHY DOUBLE-UP?

Big engineering projects have big responsibilities. By doubling up with a business degree, you will be more confident tackling complex financial systems. You will develop innovative approaches to projects and the ability to succeed in positions with more influence and responsibility.

WORKING WITH INDUSTRY

In addition to the compulsory 12 weeks of work experience required, you will have the opportunity to complete industry-sponsored projects. Final year students can also apply for summer research scholarships.

WHAT YOU WILL STUDY

This degree has a strong technical focus and integrates its practical orientation with personal and business skills development.

The first three years of the degree look at the fundamentals of computer and network engineering, mathematics, physics and business management.

All courses emphasise professional and personal development, allowing you to build your skills in communication, decision-making and team leading.

In the last years of the degree you can specialise in computer or network engineering. You will complete individual and group design projects that relate closely to industry.

CAREER OUTLOOK

After completing this degree you can look for work in many industries. These include aerospace, automotive, biomedical, micro-technology, manufacturing, power generation and distribution, electronics, computing, networks, communications, resources, defence and primary industries.

Computer and network engineers are critical to technology companies such as Intel and telecommunications companies such as Telstra. Many engineers quickly move into management roles. This double degree gives you a business qualification, which will help you manage organisations effectively.

You may also choose to start your own business, delivering services in your specialist area of study.

PROFESSIONAL RECOGNITION

The Bachelor of Engineering (Computer and Network Engineering) is accredited by Engineers Australia. Graduates are eligible to apply for graduate membership of Engineers Australia and are recognised as professional engineers in all member countries of the Washington Accord. Corporate membership may be obtained after an appropriate period of professional practice.

www.Engineersaustralia.org.au
www.washingtonaccord.org

GLOBAL CONNECTIONS

RMIT encourages students to participate in Study Abroad and other centrally run opportunities. You also have the opportunity of undertaking an industry placement for six or 12 months either locally as advertised by local businesses, or internationally through the RMIT International Industry Experience and Research Program (RIIERP).

www.rmit.edu.au/riierp

PREREQUISITE

Units 3 and 4— mathematical methods (CAS) and a study score of at least 30 in English (ESL) or at least 25 in any other English.

EXTRA REQUIREMENTS

All applicants must complete and submit a VTAC Personal History form (formerly Pi form), available online at www.vtac.edu.au, if they wish other information to be considered.

Please refer to the 2013 VTAC Guide for full details on extra requirements.

* Part-time study may be available. Please contact the relevant RMIT school for more information.
Network engineers are involved in the design, installation and analysis of computer systems and networks. They can also work with an existing network to ensure it remains effective and capable of meeting new requirements.

The Associate Degree in Engineering Technology (Network) will give you the theoretical and practical skills to work in networking, internetworking, IP telephony, network design and network security as a technical officer, network engineer or network support officer. Industry certification skills are highly valued and as part of the network engineering program you will be trained for certification exams including MCTS, A+, CCNA, CCNP, CWNA, CCNA security and Cisco unified communication.

The associate degree also provides you with a pathway into a relevant bachelor degree, to further strengthen your analytical and practical skills.

An associate degree is a two-year higher education qualification that can be undertaken after Year 12 or following a certificate III or IV. They are broad-based and help you develop employment-related skills and provide a pathway to further study in higher education.

WORKING WITH INDUSTRY
In the final semester you will undertake an engineering project.

Project topics are developed by you with industry partners and your lecturers. You will be required to design, develop and present a product. Past projects have included a network infrastructure upgrade and rollout operation of an enhanced computer system.

The engineering project is carried out either in conjunction with industry or simulates a real engineering work environment.

WHAT YOU WILL STUDY

Year one

Year one introduces you to computer architecture and the concepts and application of computer systems.

Networking fundamentals, internetworking technologies and transmission media teach you skills in the application and design of local area networks (LAN) and wide area networks (WAN); different types of transmission media.

You will also develop skills in embedded systems, including digital logic analysis and design techniques, C programming techniques and microprocessor fundamentals.

The installation, configuration and administration of network operating systems are also covered.

Year two

In second year you will start to specialise in a number of areas including scalable internet architecture, network infrastructure, network security, embedded internetworking and voice and video over IP.

Network security introduces you to the concepts of network security, including cryptography, network traffic monitoring and intrusion detection systems, firewalls, IP spoofing protection and wireless security.

Embedded internetworking gives you the knowledge to connect embedded systems to the internet.

Voice and video over IP networks covers the delivery mechanism of voice and video streams over IP networks.

You also undertake an engineering project.

CAREER OUTLOOK

Graduates will have job opportunities in many areas, including computer systems, network design, network management, network maintenance, manufacturing and design.

Graduates will be well equipped with the practical and theoretical skills to access careers as computer hardware specialists, network engineers, network professionals, network system analysts, network security specialists, and IP telephony specialists. You may also find employment in a diverse range of middle management positions.

PROFESSIONAL RECOGNITION

Graduates are eligible to seek membership of Engineers Australia at the engineering associate level.

www.engineersaustralia.org.au
This program provides you with the skills and knowledge to monitor/validate/evaluate automated equipment and electrical systems, manage risk, develop and manage maintenance programs, and provide technical advice.

You will learn about electrical control systems, including programmable logic controllers (PLC) structured in an industry-based network called supervisory control and data acquisition (SCADA); electrical design; motor control; stand-alone renewable energy systems; computer programming; computer-aided design (CAD); and other software applications.

The program is based on the nationally-accredited Electrotechnology Training Package. It includes a number of core and elective competency units in the major study areas.

WORKING WITH INDUSTRY
RMIT is committed to providing you with an education that strongly links formal learning with professional or vocational practice.

You will complete a structured activity of work-integrated learning providing you with job seeking skills and industrial work experience.

WHAT YOU WILL STUDY
Areas of specialised study include:
» Analogue electronics
» Computational solutions
» Computer-aided design (CAD)
» Digital electronics
» Electrical design
» Electrical drafting
» Electrical installations
» Electromagnetic circuits
» Engineering software
» Industrial control systems
» Microprocessor control systems
» Motor control
» Occupational health and safety
» Poly-phase power circuits
» Programmable logic controllers (PLCs)
» Programming using C and C++
» Project management
» Stand-alone renewable energy systems
» Supervisory control and data acquisition systems (SCADA)
» Technical leadership skills
» Work-integrated learning (industrial work experience)
» Workshop practice.

CAREER OUTLOOK
Employment options range from mining, manufacturing and transport to industrial renewable energy, instrumentation and control, automation, robotics and mechatronics.

Roles at a paraprofessional (technical officer) level will involve development, design, installation, commissioning, operations, and/or maintenance of engineering equipment, plant or instrumentation and control systems.

Please note: This program will not prepare students for work in electrical trades, and will not lead to an electrical (A grade) licence.

PROFESSIONAL RECOGNITION
Graduates are eligible to seek membership of Engineers Australia at the engineering officer level. www.engineersaustralia.org.au

PREREQUISITE
There are no prerequisite studies.

EXTRA REQUIREMENTS
Non-Year 12 applicants must complete and submit a VTAC Personal History form (formerly Pi form), available online at www.vtac.edu.au, if they wish other information to be considered. Please refer to the 2013 VTAC Guide for full details on extra requirements.

PATHWAY
Graduates who are successful in gaining a place may be eligible to apply for exemptions of up to two years from the following degrees:
» Bachelor of Engineering (Electrical and Electronic Engineering)
» Bachelor of Engineering (Electrical Engineering)

* This program is subject to change due to the anticipated revision of the electrotechnology training package at national level.

YOU MIGHT ALSO LIKE...

Computer systems  page 34
Electronics  page 46
WHAT YOU WILL STUDY
In the first two years of this degree you will learn the fundamental ideas and activities related to electrical engineering. You will also study mathematics and physics courses that are essential for engineers. Through your project work, you will gain communication and teamwork skills, and learn how to become a good leader.

In the second two years of the degree you will develop high-level technical and design skills and focus on your specialist area more closely. Specialisations include energy conversion, power systems and high-voltage equipment. You will complete major design projects, both team-based and individual, in years three and four. By completing these projects you will practise the communication, management and teamwork skills you have learned. The projects are similar to the ones practising engineers work on, and will help you become an industry-ready graduate.

CAREER OUTLOOK
As an electrical engineering graduate, you can work in many different industries. These include automotive, manufacturing, mining, power generation and distribution, consumer product design, resources and defence. Work opportunities will be available both in Australia and overseas.

Graduates are suitable for roles designing and supervising projects to implement new technologies in small and large organisations. The leadership skills you learn from project work in this degree can also help prepare you for management roles in industry. You could also choose to run your own business, delivering services in your chosen specialisation.

PROFESSIONAL RECOGNITION
The Bachelor of Engineering (Electrical Engineering) is accredited by Engineers Australia. Graduates are eligible to apply for graduate membership of Engineers Australia and are recognised as professional engineers in all member countries of the Washington Accord. Corporate membership may be obtained after an appropriate period of professional practice

www.engineersaustralia.org.au
www.washingtonaccord.org

GLOBAL CONNECTIONS
RMIT encourages students to participate in Study Abroad and other centrally run opportunities. You also have the opportunity of undertaking an industry placement for six or 12 months either locally as advertised by local businesses, or internationally through the RMIT International Industry Experience and Research Program (RIIERP).
www.rmit.edu.au/riierp

PREREQUISITE
Units 3 and 4 — mathematical methods (CAS) or specialist mathematics and a study score of at least 30 in English (ESL) or at least 25 in any other English. Studies in specialist mathematics and physics or chemistry will earn selection credits.

EXTRA REQUIREMENTS
All applicants must complete and submit a VTAC Personal History form (formerly Pi form), available online at www.vtac.edu.au, if they wish other information to be considered.

Please refer to the 2013 VTAC Guide for full details on extra requirements.

PATHWAY
Graduates of the Associate Degree in Engineering Technology (Electrical/Electronics) who achieve a grade point average (GPA) of 2.0 or greater are guaranteed entry with 192 credit points exemption (equivalent to two years) into the Bachelor of Engineering (Electrical Engineering).

Graduates with a GPA of less than 2.0 may apply, and if successful in gaining a place, may be eligible for exemptions.

Graduates of the following programs, who are successful in gaining a place, may also be eligible to apply for exemptions:
» Advanced Diploma of Computer Systems Engineering
» Advanced Diploma of Engineering Technology—Electrical
» Advanced Diploma of Electronics and Communications Engineering

YOU MIGHT ALSO LIKE...
Engineering—electrical and electronic page 44
 Engineering—electrical/commerce page 41
 Engineering—electrical/management page 42
 Engineering—electronic and communication page 47

STUDENT PROFILE
“I have always been good at maths and science, which led me to electrical engineering. I have a passion for development and improvement, and really want to make a contribution to the lives of others and the community in general. I believe that electrical engineering will allow me to give something back to the world.”

“RMIT has a great degree structure—we get to study the theory and gain practical experience. The hands-on work, along with work experience, means that this degree is very career orientated.”

“My favourite course has been enterprise engineering where we worked in teams to complete a project for the Engineers Without Borders challenge. We had to do everything from strategic planning to budgeting for materials. This kind of teamwork is how engineers operate in the workplace, so it’s a really good insight into our future careers.”

“I have a few more years to go, but I’m looking ahead to graduating and getting out into the workforce.”

Khalesa Ashory
Bachelor of Engineering (Electrical Engineering)
Electrical engineers design systems to generate and use electrical power efficiently. This is very important to the resource sector, and increasingly in demand for the renewable energy sector.

This degree will help you find creative solutions to engineering problems and provide the business expertise required to implement them. Graduates can become business leaders in the revolution that is producing new technologies and products for industries and communities of the future.

WHY DOUBLE-UP?
To effectively manage large infrastructure projects, employers increasingly look for engineers who have a solid understanding of business concepts in addition to their technical expertise.

With the combined skills of this double degree you can employ your technical skills to design solutions, and understand the business incentives driving these projects.

WORKING WITH INDUSTRY
In addition to the compulsory 12 weeks of work experience required, you will have the opportunity to complete industry-sponsored projects. Final year students can apply for summer research scholarships.

WHAT YOU WILL STUDY
This degree adds business skills to technical learning.

The first three years introduce fundamentals of electrical engineering, including mathematics, physics, and commerce.

The last two years specialise in electrical energy and power systems, along with finance and management.

A large component of your study involves practical work in laboratories, utilising design and problem solving skills.

CAREER OUTLOOK
Graduates can work in many different industries. The skills and project-based assessments in your degree make you industry ready. You will be able to offer employers technical skills, an innovative approach and the confidence and ability to manage large projects.

Work opportunities for graduates exist in government organisations and private companies, both in Australia and overseas. You could work in the fields of renewable energy, power generation and distribution, industrial and retail automation or developing new technologies for transportation.

Suitable roles for graduates include designing and supervising projects to implement advanced technologies.

You could also choose to start your own business.

PROFESSIONAL RECOGNITION
The Bachelor of Engineering (Electrical Engineering) is accredited by Engineers Australia. Graduates are eligible to apply for graduate membership of Engineers Australia and are recognised as professional engineers in all member countries of the Washington Accord. Corporate membership may be obtained after an appropriate period of professional practice. www.engineersaustralia.org.au www.washingtonaccord.org

GLOBAL CONNECTIONS
RMIT encourages students to participate in Study Abroad and other centrally run opportunities. You also have the opportunity of undertaking an industry placement for six or 12 months either locally as advertised by local businesses, or internationally through the RMIT International Industry Experience and Research Program (RIIERP). www.rmit.edu.au/riierp

PREREQUISITE
Units 3 and 4—mathematical methods (CAS) and a study score of at least 30 in English (ESL) or at least 25 in any other English.

EXTRA REQUIREMENTS
All applicants must complete and submit a VTAC Personal History form (formerly Pi form), available online at www.vtac.edu.au, if they wish other information to be considered.

Please refer to the 2013 VTAC Guide for full details on extra requirements.

YOU MIGHT ALSO LIKE...

Engineering—computer and network page 35

Engineering—electrical page 40

Engineering—electrical and electronic page 44

Engineering—electrical/ management page 42

Engineering—electronic and communication page 47
Electrical engineers design systems and equipment to generate and use electrical power. This is very important to the resource sector and increasingly in demand to provide renewable energy.

This degree will help you find creative solutions to engineering problems and provide you with the strategic skills to implement them. Graduates can be part of the revolution that is producing new technologies.

**WHY DOUBLE-UP?**

Engineering solutions often involve project work, and the combined skills of this double degree provide you with an edge in being able to competently manage projects. You can employ your technical skills in a wide range of industries to design solutions for controlling electrical energy, and your operational skills to plan and supervise projects.

**WORKING WITH INDUSTRY**

In addition to the compulsory 12 weeks of work experience required, you will have the opportunity to complete industry-sponsored projects. Final year students can apply for summer research scholarships.

**WHAT YOU WILL STUDY**

The first three years will introduce you to the fundamentals of electrical engineering, including mathematics and physics. The business management component of your studies will include marketing, economics and logistics. In the last two years you will specialise in electrical energy and power systems and complete two major design projects.

A large portion of your study is based around practical work in laboratories and on computers, utilising design and problem-solving skills.

**CAREER OUTLOOK**

Graduates of this double degree can work in many different industries. You will be able to offer employers technical skills, an innovative approach and the confidence and ability to lead. The skills and project-based assessments in your degree will make you industry ready.

Work opportunities also exist in government organisations and private companies, both in Australia and overseas. You could design and supervise projects in the fields of renewable energy, power generation and distribution, industrial and retail automation or developing new technologies for transportation.

You could also choose to start your own business, delivering services in your specialist area.

**PROFESSIONAL RECOGNITION**

The Bachelor of Engineering (Electrical Engineering) is accredited by Engineers Australia. Graduates are eligible to apply for graduate membership of Engineers Australia and are recognised as professional engineers in all member countries of the Washington Accord. Corporate membership may be obtained after an appropriate period of professional practice.

www.engineersaustralia.org.au
www.washingtonaccord.org

**PREREQUISITE**

Units 3 and 4—mathematical methods (CAS) and a study score of at least 30 in English (ESL) or at least 25 in any other English.

**EXTRA REQUIREMENTS**

All applicants must complete and submit a VTAC Personal History form (formerly Pi form), available online at www.vtac.edu.au, if they wish other information to be considered.

Please refer to the 2013 VTAC Guide for full details on extra requirements.

* Part-time study may be available. Please contact the relevant RMIT school for more information.

**GLOBAL CONNECTIONS**

RMIT encourages students to participate in Study Abroad and other centrally run opportunities. You also have the opportunity of undertaking an industry placement for six or 12 months either locally as advertised by local businesses, or internationally through the RMIT International Industry Experience and Research Program (RIERP).

www.rmit.edu.au/riierp
The Associate Degree in Engineering Technology (Electrical/Electronics) will develop your skills in the design, installation, maintenance, analysis, troubleshooting and management of electrical and electronic devices and systems.

It provides a pathway into relevant degrees offered at RMIT to further develop your analytical and practical skills, or can lead to employment as an engineering officer.

Electrical engineering involves the planning, design, installation and maintenance of electrical systems. These systems focus on the generation, distribution and control of electric power, and also include electronic systems used for computing, communications and other industrial applications.

Electronics engineering focuses on the design, manufacture, repair and maintenance of advanced electronic equipment and systems. This includes radio, television, computer systems, robotic systems, and other electronic systems.

Combining lectures and seminars with practical laboratory and workshop sessions, including simulation and animation tools, will enhance your learning.

An associate degree is a two-year higher education qualification that can be undertaken after Year 12 or following a certificate III or IV with industry experience.

WORKING WITH INDUSTRY
In the final semester you will undertake an engineering project.

Project topics are developed by you with industry partners and your lecturers. You will be required to design, develop and present a product.

The project involves design and build of a process control system including:

- identifying each machine and interfacing requirements
- assessing risk and design safety measures
- designing PLC software and producing code
- setting up and configuring an ethernet network and graphical user interfaces
- preparing technical files.

The project is completed with a working demonstration of the control of a manufacturing process.

The engineering project is carried out either in conjunction with industry or simulates a real engineering work environment.

WHAT YOU WILL STUDY
First year
First year introduces basic AC motors, electrical and electronic concepts and PLC operation. You learn CAD programming and how to create and interpret basic electrical and mechanical engineering drawings.

The study and use of engineering materials including metals, composites, plastics and adhesives are introduced. There is a strong focus on suitability and the environmental impact of materials.

Year two
Second year extends electrical theory, and includes RC, RL and RLC, circuit analysis, AC fundamentals, coupled circuits and DC and AC motor control principles.

The design and installation of wired and wireless local area network (LAN) and wide area networks (WAN) links is introduced. You will also develop practical skills in testing and problem solving.

Electrical/electronic design digital and analogue interfacing, microprocessor programming and automation are covered.

Programming language and how to solve scenarios related to the development of computer programs are also covered, along with an understanding of embedded systems including the design, implementation, testing and fault-finding of microprocessor based systems.

You also undertake an engineering project.

CARER OUTLOOK
Electrical and electronic technology is part of daily life and graduates are in demand. Graduates have diverse job opportunities in areas including:

- electrical/electronics design
- electronic communications
- microprocessor programming
- interfacing, automation and process control.

Employment can be found in the following industries:

- automotive
- computer design and manufacture
- aviation and biotechnology
- middle management engineering roles.

PROFESSIONAL RECOGNITION
Graduates are eligible to seek membership of Engineers Australia at the engineering officer level.

www.engineersaustralia.org.au

GLOBAL CONNECTIONS
You have the opportunity to apply for a one-semester exchange with VIA University College Denmark in the final year of the program.

PREREQUISITE
Units 3 and 4 — mathematical methods (CAS) and a study score of at least 25 in English (ESL) or at least 20 in any other English.

EXTRA REQUIREMENTS
Non-Year 12 applicants must complete and submit a VTAC Personal History form (formerly PI form), available online at www.vtac.edu.au, if they wish other information to be considered.

Please refer to the 2013 VTAC Guide for full details on extra requirements.

PATHWAY
Graduates of the Associate Degree in Engineering Technology (Electrical/Electronics) who achieve a grade point average (GPA) of 2.0 or greater are guaranteed entry with two years exemption (equivalent to 192 credit points) into the following degrees:

- Bachelor of Engineering (Electrical and Electronic Engineering)
- Bachelor of Engineering (Electrical Engineering)
- Bachelor of Engineering (Electronic and Communication Engineering)

Graduates with a GPA of less than 2.0 may apply, and if successful in gaining a place, may be eligible for exemptions.

YOU MIGHT ALSO LIKE...

Engineering—civil
(associate degree) page 30

Engineering—mechanical
(associate degree) page 17

Engineering—network
(associate degree) page 38
ELECTRICAL ENGINEERING

ENGINEERING—ELECTRICAL AND ELECTRONIC

Bachelor of Engineering (Electrical and Electronic Engineering)

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www.mit.edu.au/programs/bp262

Electrical engineers devise solutions to generate and use electrical power efficiently and cleanly. This is very important in the energy and resources sectors. Electronic engineers design and maintain a huge range of electronic devices and systems, from amplifiers and stereos to scanning equipment used in hospitals.

Electrical and electronic engineers deliver products and services that improve quality of life for individuals and whole communities. By improving drive and control systems in transport, or designing robots and automated tools, you can improve productivity in industries such as agriculture and manufacturing.

You will learn how electricity and electronics work, and how to build and maintain devices. A large amount of time will be spent on experimenting in the laboratory and designing projects to build.

WORKING WITH INDUSTRY

In addition to the compulsory 12 weeks of work experience required, you will have the opportunity to complete industry-sponsored projects.

Final year students can also apply for summer research scholarships.

WHAT YOU WILL STUDY

In the first two years of this degree you will learn fundamental ideas and undertake activities related to electrical and electronic engineering, including mathematics and physics subjects that are essential for engineers. Through your project work, you will learn high-level technical and design skills. You will gain communication and teamwork skills, and learn how to become a good leader.

The last two years of the degree offer flexibility in your areas of study. In third year you choose courses from four main study areas: electrical; electronic; communication; and computer and network engineering. In the fourth year you can choose to specialise in one area. Alternatively, you can pick electives from several of these areas for a more generalist degree.

In both of these options you will become industry ready as well as learning skills in communication, management and teamwork.

CAREER OUTLOOK

As a graduate of electrical and electronic engineering, you can look for work in lots of different areas. You could design and make electrical and electronic products, or install and maintain systems for businesses. Universities and governments also require engineers to maintain and improve their electrical and electronic technologies.

Suitable roles for graduates exist at power plants in the energy sector, working in auto-electronics for the car industry, in defence and in the higher education sector conducting research. You could also choose to run your own business, delivering services in your chosen specialisation.

PROFESSIONAL RECOGNITION

The Bachelor of Engineering (Electrical and Electronic Engineering) is accredited by Engineers Australia. Graduates are eligible to apply for graduate membership of Engineers Australia and are recognised as professional engineers in all member countries of the Washington Accord. Corporate membership may be obtained after an appropriate period of professional practice.

www.engineersaustralia.org.au
www.washingtonaccord.org

GLOBAL CONNECTIONS

RMIT encourages students to participate in Study Abroad and other centrally run opportunities. You also have the opportunity of undertaking an industry placement for six or 12 months either locally as advertised by local businesses, or internationally through the RMIT International Industry Experience and Research Program (RIERP).

www.rmit.edu.au/rierp

PREREQUISITE

Units 3 and 4—mathematical methods (CAS) or specialist mathematics and a study score of at least 30 in English (ESL) or at least 25 in any other English. Studies in specialist mathematics and physics or chemistry will earn selection credits.

EXTRA REQUIREMENTS

All applicants must complete and submit a VTAC Personal History form (formerly Pi form), available online at www.vtac.edu.au, if they wish other information to be considered.

Please refer to the 2013 VTAC Guide for full details on extra requirements.

PATHWAY

Graduates of the Associate Degree in Engineering Technology (Electrical/Electronics) who achieve a grade point average (GPA) of 2.0 or greater are guaranteed entry with two years exemption (equivalent to 192 credit points) into the Bachelor of Engineering (Electrical and Electronic Engineering).

Graduates with a GPA of less than 2.0 may apply, and if successful in gaining a place, may be eligible for exemptions. Graduates of the following programs, who are successful in gaining a place, may also be eligible to apply for exemptions:

» Advanced Diploma of Computer Systems Engineering
» Advanced Diploma of Engineering Technology—Electrical
» Advanced Diploma of Electronics and Communications Engineering

YOU MIGHT ALSO LIKE...

- Engineering—computer and network page 35
- Engineering—electrical page 40
- Engineering—electrical/commerce page 41
- Engineering—electrical/management page 42
- Engineering—electronic and communication page 47
- Engineering—electronic and communication/computer science page 48

Legend: see page 59
In this degree you will develop and combine expertise in electronic engineering and industrial design to develop new and innovative electronic products.

Electronic product design is a multidisciplinary engineering degree, which incorporates knowledge and expertise from electronic engineering, mechanical engineering, industrial design, and graphics design. Study is applied to the development of consumer electronic products that meet specific needs, are easy to use and are environmentally friendly.

The degree is about more than learning the theories behind electronic product design. You will put theory into practice and solve problems by making useful products and providing quality services. You will learn to do this by spending a lot of time on experiments in laboratory classes and undertaking design projects.

You will also complete 12 weeks of full-time work experience. This is a requirement for graduate accreditation by Engineers Australia.

**WORKING WITH INDUSTRY**

In addition to the compulsory 12 weeks of required work experience, you will have the opportunity to complete industry-sponsored projects.

Final year students can also apply for summer research scholarships.

**WHAT YOU WILL STUDY**

In the first two years of this degree you will learn the fundamental ideas and aspects related to electronic product design. You will also learn about industrial design and computer aided design through design studio courses. Through your project work, you will gain communication and teamwork skills, and learn how to become a good leader. In the second two years of the degree you will develop high level technical and industrial design skills and focus on your specialist area more closely.

You will complete major design projects, both team-based and individual, in years three and four. By completing these projects you will practise the communication, management and teamwork skills you have learned. The projects are similar to the ones practising engineers work on, and will help you become an industry-ready graduate.

**CAREER OUTLOOK**

Graduates can work in many different industries. These include product design in electronic engineering or related industries, including the aerospace, automotive, telecommunications, health, electrical, computing, resource, defence, and primary industries. Work opportunities will be available both in Australia and overseas.

The leadership skills you learn from project work in this degree can also help prepare you for management roles in industry.

Graduates are suitable for roles designing and supervising projects to implement new technologies, working in small and large organisations. You could also choose to run your own business, delivering services in your chosen specialisation.

**PROFESSIONAL RECOGNITION**

This program does not yet have accreditation by Engineers Australia. Accreditation will be sought for this program as soon as possible within the accreditation timelines set by Engineers Australia. Once fully accredited, graduates of the program will be eligible for graduate membership of Engineers Australia, and will be recognised as professional engineers in all member countries of the Washington Accord.

www.engineersaustralia.org.au
www.washingtonaccord.org

**GLOBAL CONNECTIONS**

RMIT encourages students to participate in Study Abroad and other centrally run opportunities. You also have the opportunity of undertaking an industry placement for six or 12 months either locally as advertised by local businesses, or internationally through the RMIT International Industry Experience and Research Program (RIIERP).

www.rmit.edu.au/riierp

**PREREQUISITE**

Units 3 and 4—mathematics (any) and a study score of at least 30 in English (ESL) or at least 25 in any other English.

**EXTRA REQUIREMENTS**

All applicants must complete and submit a VTAC Personal History form (formerly Pi form), available online at www.vtac.edu.au, if they wish other information to be considered.

Please refer to the 2013 VTAC Guide for full details on extra requirements.

**YOU MIGHT ALSO LIKE...**

- Engineering—biomedical page 23
- Engineering—computer and network page 35
- Engineering—electrical page 40
- Engineering—electrical and electronic page 44
- Engineering—electronic and communication page 47
- Industrial design see the architecture and building brochure
Advanced Diploma of Electronics and Communications Engineering

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**CITY**
www.rmit.edu.au/programs/c6108

This qualification will provide you with the skills and knowledge to design and validate/evaluate electronics and communications equipment and systems, manage risk, estimate and manage projects and provide technical advice.

You will develop knowledge and skills in computer-aided drafting and electronic design; computer interfacing; microprocessor programming; design; testing and commissioning of analogue and digital electronics systems; and computer programming. You will also perform simulations using various engineering software packages. The program is based on the nationally-accredited Electrotechnology Training Package. It includes a number of core and elective competency units in the major study areas.

**WORKING WITH INDUSTRY**
RMIT is committed to providing you with an education that strongly links formal learning with professional or vocational practice. You will complete a structured activity of work-integrated learning providing you with job seeking skills and industrial work experience.

**WHAT YOU WILL STUDY**
Areas of specialised study include:
- Analogue integrated circuit design
- Circuit simulation
- Communications and networks
- Computational solutions
- Computer programming
- Digital and analogue electronics and applications
- Electronic interfacing
- Electronic technology and instrumentation
- Gate array technology
- Microelectronics
- Microprocessor control systems
- Microprocessors
- Object-oriented programming
- Occupational Health and Safety
- Principles of Global Positioning Systems (GPS)
- Principles of mobile phones, AM, FM
- Printed circuit board design
- Programming using C and C++
- Project management
- Technical leadership skills
- Telecommunications
- Work-integrated learning (industrial work experience)
- Workshop practice.

**CAREER OUTLOOK**
You will have employment opportunities in a range of industries, such as manufacturing, telecommunications, radio communications, electronics equipment and services, security systems, scientific instruments, and sales. Roles at paraprofessional (technical officer) level may include, but are not limited to, electronics technician, technical officer, engineering associate, draftsperson and sales engineer.

**PROFESSIONAL RECOGNITION**
Graduates are eligible to seek membership of Engineers Australia at the engineering officer level. www.engineersaustralia.org.au

**PREREQUISITE**
There are no prerequisite studies.

**EXTRA REQUIREMENTS**
Non-Year 12 applicants must complete and submit a VTAC Personal History form (formerly Pi form), available online at www.vtac.edu.au, if they wish other information to be considered. Please refer to the 2013 VTAC Guide for full details on extra requirements.

**PATHWAY**
Graduates who are successful in gaining a place may be eligible to apply for exemptions from the following degrees:
- Bachelor of Engineering (Electrical and Electronic Engineering)
- Bachelor of Engineering (Electronic and Communication Engineering)

* A new program title and code will be applicable for 2013 entry
This degree will provide you with the skills to innovate products and services employing electromagnetic, electro-optic and electronic devices, and make them smart by application of computer hardware and software.

You will work towards developing products and services that improve people's quality of life, business and industry profitability and competitiveness, and government service delivery effectiveness. Examples of products and services include computers, smart mobile communication devices and networks, digital TV and radio broadcast, optical fibre networks for high speed internet services, flight control and safety systems for aircraft, radar and navigation aids for land, sea and air transport, high resolution scanners and nanotechnology devices for medical diagnosis and treatment, satellites for communication, navigation, scientific and earth or space observation applications.

WORKING WITH INDUSTRY
In addition to the compulsory 12 weeks of work experience required, you will have the opportunity to complete industry-sponsored projects. Final year students can apply for summer research scholarships.

WHAT YOU WILL STUDY
Along with laboratory work, lectures and tutorials will help you with technical theory. You will add to this with self-directed learning, undertaking your own research and investigation.

In the first two years of this degree you will learn the fundamental ideas and activities related to electronic and communication engineering. You will also study mathematics and physics subjects that are essential for a career in engineering. In the last two years, the focus is on making you industry ready. You will specialise in the electronic and communication fields and complete major design projects, both individually and in teams. Design projects are similar to assignments undertaken by practising engineers. You will learn high-level technical and design skills, as well as skills in communication, management, leadership and teamwork.

CAREER OUTLOOK
As a graduate, you may work in electronic, communication and manufacturing industry or business, in scientific organisations, in government departments such as education, health, transport, and defence, or in private or government research organisations. You may also establish your own commercial or consulting business, or continue with higher degrees by research.

Your career path may lead you to high-level technical expert positions or high level technical management positions.

PROFESSIONAL RECOGNITION
The Bachelor of Engineering (Electronic and Communication Engineering) is accredited by Engineers Australia. Graduates are eligible to apply for graduate membership of Engineers Australia and are recognised as professional engineers in all member countries of the Washington Accord. Corporate membership may be obtained after an appropriate period of professional practice.

www.engineersaustralia.org.au
www.washingtonaccord.org

GLOBAL CONNECTIONS
RMIT encourages students to participate in Study Abroad and other centrally run opportunities. You also have the opportunity of undertaking an industry placement for six or 12 months either locally as advertised by local businesses, or internationally through the RMIT International Industry Experience and Research Program (RIERP).

www.rmit.edu.au/rierp

PREREQUISITE
Units 3 and 4 — mathematical methods (CAS) or specialist mathematics and a study score of at least 30 in English (ESL) or at least 25 in any other English. Studies in specialist mathematics and physics or chemistry will earn selection credits.

EXTRA REQUIREMENTS
All applicants must complete and submit a VTAC Personal History form (formerly Pi form), available online at www.vtac.edu.au, if they wish other information to be considered.

Please refer to the 2013 VTAC Guide for full details on extra requirements.
WHAT YOU WILL STUDY
This double degree has a strong technical focus and integrates practical skills with business and elective studies. In the first three years, you will study the fundamentals of electronic and communication engineering, computer science, and relevant mathematics and physics. All courses emphasise professional and personal development. Essential leadership, team organisation, communication and decision-making skills are fostered to facilitate a smooth transition into industry.

In the final three years, you will specialise in both the engineering and computer science fields. You can focus on one type of engineering or take electives from both areas. Combining practical experience with business and specialist studies in later years will allow you to seamlessly move into industry.

CAREER OUTLOOK
As a graduate, you may work in electronic, communication and manufacturing industry or business, in scientific organisations, in government departments such as education, health, transport, and defence, or in private or government research organisations. You may also establish your own commercial or consulting business, or continue with higher degrees by research.
Your career path may lead you to high-level technical expert positions or high-level technical management positions.

PROFESSIONAL RECOGNITION
The computer science component of this double degree program is accredited at professional level by the Australian Computer Society which accredits information and communication technology related programs in Australia. www.acs.org.au
It is also fully accredited by Engineers Australia. Graduates are recognised as Professional Engineers in all member countries of the Washington Accord.
The Washington Accord is an agreement amongst engineering professional bodies of Australia, Canada, Chinese Taipei, Hong Kong, Ireland, Japan, Korea, Malaysia, New Zealand, Singapore, South Africa, UK and USA. www.engineersaustralia.org.au

GLOBAL CONNECTIONS
You have the opportunity of undertaking an industry placement for six or 12 months either locally as advertised by local businesses, or internationally through the RMIT International Industry Experience and Research Program (RIIERP).
www.rmit.edu.au/riierp

PREREQUISITE
Units 3 and 4—one of mathematical methods (CAS) or specialist mathematics, and a study score of at least 30 in English (ESL) or at least 25 in any other English.

EXTRA REQUIREMENTS
All applicants must complete and submit a VTAC Personal History form (formerly Pi form), available online at www.vtac.edu.au, if they wish other information to be considered.
Please refer to the 2013 VTAC Guide for full details on extra requirements.

* Part-time study may be available. Please contact the relevant RMIT school for more information.
PHYSICS/ENGINEERING—

ELECTRONIC AND COMMUNICATION

Bachelor of Science (Physics) and Bachelor of Engineering (Electronic and Communication)

DURATION & APPLICATION

BP007 FT5 or PTA—V N/A

This double degree will provide you with the skills to innovate products and services employing electromagnetic, electro-optic and electronic devices, and make them smart by application of computer hardware and software.

You will work towards developing products and services that improve people’s quality of life, business and industry profitability and competitiveness, and government service delivery effectiveness.

Examples of products and services include computers, smart mobile communication devices and networks, digital TV and radio broadcast, optical fibre networks for high speed internet services, flight control and safety systems for aircraft, radar and navigation aids for land, sea and air transport, high resolution scanners and nanotechnology devices for medical diagnosis and treatment, satellites for communication, navigation, scientific and earth or space observation applications.

WHY DOUBLE-UP?

The Bachelor of Science (Physics)/Bachelor of Engineering (Electronic and Communication Engineering) program at RMIT is designed to produce physicists and engineers who have the potential to be leaders in their professions.

WORKING WITH INDUSTRY

In addition to the compulsory 12 weeks of work experience required, you will have the opportunity to complete industry-sponsored projects.

Final year students can apply for summer research scholarships.

WHAT YOU WILL STUDY

The earlier years of this degree cover the fundamentals of electronic and communication engineering and develop basic teamwork and leadership skills. The physics courses cover scientific fundamentals and applications of natural phenomena. The later years include team and individual projects and advanced courses in a specialisation. These focus on consolidating teamwork, leadership, management, communication and professional skills.

CAREER OUTLOOK

Graduates of this double degree are keenly sought-after due to their extensive range of knowledge and skills and their excellent problem solving skills, which combine both scientific and engineering approaches.

As a graduate, you may work in electronic, communication and manufacturing industry or business, in scientific organisations, in government departments such as education, health, transport, and defence, or in private or government research organisations. You may also establish your own commercial or consulting business, or continue with higher degrees by research.

Your career path may lead you to high-level technical expert positions or high level technical management positions.

PROFESSIONAL RECOGNITION

The Bachelor of Engineering (Electronic and Communication Engineering) is accredited by Engineers Australia. Graduates are eligible to apply for graduate membership of Engineers Australia and are recognised as professional engineers in all member countries of the Washington Accord.

www.engineersaustralia.org.au

www.washingtonaccord.org

GLOBAL CONNECTIONS

RMIT encourages students to participate in Study Abroad and other centrally run opportunities. You also have the opportunity of undertaking an industry placement for one or two semesters either locally as advertised by local businesses, or internationally through the RMIT International Industry Experience and Research Program (RIIERP).

www.rmit.edu.au/riierp

PREREQUISITE

Units 3 and 4—one of mathematical methods (CAS) or specialist mathematics and physics and a study score of at least 30 in English (ESL) or at least 25 in any other English.

EXTRA REQUIREMENTS

All applicants must complete and submit a VTAC Personal History form (formerly Pi form), available online at www.vtac.edu.au, if they wish other information to be considered.

Please refer to the 2013 VTAC Guide for full details on extra requirements.

YOU MIGHT ALSO LIKE...

Applied science see the science brochure

Engineering—computer and network page 35

Engineering—electrical page 40

Engineering—electrical and electronic page 44

Engineering—electronic and communication/computer science page 48
WHAT YOU WILL STUDY

The program has significant emphasis on all aspects of local area networks (LAN) and wide area networks (WAN), with a special focus on solving complex copper and fibre network faults. Areas of specialised study include:

- Advanced network switching
- Advanced optical test equipment
- Customer premises equipment
- Digital Circuits
- Electrical skills
- Environmental policy and procedures
- Hand and power tools
- Internet protocol devices
- Network faults
- Network infrastructure
- Optical and RF measuring instruments
- Power management software
- Team management
- Testing cables
- Wide area network
- Wireless networks
- Work safely in the construction industry.

CAREER OUTLOOK

Telecommunications technicians typically work in the operations departments of telecommunications carriers. However, with the growing use of telecommunications infrastructure in large business enterprises, they may also find work providing system administration and system support in large business enterprise networks that interconnect with the public telecommunications infrastructure.

Technicians may also be responsible for maintaining complex telecommunications equipment, systems and facilities at a station. They may perform works associated with maintenance, testing, alignment, modification and operation of station electronic equipment.

PROFESSIONAL RECOGNITION

Industry certification training for Cisco certified network associate (CCNA) is integrated into this program.

GLOBAL CONNECTIONS

The Cisco certified network associate (CCNA) Exploration program is recognised internationally.

PREREQUISITE

There are no prerequisite studies.

EXTRA REQUIREMENTS

Non-Year 12 applicants must complete and submit a VTAC Personal History form (formerly Pi form), available online at www.vtac.edu.au, if they wish other information to be considered.

Applicants who do not have a Year 12 qualification and do not have relevant work experience and/or employment in the telecommunications industry must undertake the VETASSESS test for literacy and numeracy. Applicants required to take the VETASSESS will need to visit www.vetassess.com.au and arrange to complete the test. Please refer to the 2013 VTAC Guide for full details on extra requirements.

PATHWAY

Graduates may progress to the Diploma of Telecommunications Network Engineering and the Advanced Diploma of Telecommunications Network Engineering.

Graduates of the Advanced Diploma of Telecommunications Network Engineering, who are successful in gaining a place, may apply for exemptions from the Bachelor of Engineering (Computer and Network Engineering).
Environmental engineers develop skills in applying engineering concepts and technical skills to preserve the environment, minimise water, soil and air pollution, assess environmental impacts of engineering projects, develop remediation measures for environmental degradation and deliver sustainable solutions through engineering processes.

Environmental engineering at RMIT offers you the opportunity to specialise in civil engineering, groundwater or chemical engineering. Environmental engineers design systems to improve water quality, develop cleaner production technologies in agriculture, undertake rehabilitation of mining sites and contaminated land, work on land salinity problems, and prepare environmental impact studies.

You are encouraged to take initiative with your learning and engage in multidisciplinary projects. Strong groundwater and hydrogeology is a focus of the RMIT environmental engineering program, providing employment opportunities in the resources industry and land remediation areas.

**WHAT YOU WILL STUDY**

**Year one**
In the first year, you are introduced to the basic skills in mathematics, environmental science, chemistry and engineering practices. Two of the engineering practice courses offer you the opportunity to engage in a multidisciplinary project offered by Engineers Without Borders, whereby you work in teams to learn about environmental principles and sustainable design. Basic computer aided design mapping skills, and other basic computing skills are also introduced in year one. Geology courses offer skills in basic site investigations, undertaken through a number of site visits.

**Year two**
In year two, a basic grounding in environmental engineering is offered through courses such as water engineering, urban systems of water supply, geological site investigations and pollution control. From year two, you will also select courses from your chosen major.

**Year three**
In third year you will learn about groundwater, land contamination and remediation, waste water treatment and recycling and urban systems, which explores environmental design aspects of selected urban systems.

**WORKING WITH INDUSTRY**
You will undertake 12 weeks vocational work as a component of your final year workplace project. A special feature of the RMIT environmental degree is the integration of learning activities with many site visits. This includes visits to Queenscliff for observing the geo-marine environments, Hazelwood Mines for land contamination courses, Western Water Treatment Plant to observe water treatment and recycling, and geological site investigation visits to Studley Park.

Laboratory-based activities cover mini-research projects, developing innovative solutions for waste products such as generating bio-gas from waste from water treatment plants, and using fly ash in water treatment.

**GLOBAL CONNECTIONS**
RMIT environmental engineering students have the option to undertake a study tour to Paris entitled ‘Sustainable cities’ and engage in a Vietnam research project.

**EXTRA REQUIREMENTS**
Non-Year 12 applicants must complete and submit a VTAC Personal History form (formerly Pi form), available online at www.vtac.edu.au, if they wish other information to be considered. Please refer to the 2013 VTAC Guide for full details on extra requirements.

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RMIT environmental engineering students have the option to undertake a study tour to Paris entitled ‘Sustainable cities’ and engage in a Vietnam research project.

**EXTRA REQUIREMENTS**
Non-Year 12 applicants must complete and submit a VTAC Personal History form (formerly Pi form), available online at www.vtac.edu.au, if they wish other information to be considered. Please refer to the 2013 VTAC Guide for full details on extra requirements.

**YOU MIGHT ALSO LIKE...**

- Engineering—civil and infrastructure page 31
- Engineering—sustainable systems page 55
- Environmental science see the environment and planning brochure page 52
- Environmental science/engineering—environmental page 52

**GLOBAL OUTLOOK**
There is an opportunity to undertake a team research project in Vietnam (see page 52).
WORKING WITH INDUSTRY

Regular field trips involving teamwork and the use of instrumentation are often carried out in association with industry.

You will also be required to undertake 12 weeks of professional engineering work experience, usually between years three and four, which will give you a better understanding of workplace practices and is a great opportunity to identify specific areas that interest you.

YOU MIGHT ALSO LIKE...

Request the RMIT environment and planning brochure for more information about environmental programs.

HOT NEWS

Since 2002, the Vietnam project has sent a team of 12 students from RMIT’s environmental degrees to work on a relevant environment project in Ho Chi Minh City.

The students are selected through a competitive process and are drawn from environmental engineering, environmental science and environment (social science) degrees and form the nucleus of a small multidisciplinary environmental consultancy.

Working in consultation with architects, site engineers and industry specialists, you will investigate development issues in and around the city.

Practical involvement in an international project gives you an understanding of professional interaction in a cross-cultural context, an appreciation of working within an interdisciplinary team, and a general initiation into a skilled working environment. You will learn to liaise with professionals representing various fields, and the importance of teamwork skills.

www.rmit.edu.au/appliedsciences/vietnam

CAREER OUTLOOK

The training and the experiences provided at RMIT are modelled on the type of work likely to be required after graduation. This makes RMIT graduates in environmental science/environmental engineering highly employable.

A graduate in both science and engineering stands in a unique place, straddling both worlds, which makes them very much in demand. Graduates can work in corporate or industrial sectors, or in government agencies. They can work as consultants designing innovative environmental products as well as resolving existing environmental problems through the application of both their environmental science and engineering skills.

PROFESSIONAL RECOGNITION

All graduates will be eligible for membership of Engineers Australia and the Environment Institute of Australia and New Zealand. Those with sufficient chemistry may apply to the Royal Australian Chemical Institute for membership.

www.engineersaustralia.org.au
www.eianz.org

GLOBAL CONNECTIONS

Students may spend one semester or one year at an overseas institution through the Education Abroad program at more than 120 partner universities. Recent students have studied in Denmark (Technical University of Denmark), Canada (Concordia), Sweden (Lund University), Denmark (Technical University of Denmark), and USA (Buffalo State University).

PREREQUISITE

Units 3 and 4—one of mathematical methods (CAS) or specialist mathematics and a study score of at least 30 in English (ESL) or at least 25 in any other English.

EXTRA REQUIREMENTS

Non-Year 12 applicants must complete and submit a VTAC Personal History form (formerly PI form), available online at www.vtac.edu.au, if they wish other information to be considered. Please refer to the 2013 VTAC Guide for full details on extra requirements.
MECHATRONICS AND SUSTAINABLE SYSTEMS ENGINEERING

ENGINEERING—MECHATRONICS AND MANUFACTURING

Bachelor of Engineering (Advanced Manufacturing and Mechatronics)

RMIT CODE: BP013
DURATION & APPLICATION: 2012 CLEARLY: 81.05

WORKING WITH INDUSTRY

Are you interested in developing robots and high-speed automated machines? As a manufacturing and mechatronics engineer, you can work in many industries, including the automotive, aerospace, marine, food and beverage, logistics, mining and service industries. You will be at the heart of designing systems and equipment that turn raw material into finished products.

Mechatronics is a multidisciplinary engineering area that involves mechanical, hydraulic, pneumatic, electrical, electronics, computer systems and information technology. Manufacturing engineering examines the development and planning of processes and equipment. Mechatronics engineering involves the development of hardware such as robots and high-speed automated machines to carry out the plan.

The advanced manufacturing and mechatronics engineering degree specialises in all aspects of advanced manufacturing processes, from system design and quality control to the actual building of automatic systems. You will be able to design and build manufacturing systems that are environmentally sustainable while also meeting customer needs.

CITY and BUNDOORA

www.rmit.edu.au/programs/bp013

WHAT YOU WILL STUDY

RMIT’s advanced manufacturing and mechatronics engineering degree has a multidisciplinary core curriculum designed for four years of study, with three elective courses in the final years. The first four semesters are aimed at developing general, analytical problem-solving skills, design capabilities, professional practice and introductory mechatronics skills and knowledge.

In the third and fourth years, you will deepen your knowledge in mechatronics engineering by studying advanced robotics systems and performing computer analysis of manufacturing systems, process design and inventory control. Advanced manufacturing and mechatronics engineering studies are designed to reflect current industry requirements and include:

- mechatronics, including robotics and control
- high-speed automation
- manufacturing management
- advanced material and properties

The degree has an analytical focus with opportunities to work in design and development teams, as expected in many industries. Emphasis is placed on the need to view a manufacturing system as a system made of people, machines and information, the flow of which must be controlled to produce internationally competitive solutions. Specialised studies include computer-aided manufacturing, quality management, mechatronic design and advanced robotics.

The degree shares many elective studies with mechanical, automotive and aerospace engineering, allowing you to undertake specialist electives if desired.

CAREER OUTLOOK

Opportunities for advanced manufacturing and mechatronics engineers are as diverse as the manufacturing industry itself. Areas of employment include the automotive industry; the aerospace industry; computer manufacturing; high-speed automation in the process industry; food and beverage manufacturing; and engineering and management consultancy.

You will also be qualified to take up a diverse range of positions as a product design engineer and process engineer; facilities manager; production planner and quality engineer, or automation specialist.

PROFESSIONAL RECOGNITION

The Bachelor of Engineering (Advanced Manufacturing and Mechatronics) is accredited by Engineers Australia. Graduates are eligible to apply for graduate membership of Engineers Australia and are recognised as professional engineers in all member countries of the Washington Accord. Corporate membership may be gained after the required period of professional experience. Admission to Engineers Australia can allow membership of comparable professional institutions in the UK and the USA without examination. www.engineersaustralia.org.au www.washingtonaccord.org

GLOBAL CONNECTIONS

Opportunities are available for final year students to carry out a work placement overseas with industry partners. Additionally, the option to link with a multinational organisation such as ABB, Festo, Ford, Holden, Toyota, Cadbury, NI and SAGE is available for final year projects.

PREREQUISITE

Units 3 and 4 — mathematical methods (CAS)
and a study score of at least 30 in English (ESL) or at least 25 in any other English.

EXTRA REQUIREMENTS

Non-Year 12 applicants must complete and submit a VTAC Personal History form (formerly PI form), available online at www.vtac.edu.au, if they wish other information to be considered. Please refer to the 2013 VTAC Guide for full details on extra requirements.

PATHWAY

Graduates of the Advanced Diploma in Engineering Technology (Mechanical and Manufacturing) may be eligible to apply for exemptions.

* Years one and two are conducted on the City campus and years three and four are conducted on the Bundoora campus.

YOU MIGHT ALSO LIKE...

Engineering—automotive  page 15
Engineering—mechanical/ manufacturing page 22
Engineering—mechanical  page 18

STUDENT PROFILE

‘The manufacturing and mechatronics degree appealed to me because it was innovative, equipping me to work with cutting-edge technologies including intelligent machines, micro-machines, smart devices, control systems for computer products and robotics.

‘It also gave me the knowledge and skills to work not only in mechatronics, but also in more traditional engineering fields such as mechanical, electronic, electrical and computer systems engineering, and project management.’

Olessandr Prokopenko
Bachelor of Engineering (Advanced Manufacturing and Mechatronics)
**ENGINEERING—MECHATRONICS AND MANUFACTURING/INTERNATIONAL BUSINESS**

**DEGREE** Bachelor of Engineering (Advanced Manufacturing and Mechatronics) and Bachelor of Business (International Business) **NEW**

<table>
<thead>
<tr>
<th>RMIT CODE</th>
<th>DURATION &amp; APPLICATION</th>
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<tr>
<td>BP294</td>
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</table>

**CITY** and **BUNDOORA**

www.rmit.edu.au/programs/bp294

This double degree combines the best of RMIT in manufacturing and business education to develop a new breed of professionals who have the engineering knowledge essential for advancing manufacturing capability as well as international business, economic and financial analytical knowledge.

The Bachelor of Engineering (Advanced Manufacturing and Mechatronics) degree has strong emphasis on latest mechatronics technologies, systems engineering and additive manufacturing. Graduates have both qualification and skills to design, build and operate smart systems in a wide variety of industries such as aerospace, automotive, food processing, and electronics industries.

The Bachelor of Business (International Business) degree enables graduates to perform high-level financial and economic analyses with a global perspective.

Graduates equipped with skills from both degrees will be demanded for positions that oversee development of large scale, high value added manufacturing facilities that have a global operational focus.

**WORKING WITH INDUSTRY**

You will have the opportunity to undertake projects in industry both locally and overseas.

**WHAT YOU WILL STUDY**

Your study will cover the essential elements of both degrees.

**Year one**

In first year you will study a mix of courses in basic engineering sciences and business principles from which you build your knowledge foundation.

**Years two and three**

In the second and third years you will study courses that apply the foundation knowledge in focused areas such as electronics, computing, mechatronics, supply chain and marketing. At the end of the third year you will have a good understanding of the breadth of capabilities that you will need in order to practise as an engineering professional who will have responsibilities and work requirements on a global scale.

**Year four**

In fourth year you will study some of the details of engineering systems and processes which are required to enable you to work as an engineer. You will also study management skills that are essential for leading large-scale operations.

**Year five**

In the fifth year you will complete the engineering part of the double degree. The main focus in this year is your final year project that allows you to put what you learn into practice. You will demonstrate your engineering knowledge of creating new mechatronics systems and apply your business knowledge to explore new markets for your innovation.

**CAREER OUTLOOK**

Graduates from this double degree program will have qualification and skills in both engineering and marketing. Surveys in both industry and RMIT channels show that graduates from the engineering degree usually move to positions such as production manager, project manager and in some cases, director of operations. Graduates from the business degree are employed in multinational companies as executives in marketing, supply chain and procurement. Graduates with skills from both degrees are expected to advance their career more quickly due to their broader skills and knowledge.

**PROFESSIONAL RECOGNITION**

The Bachelor of Engineering (Advanced Manufacturing and Mechatronics) degree is accredited by Engineers Australia and graduates are eligible to apply for graduate membership. Australian registered engineers are recognised and able to practise overseas through the Washington Accord.

www.engineersaustralia.org.au

www.washingtonaccord.org

**GLOBAL CONNECTIONS**

You are encouraged to apply to RMIT’s Education Abroad program to exchange with overseas universities such as Hong Kong Polytechnic University and Nanjing University of Aeronautics and Astronautics.

**PREREQUISITE**

Units 3 and 4 — mathematical methods (CAS) and a study score of at least 30 in English (ESL) or at least 25 in any other English.

**EXTRA REQUIREMENTS**

Non-Year 12 applicants must have proof of equivalent qualifications in English and mathematics.

**PATHWAY**

Graduates of the Associate Degree in Engineering Technology (Mechanical) or equivalent, who have been successful in gaining a place, may apply for exemptions. Students with an engineering background from other countries will be considered on a case-by-case basis.

* Years one, two and three are conducted on the City campus and years four and five are conducted on the Bundoora campus.

Legend: see page 59
WHAT YOU WILL STUDY

The first two years of the program are focused on the development of a sustainable systems approach and bring together the fundamentals of engineering sciences, mathematics, engineering design, and engineering professional practice. In the later years of the program, specialist elective courses are offered in transport, energy, or logistics. The program is designed to provide you with a number of opportunities for industry interaction, including with the academic teaching staff who are experienced engineering practitioners with expertise in the above mentioned specialisations.

RMIT is committed to providing you with an education that strongly links formal learning with workplace experience. This program is designed with a unique program structure, incorporating a continuous thread of systems thinking and sustainable design.

The program aims to produce engineers that are not only able to design, implement and operate increasingly diverse processes, but are also able to minimise the overall costs of industrial activities to society and the natural environment.

CAREER OUTLOOK

With climate change a matter of national and international importance, more emphasis is being placed on sustainability in human-developed systems. Meeting these needs and associated challenges in the future will require a comprehensive sustainable design approach, with a focus on whole-of-system requirements and the lifecycle context. Therefore the need for engineering graduates with the ability to handle sustainable systems development is growing rapidly.

You will approach industry problems from a holistic point of view and develop engineering solutions that are optimised as a system and comply with regulatory guidelines. You will also take up leading roles in the building of new business opportunities that demand sustainable solutions.

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PROFESSIONAL RECOGNITION

Accreditation is being sought from Engineers Australia. Once fully accredited, graduates of the program will be eligible for graduate membership of Engineers Australia.

www.engineersaustralia.org.au

The School of Aerospace, Mechanical and Manufacturing Engineering has a Program Advisory Committee for the sustainable systems engineering program, which is an important link to industry. Membership includes senior engineers from a number of major national companies and government and non-government organisations. The committee provides comments and advice on the contents of this program.

GLOBAL CONNECTIONS

The program will introduce significant use of a work-integrated learning environment and experiential learning. Industry placement will be built into the program, including international placement and exchanges with similar overseas programs.

PREREQUISITE

Units 3 and 4 — mathematical methods (CAS) and a study score of at least 30 in English (ESL) or at least 25 in any other English.

EXTRA REQUIREMENTS

Non-Year 12 applicants must complete and submit a VTAC Personal History form (formerly Pi form), available online at www.vtac.edu.au, if they wish other information to be considered. Please refer to the 2013 VTAC Guide for full details on extra requirements.

YOU MIGHT ALSO LIKE...

Engineering—aerospace page 13
Engineering—automotive page 15
Engineering—aviation page 10
Engineering—mechatronics and manufacturing page 53
Surveying and Spatial Information Services

WHAT YOU WILL STUDY

Diploma
You will learn to perform geodetic surveying computations, plan spatial data collection and validation, carry out surveying computations and undertake a civil site survey and set out procedures. In addition to this you will learn how to conduct GPS, engineering and geodetic surveys; carry out an engineering surveying project; create engineering drawings, design roads and railways; and produce maps.

Advanced diploma
You will develop and further your knowledge in drafting, project management, detailed surveying equipment use, remote sensing and quality control.

Areas of study include surveying practice and computing GIS and global positioning systems (GPS), photogrammetry, legislation and cadastral surveying (title surveying), business management, land management, communication skills, and occupational health and safety.

The emphasis is on practical experience using industry-standard equipment. You will use various surveying technologies and software for electronic data capture, processing and presentation. You will take part in exercises in land development, and cadastral surveying will be demonstrated and taught in a project environment.

CAREER OUTLOOK

Diploma
Employment can be found in the spatial information industry as an assistant to land surveyors, survey technicians, GIS/GPS operators, or computer draftspersons. Graduates can also work in areas such as land management, civil and structural engineering, or asset management for local government or mining companies.

Advanced diploma
Graduates find paraprofessional work in the surveying industry as land and engineering surveyors or as surveying or drafting technicians. Graduates may be employed in the spatial information industry as a field party leader, survey technician, GIS/GPS operator or a computer draftsperson. They can initially work in areas such as land management, civil and structural engineering, or asset management for local government or mining companies.

YOU MIGHT ALSO LIKE...

Geospatial science  see the science brochure
Surveying  page 57

PROFESSIONAL RECOGNITION

Students are eligible to apply for membership of the Surveying and Spatial Sciences Institute and the Institution of Surveyors Victoria.

www.sssi.org.au
www.surveying.org.au

Graduates of the Advanced Diploma of Spatial Information Services, who have essential practical experience, are eligible to apply for professional certification with the Surveying and Spatial Sciences Institute.

www.sssi.org.au

EXTRA REQUIREMENTS

There are no prerequisite studies.

PATHWAY

If you successfully complete the Diploma of Surveying, you may choose to continue in the Advanced Diploma of Spatial Information Services. Graduates of the Advanced Diploma of Spatial Information Services may be eligible to apply for exemptions of up to two years from the following degrees:

» Bachelor of Science (Geospatial Science)
» Bachelor of Applied Science (Surveying)
Surveys are masters of measurement, whether it is to locate a property boundary or set out a high-rise building. Today’s surveyors use advanced equipment and specialised software to determine the accurate position of features on the Earth. They also design subdivisions, measure the ocean floor and monitor deformation of the Earth’s crust. It requires attention to detail and a precise mind. The degree is built on a strong link between theory and practice. While there is a sound theoretical base, most subjects incorporate extensive practical work to build skills as well as knowledge. Surveying is a specialised discipline, so you enjoy the advantage of small class sizes, focused content and staff who are easily accessible. RMIT maintains strong links with industry and members of the profession regularly participate in our teaching programs. RMIT offers the only undergraduate degree in our teaching programs. It requires attention to detail and a precise mind. The degree is built on a strong link between theory and practice. While there is a sound theoretical base, most subjects incorporate extensive practical work to build skills as well as knowledge. Surveying is a specialised discipline, so you enjoy the advantage of small class sizes, focused content and staff who are easily accessible. RMIT maintains strong links with industry and members of the profession regularly participate in our teaching programs. RMIT offers the only undergraduate degree in surveying in Victoria. There is also a dedicated field station at Yarra Bend Park to support practical work.

Learning support for students includes a first year transition program, academic coordinators for each year level and a strong Geospatial Science Student Association.

Working with industry
Many RMIT activities are guided by industry. For example, you will undertake an exercise based on the Yarra Bend Park Strategy Plan. You will survey an area of the park, then model, design and illustrate an amphitheatre to suit the local environment. You are also expected to complete 60 days work experience during your program. This is usually in the form of paid employment during vacation periods or as a part-time employee. You may receive assistance in finding a placement.

What you will study
In the early years of the program, you will study the fundamentals of measurement science, cartography and spatial information science (GIS). Other fundamental skills in mathematics, statistics and physics are also covered.

In later years, more specialised studies are offered in geodesy, map projections, spatial analysis, remote sensing, image analysis and professional practice. Specialised studies in cadastral and engineering surveying, GPS and advanced adjustment methods are central components of the program.

Field camps are held in years two and three to reinforce the theoretical learning and allow you to exercise your knowledge on real-world problems. Practical work is based on industry standard software and hardware, the same tools you will find in the workplace. You will have ample opportunities to develop skills and experience with these tools.

Career outlook
Graduates are typically employed in small and medium sized consultancy businesses, in the mining sector and in government agencies. Graduate employment has approached 100% for the past few years and there is a continuing shortage of suitably qualified surveyors.
Degrees and associate degrees

Commonwealth Supported Places (CSP)

A Commonwealth Supported Place (CSP) is a place at university where the tuition fee is jointly paid by you and the Commonwealth Government. Your share of the fee is set by the government and is determined by the discipline area you are studying. This table shows a student’s contribution to the annual fee for a full-time study load in 2012.

<table>
<thead>
<tr>
<th>STUDENT CONTRIBUTION BAND</th>
<th>MAXIMUM STUDENT CONTRIBUTION FOR A PLACE IN 2012</th>
</tr>
</thead>
<tbody>
<tr>
<td>Band PM: national priorities—mathematics and statistics</td>
<td>$4520</td>
</tr>
<tr>
<td>Band PS: national priorities—science</td>
<td>$4520</td>
</tr>
<tr>
<td>Band 1: humanities, behavioural science, social studies, clinical psychology, foreign languages, visual and performing arts, education, nursing</td>
<td>$5648</td>
</tr>
<tr>
<td>Band 2: computing, built environment, allied health, other health, engineering, surveying, agriculture</td>
<td>$8050</td>
</tr>
<tr>
<td>Band 3: accounting, administration, economics, commerce, law, dentistry, medicine, veterinary sciences</td>
<td>$9425</td>
</tr>
</tbody>
</table>

If you undertake more or less than a full-time study load, or you study courses from a combination of the above categories, you will be charged the proportionate student contribution.

HECS-HELP

If you pay all or part ($500 or more) of your student contribution upfront you receive a 10% discount. Alternatively, you can defer payment through the HECS-HELP loan scheme if you meet the eligibility criteria. Your HECS-HELP repayments commence when you reach the minimum income threshold.

If you are a permanent resident (other than humanitarian visa holder) or a New Zealand student you must pay your student contribution upfront and you are not eligible for a discount.

To learn more about HECS-HELP visit www.studyassist.gov.au to obtain a copy of the Information for Commonwealth supported students booklet.

TAFE programs—certificate and diploma

The tuition fees you pay depend on whether you are offered a state government-subsidised place or a full-fee place, based on the eligibility criteria.

Victorian Government-subsidised places

From 2013, tuition fees for a government-subsidised place vary according to each program. For a full list of program fees for a government-subsidised place visit www.rmit.edu.au/programs/fees/tafe2013.

You will be offered a government-subsidised place if you meet the eligibility criteria. Your eligibility for a government-subsidised place will depend on your citizenship, age, prior education (Australian qualifications only) and the number of programs you are studying in the current year. To check if you are eligible visit the TAFE eligibility for a government-subsidised place web page at www.rmit.edu.au/programs/apply/tafe/eligibility and use the TAFE eligibility calculator.

If you are applying for a government-subsidised place, you will be required to provide documentation to establish your eligibility.

For more information about TAFE fees and government funding visit www.skills.vic.gov.au.

Fee concession

You may be entitled to a concession on your tuition fees if you are in a government-subsidised place and you meet the eligibility criteria. For more information about the eligibility criteria and how to apply visit www.rmit.edu.au/programs/fees/tafe/concession.

Full-fee places

If you do not meet the criteria for a government-subsidised place then you will be offered a full-fee place (FFP). From 2013, tuition fees for a FFP vary according to each program. For a full list of program fees for a FFP visit www.rmit.edu.au/programs/fees/tafe/fullfee. Financial assistance may be available through the VET FEE-HELP scheme.

VET FEE-HELP

VET FEE-HELP is an optional loan scheme available to assist eligible TAFE students enrolling in an eligible diploma, advanced diploma, full-fee vocational graduate certificate or vocational graduate diploma program. If you are a full-fee paying student, a loan fee of 20% will be applied to the amount of VET FEE-HELP assistance provided. The loan fee will be included in your VET FEE-HELP debt. To learn more about VET FEE-HELP visit www.studyassist.gov.au to obtain a copy of the VET FEE-HELP Information booklet.

Other fees

In addition to the fees outlined above for degrees and TAFE programs, you may be charged a student services and amenities fee which is indexed annually. Eligible students will be able to defer payment of the fee through SA-HELP. For more information visit www.rmit.edu.au/programs/fees/ssaf.

You may also be required to purchase items related to your program, including field trips, specified textbooks and equipment. These material fees are not compulsory and students may choose to purchase these items independently. Material fees vary from program to program. Please check individual program brochures or contact the relevant school directly for details.

Fees indicated relate to 2012 and should only be used as a guide. RMIT reserves the right to adjust fees for full-fee places on an annual basis by an amount that will not exceed 7.5% each year (subject to rounding). For higher education fees, tuition fees are rounded up to the nearest $10 per credit point increment, and so the actual fee increase may exceed 7.5%. This cap does not apply to domestic full-fee paying TAFE students.
Before applying for a program at RMIT, read the individual program brochure or refer to the relevant program information available at www.rmit.edu.au/programs-courses.

How to apply by program type

<table>
<thead>
<tr>
<th>Program Type</th>
<th>SEMESTER 1</th>
<th>SEMESTER 2</th>
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<tbody>
<tr>
<td>Degrees and associate degrees (not including honours)</td>
<td>VTAC application</td>
<td>Direct application</td>
</tr>
<tr>
<td>Certificate IV, diploma, advanced diploma (full-time)</td>
<td>VTAC application</td>
<td>Direct application</td>
</tr>
<tr>
<td>Certificate IV, diploma, advanced diploma (part-time)</td>
<td>Direct application</td>
<td>Direct application</td>
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<tr>
<td>Certificate III and below*</td>
<td>RMIT school-based application</td>
<td>RMIT school-based application</td>
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<tr>
<td>Apprenticeships and traineeships</td>
<td>RMIT apprenticeship and traineeship application</td>
<td>RMIT apprenticeship and traineeship application</td>
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* Some certificate III and below programs are administered by direct application. Please visit www.rmit.edu.au/programs-courses for more information.

**VTAC application**

To apply for the following RMIT programs for Semester 1 2013, you need to apply through the Victorian Tertiary Admissions Centre (VTAC):
- degrees and associate degrees—full-time and part-time
- certificate IV, diploma, advanced diploma—full-time.

For more detailed information about the VTAC application process, entrance requirements and application dates go to www.vtac.edu.au.

**Direct application**

To apply for one of the following programs submit a direct application at www.rmit.edu.au/programs/apply:
- certificate IV, diploma, advanced diploma—part-time
- VCE
- distance education degree program
- all midyear applications.

**RMIT school-based application**

A number of TAFE certificate I, II, III and a limited number of certificate IV programs accept applications directly to the relevant RMIT school. Information on where to obtain and lodge an application can be found on the program information web page at www.rmit.edu.au/programs, by contacting Info Corner, or by contacting the relevant RMIT school at www.rmit.edu.au/schools.

**Midyear entry**

To apply for midyear entry at RMIT you need to submit a direct application online. Not all RMIT programs will accept applications for midyear entry. A list of programs accepting midyear applications is published in May at www.rmit.edu.au/midyear.

**Extra requirements**

Many programs at RMIT have extra requirements as part of the selection process such as:
- an interview
- a test
- a folio

It is very important that you carefully read any extra requirements listed under programs in the current VTAC Guide or in RMIT program brochures. Failure to comply with these requirements by the date specified will jeopardise entry into a program.

**Application dates**

For VTAC and direct application dates and deadlines, please see important dates on the back cover or go to www.rmit.edu.au/programs/apply.

**More information**

For more information about RMIT programs and application procedures go to www.rmit.edu.au/programs-courses or contact Info Corner, 330 Swanston Street, Melbourne, tel. +61 3 9925 2260 or email study@rmit.edu.au.

**Non-Year 12**

VTAC considers you a non-Year 12 applicant if you are not currently enrolled in any Australian Year 12 or International Baccalaureate studies in Australia. Non-Year 12 applicants may have different requirements from current Year 12 applicants. You should check the VTAC Guide and the RMIT program brochures for any extra requirements for non-Year 12 applicants before you apply.

All VTAC non-Year 12 applicants must fulfill the necessary extra requirements when applying for RMIT programs.

For detailed information go to www.vtac.edu.au.

**TAFE enrolment**

The structure of a TAFE qualification is pre-determined by the relevant industry training package. How you progress through the qualification levels in a training package, combined with your eligibility for a government-subsidised place, will determine the tuition fees that you will pay.

For the following programs, you will be admitted into the lowest level in the training package and upon successful completion of each qualification level you can choose to exit with a lower listed qualification upon the successful completion of the required courses (subjects). Your eligibility for a government-subsidised place will be assessed at the highest entry point and this will determine the fees you will pay:
- Engineering—aerospace (page 12)
- Engineering—mechanical/manufacturing (page 22)

For the following programs, you will be admitted into the lowest level in the training package and upon successful completion of each qualification level you can apply to commence the next qualification level in the training package. Each qualification level is classed as a new enrolment in a new program and your eligibility for a government-subsidised place will be assessed prior to enrolling in each program. This will determine the fees you will pay. Most students will commence at the lowest qualification level, however you may be able to commence at a higher qualification level, subject to recognition of prior learning:
- Spatial information services and surveying (page 56)
- Telecommunications (page 50)

More information about TAFE tuition fees is available in ‘Money matters’ on page 58.
**IMPORTANT DATES 2012**

<table>
<thead>
<tr>
<th>AUGUST</th>
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<tr>
<td>6</td>
<td>VTAC applications open</td>
</tr>
<tr>
<td>6–12</td>
<td>Engineering Week</td>
</tr>
<tr>
<td>12</td>
<td>RMIT Open Day—City, Brunswick, Bundoora</td>
</tr>
<tr>
<td>12</td>
<td>Direct applications open for degree and diploma programs (Semester 1 2013 intake)</td>
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<thead>
<tr>
<th>SEPTEMBER</th>
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<tbody>
<tr>
<td>28</td>
<td>Closing date for VTAC applications (timely)</td>
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<tr>
<th>OCTOBER</th>
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<tbody>
<tr>
<td>9</td>
<td>Closing date for VTAC SEAS and Direct ACESS applications</td>
</tr>
<tr>
<td>31</td>
<td>Closing date for direct applications—selected TAFE programs</td>
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<th>NOVEMBER</th>
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<td>9</td>
<td>Closing date for VTAC applications (late)</td>
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<th>DECEMBER</th>
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<td>1</td>
<td>Closing date for direct applications—selected degree and TAFE programs</td>
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<tr>
<td>7</td>
<td>Closing date for VTAC applications (very late)</td>
</tr>
<tr>
<td>17</td>
<td>VCE results and ATAR released</td>
</tr>
<tr>
<td>17–24</td>
<td>VTAC Change of Preference</td>
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^ Dates not available at the time of publishing. Contact Info Corner for further information.

**IMPORTANT DATES 2013**

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<tr>
<th>JANUARY</th>
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<tr>
<td>17</td>
<td>VTAC round one offers available online</td>
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<tr>
<th>FEBRUARY</th>
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<tbody>
<tr>
<td>6</td>
<td>VTAC round two offers available online</td>
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<th>MARCH</th>
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<tbody>
<tr>
<td>^</td>
<td>RMIT Careers Advisers’ Seminar</td>
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<th>APRIL</th>
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<tbody>
<tr>
<td>18–21</td>
<td>The Age VCE and Careers Expo</td>
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<tr>
<th>MAY</th>
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<tbody>
<tr>
<td>1</td>
<td>Midyear intake applications open</td>
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<tr>
<td>^</td>
<td>City Tertiary Information Service (TIS) (for Year 12s)</td>
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<td>WRICA Careers and Employment Expo</td>
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<tr>
<td>31</td>
<td>Closing date for direct applications—midyear (late applications accepted after this date subject to availability)</td>
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<thead>
<tr>
<th>JUNE</th>
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<tr>
<td>^</td>
<td>Midyear student exhibitions—art, design and multimedia</td>
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<tr>
<th>JULY</th>
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<tbody>
<tr>
<td>^</td>
<td>Experience Advertising, Marketing and PR Day</td>
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<tr>
<td>^</td>
<td>Experience Aerospace, Mechanical and Manufacturing Day</td>
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<tr>
<td>^</td>
<td>Experience Art and Design Day</td>
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<tr>
<td>^</td>
<td>Experience Community Justice Day</td>
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<tr>
<td>^</td>
<td>Experience Computing, Animation and IT Day</td>
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<tr>
<td>^</td>
<td>Experience Electrical and Computer Engineering Day</td>
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<tr>
<td>^</td>
<td>Experience Health and Medical Sciences Day</td>
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<tr>
<td>^</td>
<td>Herald Sun Melbourne Career Expo</td>
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<td>^</td>
<td>Medical Laboratory visits for VCE students</td>
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<tr>
<td>^</td>
<td>Nuclear medicine laboratory visits for VCE students</td>
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</table>

This guide is designed for Australian students

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Every effort has been made to ensure the information contained in this publication is accurate and current at the date of printing. For the most up-to-date information, please refer to the RMIT University website before lodging your application.